

**COMMUNICATION AND CHANGING ATTITUDES AND PERCEPTIONS
TOWARDS CHILDBEARING IN THE ADVENT OF HIV AND AIDS: A
CASE STUDY OF NEWTOWN AND CENTRAL TOWN COMMUNITIES
IN KASAMA DISTRICT**

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**A dissertation submitted to the University of Zambia in partial fulfillment of
the requirements for the award of the degree of Master of Communication for
Development (MCD)**

THE UNIVERSITY OF ZAMBIA

LUSAKA

2013

Declaration

I, Merit Bwalya declare that this dissertation:

- (a) Represents my own work;
- (b) Has not been submitted for a degree at this or any other university; and
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Signed_____ **Date** _____

Certificate of Approval

This dissertation of MERIT BWALYA has been approved as fulfilling the requirement for the award of the degree of master of Communication for Development by the University of Zambia.

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Abstract

HIV and AIDS prevalence and fertility rates in Southern Africa has been consistently reported among the highest in the world. Little is known, however, about how HIV infection affects the fertility preferences of men and women in the region. The consequences of the pandemic in Southern Africa are growing, not just in size but also in complexity. The consequences are social, cultural, economic and psychological as well as biological. One overlooked consequence of the pandemic is how HIV infection affects the desire to have children in a context where reproduction is highly valued.

This study used data collected from a representative sample of women in Kasama district to explore the relationship between HIV and AIDS, and childbearing. A total of 120 questionnaires were distributed in Newtown and Central town communities in the district to help generate information about people's perceptions and attitudes towards childbearing following the advent of HIV and AIDS in Kasama.

They study incorporated individual level characteristics, knowledge of HIV and AIDS, and access to multimedia HIV and AIDS information to ascertain whether or not the communication strategies put in place by the Government of the Republic Zambia to reduce MTCT were being adhered to. The research analyzed how Prevention of Mother-to-Child Transmission (PMTCT) services as implemented by the Ministry of Health at Kasama Urban Clinic has impacted on people's preferences to bear more children or not.

Finally the following recommendations have been made to ensure that Kasama Urban Clinic, being the major and biggest centre offering PMTCT services in the district to incorporate the Safe Motherhood Action Group (SMAG) initiative. This is in an effort to ensure effective service delivery and communication regarding safe motherhood hence improving on childbearing prospects by women from the clinic especially with the proved efficacy of the services offered by these groups in different parts of the Northern Province.

Dedication

This thesis is dedicated to my parents Mr and T M Mrs Bwalya, my husband Chungu and our son Ryan.

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List of Acronyms

AIDS	Acquired Immune Deficiency Syndrome
ANC	Antenatal care
ART	Antiretroviral Therapy
ARV	Antiretroviral
CD4	Lymphocytes T-cells Count
CT	Counselling and Testing
DBS	Dry Blood Spots
HAART	Highly Active Antiretroviral Therapy
HIV	Human Immunodeficiency Virus
MCH	Maternal and Child Health
MTCT	Mother-to-child transmission
NVP	Nevirapine Tablet
PHAs	People living with HIV and AIDS
PMTCT	Prevention of Mother-to-Child Transmission
VCT	Voluntary Counselling and Testing
WHO	World Health Organization
ZDC/AZT	Zidovudine Tablet
3TC	Lamivudine Tablet

CHAPTER ONE

BACKGROUND OF THE STUDY

1.1. Introduction

In the early 1980s, a new syndrome, the acquired immune deficiency syndrome (AIDS), was first recognized among homosexual men in the United States of America. By mid 1980's, it became clear that the virus had spread, largely unnoticed, throughout most of the world (UNAIDS 2008).

Behram et al., (2002, p.2) mentions that the AIDS epidemic has reached crisis levels in sub-Saharan Africa. Africans represent 70% of the world population living with HIV and AIDS. The disease has become one of the major if not the pre eminent cause of deaths in regions of Africa. The timing, pace and extent of behavioural responses to the epidemic is related to several factors: the knowledge of individuals about the disease, the availability of effective strategies to reduce the probability of infection, and the individuals' subjective perception of their own exposure to HIV. In areas where HIV prevalence is high, almost everyone has the abstract knowledge to prevent the infection.

The HIV and AIDS epidemic has had a devastating impact on the life expectancy of many communities in Sub Saharan Africa in which prevalence remains high. Despite the difficulty of accurately measuring deaths from AIDS, the mortality and life expectancy consequences of the epidemic have dominated demographic research on an issue that has received little attention from the research community that is the relationship between the HIV and AIDS epidemic and childbearing (Millers 2003).

Millers (2003, p.320) in her studies argues that the HIV and AIDS epidemic has an effect on childbearing in that men and women who are at high risk of becoming infected with HIV or are already infected may attempt to increase their pace of childbearing. At the same time, speculation has been that the HIV and AIDS epidemic will exert a downwards pressure on childbearing as individuals faced with the disease opt to reduce their fertility out of fear for a possible transmission of the virus and concern for their children's future care. Under a natural fertility regime where childbearing is assumed, non-volitional and conscious control of fertility does not exist, explanations for the fertility reducing effect of HIV and AIDS rely on classical proximate determinants, primarily coital frequency.

Caldwell and Quiggin (1989, p.123) state that “childbearing changes due to HIV and AIDS epidemic are likely to influence the process of fertility transition and to complicate our conceptualization of it”.

This research is relevant insofar as it points to the relationship between the HIV and AIDS pandemic and childbearing namely; individual behavioural changes, delayed age at marriage or start of sexual activity, increase in divorce or separation rates, modifications in levels of condom use and increased abstinence from sex, all resulting from the fear of infection (Millers 2003,p. 320).

This paper, therefore, presents findings of an investigation into the factors associated with sexual behaviour and childbearing intentions among the communities of Newtown and Central town in Kasama district in the Northern province of Zambia and the communication strategies put in place by the Zambian government to provide information on Prevention of Mother-to-Child Transmission (PMTCT) at Kasama Urban Clinic, so as to have a positive influence on individual childbearing prospects. Knowledge of the childbearing impact of the HIV and AIDS epidemic is important because of the close relationship that childbearing has to the rate of population growth (Millers 2003, p. 325).

1.2. Global Situation

Until 1996 in the developed countries, and 2000 in most of sub-Saharan Africa, HIV infected persons were certain of early death and nearly had no known chance of reproduction because of the high risk of transmitting the virus to their sexual partners and their unborn babies. HIV prevention and AIDS care masked fertility and reproduction concerns among people living with HIV and AIDS (Stolte , 2004, pp. 303-309). It was generally presumed that people living with HIV would not desire to have children and in fact most HIV and AIDS programmes discouraged childbearing among People living with HIV and AIDS (PHAs) and childbearing was often considered accidental or due to ignorance of their HIV and AIDS status.

A growing body of research and experience has identified safe, feasible and effective interventions to reduce HIV transmission for HIV infected pregnant women to their infants, including Antiretroviral chemoprophylaxis, safer obstetric practices and infant feeding counselling and support. However, for a woman to benefit from these interventions, she must go

for antenatal care (ANC) and/or maternity services, and she must access counselling and testing services (Family Health International, 2004, p. 7).

Most developing countries like Zambia can provide only limited maternal and child health (MCH) services, as they face managerial, financial and human resource constraints. Even where services are available, potential beneficiaries do not fully use them. In many such countries, the majority of the women will seek only one antenatal care (ANC) visit during a given pregnancy and report for ANC care late in pregnancy. Fewer than half of births occur inside MCH settings. Improving the availability, quality and use of Maternal and Child Health (MCH) services is critical in reaching women who may benefit from PMTCT interventions.

Many studies have outlined the challenges posed by HIV in reproduction and the need to review reproduction policies and practices to accommodate the needs of HIV positive people which is overdue. From the late 1990s there have been calls to change public health opinion against reproduction by PHAs. There is evidence that some PHAs continued to bear children knowingly regardless of the risk of mother to child transmission and the risk of transmitting HIV to their spouses. Advising people with HIV not to have children probably caused non disclosure to spouses as well as exposed many children to HIV infection (Aka-Akribi-Dago et al., 1999, pp, 77-86).

This situation has changed with the introduction of antiretroviral therapy, which has not only improved the health status of PHAs, but enabled them to live much longer. ART has also made the Prevention of Mother To Child Transmission of HIV (PMTCT) possible, reducing transmission rate to as low as 2% (International Parental HIV group 1999). The gains in health and economic self reliance, and PMTCT could have made PHAs rethink their reproduction decisions and want to bear children (Natal 2011, p. 4).

Natal (2011, p.3) states that preventing HIV in women, particularly young women, and their partners is the best way to ensure that secondary transmission to infants does not occur. Without the information, skills and services they need to make informed choices, young people are more likely to avoid or reduce childbearing. Interventions have enormous potential to turn the tide of HIV infections among youth and ultimately to reduce mother-to-child transmission thereby increasing the prospects of bearing more children. Other strategies include providing information

though channels like- the media, theatre, live arts and technology such as the internet. Another approach to preventing primary HIV infections is through large-scale STI interventions. PMTCT interventions present an opportunity to improve and strengthen essential MCH services.

According to Arlington (2004, p.5) effective PMTCT program implementation requires upgrading existing MCH services, for example, by enhancing physical infrastructure; ensuring that essential pregnancy, maternity and postnatal services are provided; and preparing staff to undertake new roles; a challenge which developing countries like Zambia need to overcome. Since existing interventions to prevent MTCT have not been fully implemented in most resource – constrained countries, many unanswered operational questions related to PMTCT remain. Intervention-linked research on current and future PMTCT efforts must be conducted to discern new opportunities to advance service delivery, to determine the effectiveness of different interventions and to inform provider and policymakers.

1.3. Zambian Situation

Zambia introduced the Prevention of Mother-to-Child (PMTCT) services to all health institutions in the country in 1999. The Ministry of Health through the National HIV/AIDS/STI/TB Council (NAC) is currently offering these services according to the 2010 National Protocol Guidelines, which aims to reduce the transmission of HIV from HIV positive mothers to their unborn babies during pregnancy or breastfeeding (2010 national protocol guidelines, p.1).

The National HIV/AIDS/STI/TB Council (NAC) became operational in 2002 when parliament passed a national AIDS bill that made the NAC a legally-established body able to apply for funding (the prospect of a large World Bank grant provided much of the necessary motivation). At the passing of this bill, the NAC became the single, high-level institution responsible for coordinating the actions of all segments of government and society in the fight against HIV and AIDS (Frizelle et al 2009, p.1).

To scale up its campaign, the National AIDS Council in 2004 called for mandatory HIV/AIDS testing in all its hospitals in an effort to control the epidemic (2010 national protocol guidelines, p.5).The council has also sought to use television, radio and the press as they have proved to be influential in raising awareness, even though not all people have direct access to them.

PMTCT services are now offered in all the districts in the 10 provinces of Zambia. With a high prevalence, estimated at 16.4 percent in 2008, approximately 80,000 infants born annually are at a risk of acquiring HIV from their mothers. Integration of PMTCT into all maternal, newborn and child health services throughout the country will contribute to a significant reduction of transmission of HIV and subsequent child morbidity and mortality. (2010 national protocol guidelines, p.1)

Preventing new HIV infections remains a significant public health challenge for Zambia. The high HIV-infection and mortality rates of under - five olds due to mother-to – child transmission (MTCT) of HIV, draws attention to the urgency for improved efforts to offer quality PMTCT services in Zambia (Frizelle et al., 2009, p.1).

Ultimately, Zambia aspires to provide universal treatment access, so that ARV therapy is equally available to everyone who is clinically eligible. Research elsewhere among PHAs has revealed a number of reasons including age, marriage and childlessness for the desire to bear children, posing new medical, ethical and legal challenges (HIV and AIDS in Zambia 2010, p.2).

HIV infection occurs mostly among the young and sexually active people most of whom either have just started their reproductive career or are just about to begin. It should also be noted that many children born with HIV or acquired the infection in childhood are now adults and may be sexually active and may want to become parents. Research has revealed that childbearing decision among positive women in most cases depends largely on their age. Most of the PHAs who express the desire to have children willingly are relatively young compared to those who do not want to have children (Young People Most at Risk of HIV: A Meeting Report and Discussion Paper from the Inter-agency Youth Working Group, NC: FHI, 2010).

Marriage is an important factor in childbearing decisions, regardless of HIV. In most societies in Zambia the primary purpose of marriage is to bear children and extend lineages and therefore marriage without children is often resented. The failure to bear or delay childbearing in marriage may result in a lot of pressure on the couple and may lead to dissolution of marriage (Natal 2011, p.3). Women are known to bear the wrought of childlessness more than men and are, therefore, often under a lot of pressure from both sides of the marriage to bear children, HIV withstanding.

Klein et al., (2003 p. 320) found that HIV positive persons who have no children were going to greater length to have children including risking their health. Similarly, Rudin et al., (1998) in a study of a group of HIV positive women found that 43% had actually planned getting pregnant and had no plans to terminate the pregnancy on account of HIV. It has been observed in past research that PHAs on ART with fewer children desired to have more children (Natal 2011, p. 3).

At the moment, it is not known how long a person on ART will live, but there is evidence that some people have already lived for more than 2 decades with HIV. It is, therefore, likely that HIV infected people can reconsider their childbearing options and decisions.

1.4. Scope of Study

The study was located in Newtown and Central town of Kasama district in the Northern Province of Zambia. The area was chosen because it has both characteristics of urban and rural which was important in having a wider perspective of the topic.

Central town is a sparsely populated area with most of its residents being educated and is located near the central business area. On the other hand Newtown is a densely populated area with most of its occupants being uneducated villagers and is also located not far away from the central business area. Residents from these two communities access health care services at Kasama Urban Clinic which is the nearest health centre.

1.5. Statement of the Problem

Both locally and internationally, a number of studies have been done regarding the relationship between HIV and AIDS and its impact on fertility. Amongst the questions that remain to be answered, is whether HIV and AIDS has changed fertility intentions among women of childbearing age of New and Central town communities in Kasama district, that is, whether to have children, and if so, how many? While others may choose to delay entry into marriage unions, due to mistrust of their possible suitors or possible suitors mistrust of them.

1.6. General Objective

The main objective of this thesis is to examine the communication strategies, attitudes and perceptions of women about childbearing in the advent of HIV and AIDS in Kasama district in the Northern Province of Zambia.

1.6.1. Specific Objective(s)

- 1.6.1.1. To determine the main sources of information on HIV and AIDS, and childbearing.
- 1.6.1.2. To assess the relationship between peoples' attitudes and perceptions towards childbearing and HIV and AIDS.
- 1.6.1.3. To examine the perceptions of women on childbearing in the advent of HIV and AIDS.
- 1.6.1.4. To establish socio-economic factors underlying willingness/reluctance to having children considering HIV and AIDS.
- 1.6.1.5. To investigate people's attitudes towards childbearing in the era of HIV and AIDS

1.7. Rationale

Although HIV-prevalence and fertility rates in sub-Saharan Africa are among the highest in the world, little is known about how HIV infection affects the fertility preferences on men and women in the region. The motivations underlying this effect are greatly influenced by gender; women fear the physical health consequences of HIV positive pregnancies and childbearing, whereas men see childbearing as futile because they anticipate their own early deaths and the deaths of their future children (International Family Planning Perspectives, Volume 26, number 3, September 2000, p 4).

The rationale for studying the relationship between HIV and AIDS and childbearing is to assess the consequences of the pandemic on the communities of Newtown and Central town in Kasama district and how the communication strategies available at Kasama Urban Clinic have affected their childbearing intentions. These consequences are social, cultural, economic, and

psychological, as well as biological. One often overlooked consequence of the pandemic is how HIV infection affects the desire to have children in a context where reproduction is highly valued.

As the HIV and AIDS pandemic matures, and people have access to more information, the relationship between HIV and AIDS, and fertility has the potential to become one of choice. In particular, the recent expansion of HIV testing and counselling services at Kasama Urban Clinic offers people information about their HIV status before the signs and symptoms of a more advanced infection emerge. In the light of the high HIV prevalence and fertility rates in the region, intentional changes in fertility due to HIV infection could have considerable epidemiologic, demographic, and programmatic implications (Nguyen R. et al., 2006, pp. 842-846.)

Given the potential for family planning programs to reduce perinatal and heterosexual transmission, more research is needed to understand if and how the AIDS epidemic influences reproductive decision making. To understand the impact of HIV and AIDS on fertility, it is necessary to know if and how women who are not knowingly infected adjust their desire to have children in response to the risks associated with the epidemic. Research is needed not only on how women and men make decisions but on which, if any, interventions would assist them in making better choices about childbearing and contraceptive use and empower them to act on those choices (International Family Planning Perspectives, Volume 26, number 3, September 2000, p.3).

1.8. Hypothesis

HIV and AIDS does have an effect on fertility and childbearing.

This hypothesis is based on the defining role played by reproduction in shaping the childbearing intentions and social identities, particularly in the Zambian context.

CHAPTER TWO

STUDY METHODOLOGY

2.1. Introduction

This chapter describes the research design and the setting for the study, the research questions, sampling method and the research instruments used. The chapter continues to explain the procedure of data collection, the method of data analysis, limitations as well as discussion around the ethical considerations regarding the study.

2.2. Research design

Research design is defined by O'Leary (2004, p.85) as the plan for conducting a study that includes methodology, methods and tools involved in quantitative or qualitative research. Quantitative research effectively deals more with knowing, while the qualitative research method deals with understanding (Welma, Kruger and Mitchel, 2005 p.64). The design used was cross-sectional comparative, a non-intervention study design which utilized both qualitative and quantitative methods.

The qualitative method was used to establish the views of women with regard to their childbearing intentions in the advent of HIV and AIDS. The qualitative method on the other hand was used to establish the communication strategies used the knowledge and the sources of information about PMTCT that would otherwise alter women's attitudes and perceptions on childbearing. The design used sought to analyse whether information aired on the local community radio station, Radio Mano, was news or opinion and how this information was being used by the people to change their attitudes and perceptions on childbearing in the advent of HIV and AIDS. This was considered important because the mass media provide the main sources from which a substantial portion of the population draw their knowledge and information on HIV and AIDS and other diseases that affect the people of Newtown and Central town communities in Kasama district. Thus in studying how much coverage the Radio station gave on HIV and AIDS, the researcher also sought to find out in what form the information was presented.

The researcher came up with a research design that would examine the extent of coverage of HIV and AIDS issues on addressing peoples concerns on whether or not it is safe to bear children regardless of their HIV and AIDS status and whether the information being given to patients seeking medical care at Kasama Urban Clinic was sufficient to influence their intentions to bear children regardless of their HIV status.

2.3 Research questions

The researcher asked the following questions which guided the study:

- 2.3.1. How has HIV and AIDS affected people's attitudes towards childbearing?
- 2.3.2. How effective are PMTCT Communication Interventions in changing attitudes and perceptions towards childbearing in the advent of HIV and AIDS?
- 2.3.3. What are the main sources of information on childbearing and HIV and AIDS?

2.4. Study Area

The study was conducted in Kasama district in the Northern Province of Zambia, at Kasama Urban Clinic which is a referral clinic. As it is located in the central district most of the residents access health care at this facility.

2.5. Study Population

The population of the study was women of childbearing age between 16 and 45 years of age in Newtown and Central Town communities in Kasama district. Purposive sampling- a non probabilistic technique was used to select the study population. Non probabilistic sampling involves a sample of units where the selected units in the sample have an unknown probability of being selected and where some units of the target population may have no chance at all of being in the sample. Potential respondents were selected based on their age, availability and willingness to participate in the study.

2.6. Sampling procedure

The study used different sampling procedures for various participants, hence having a mixed approach. According to O'Leary (2004, p. 103) sampling is a process that is always strategic and

sometimes mathematical, which involves using the most practical procedure possible for gathering a sample that best ‘represents’ a larger population.

Sampling of survey respondents took several steps: household listing, selection of household with eligible participants (women of childbearing age between 16 and 45 years of age), sample size determination and selection of respondents. A sample of 120 respondents was selected. The expectation was that this sample would give a representative indication of the study output.

2.6.1. Sampling method

The stratified sampling method was used so as to get a proper representation of the study. Bless et al., (2006, p.32) defines stratified sampling method as dividing a population into different groups, called strata, so that each element of the population belongs to one and only one stratum. A stratum is defined as a subset of the population which is being sampled. Random sampling was done from each stratum using either the simple or the interval sampling method. The data collected from the sample size represented opinions of the rest of the population in both Newtown and Central town communities.

2.7. Research Methods

The quantitative and qualitative methods were both employed to provide rich information. The use of both the quantitative and qualitative methods is known as Triangulation. Specific methods that were used for data collection were personal in-depth-interviews, focus group discussions, questionnaires to collect data on quantitative information, and non-participant observation to collect data on other types of qualitative information.

2.7.1. Qualitative Research

Qualitative Research is a method which involves collecting, analyzing, and interpreting data by observing what people do and say. It is much more subjective and uses very different methods of collecting information, mainly in-depth interviews, focus group discussions and the observation method (Anderson 2006, p.3). This method was used because it allows respondents to speak

freely from the depth of their heart about the subject matter. Hence they could even reveal more than they are being asked for and this could enrich the research.

2.7.1.1. In-depth Interviews

In-depth interviews were conducted with several different categories of people as part of the study involving health care providers at Kasama Urban Clinic and community elders from Newtown and Central Town communities. A separate question guide was created in advance for each category. Each guide was tailored to elicit information specific to the category of participants being interviewed.

Purposive sampling was used to select the potential research subjects for the study. This is a procedure of selecting research informants on the basis of their relevance to the research questions, theoretical and analytical position of the study as well as the argument or explanation that the researcher is developing (Mason 2002, p.62).

A total of 10 key informants were interviewed. These were: one laboratory technician, the medical superintendent, a sister in-charge, three counsellors and five nurses. The data was documented using field notes which were later expanded immediately after the interview.

2.7.1.2 Focus Group Discussion

A focus group could be defined as a group of interacting individuals having some common interest or characteristics, brought together by a moderator, who uses the group and its interaction as a way to gain information about a specific or focused issue (Krueger 1988, p. 20).

Focus group discussion (FGD) participants were sampled using convenience sampling techniques. Each FGD comprised of about 6 to 10 participants. A total of 8 focus group discussions were held.

Discussions were conducted in a convenient location for at least one to two hours using an outline of a discussion guide. The moderation of the discussion by the researcher was done in the

language best spoken by the participants and in this case, Bemba was used. All discussions were recorded by way of writing notes. Interview notes were later assembled for each group interview. After reviewing all the responses the questions or topic, a summary statement that described the discussion was written

Participants were asked to respond to general questions and the researcher/moderator probed and explored their responses to identify and define people's perceptions, opinions and feelings about how HIV and AIDS has affected their childbearing prospects and to determine the degree of agreement that existed in the group.

2.7.1.3 Observation Method

Observation is the selection and recording of behaviours of people in their environment (Anderson 2006, p.3). The context or background of behaviour is included in observations of both people and their environment. The observation method involves human or mechanical observation of what people actually do. Information was collected by observing the process of counselling which was conducted at Kasama Urban Clinic during antenatal sessions where women were counselled before and after testing, and how the women received the information and advice given by the midwives and counsellors at the clinic.

The non participant observation method involved actual watching of staff at the clinic doing their duties as they attended to patients. The aim was to observe various types of services rendered at Kasama Urban Clinic and how it was done in their natural environment without interfering with the respondents.

The researcher observed various activities done and listened to information or advice given to individual expectant mothers by the midwives prior to testing and after testing. Through the observation method, the researcher was able to establish the complex patient – nurse interaction in the natural social setting and to note the body language and effect in addition to the person's words. The goodness of using the observation method is that it allows for the researcher to take note of the non-verbal cues that could not otherwise be brought out through verbal

communication as some participants found certain topics pertaining to the subject to be very sensitive, hence body language playing a key role in certain instances .

2.7.2. Quantitative Research

O’Leary (2004, p. 99) describes quantitative research as producing qualitative data that can be represented through numbers and analyzed using statistics. The data collection techniques used in this research includes structured questionnaires and schedules. This method was used as it is more structured and controlled in nature hence making it easier to analyze data from cross tabulation of complex analysis techniques.

2.7.2.1. Questionnaire

A questionnaire can be defined as a list of carefully structured questions chosen after testing, with the view of eliciting reliable responses from a chosen sample. The aim of a questionnaire is to find out what a selected group of participants do, think or feel (Meyer et al., 2004,pp. 42-45).

Anderson (2004, p. 208) contends that surveys using questionnaires are perhaps the most widely used data gathering techniques in research and can be used to measure issues that are crucial to the management of human resources, such as behaviour, attitudes, beliefs, opinions, characteristics, expectations and perceptions.

A self-administered questionnaire was designed by the researcher. The questionnaire comprised mostly of closed-ended questions, as open ended questions sometimes tend to provide data that is difficult to code and analyze. Open-ended questions were utilized in order to retrieve the maximum amount of information without imposing on the time and resources of the respondents (O’Leary 2004, p. 159).

2.8. Data collection instruments

Data collection was both qualitative and quantitative. Firstly, Primary data was gathered using a questionnaire which was designed and pre-tested. The researcher administered the questionnaire. Questionnaires were chosen because they are easier to administer, generate wider coverage in a short period of time, save on time and financial costs. The questionnaire helped the researcher to capture information on the childbearing intentions of the respondents in the advent of HIV and AIDS.

Secondary data was collected from so many research reports which were either published or unpublished; from Journals, Newspaper articles, and specific websites as well. Data was also gathered from Kasama Urban Clinic, Antenatal Ward where In-depth interviews were held with members of staff.

The observation method was used to collect information at the clinic during Antenatal visits. This method was used because the nature of the topic at hand is very sensitive as it boards on peoples personal health status. Focus Group Discussions (FGDs) were also used to collect information from people from Newtown and Central town communities. The FGDs were used as they enabled the researcher collect information at once hence cutting down on time and it also allowed for information exchange which was very educative. Additionally, the method was inexpensive and was not time consuming while giving a high response rate.

2.9 Data analysis

Miyanda (2010, p.3) defines Data Analysis as a process of making meaningful and useful conclusions from bulky and jumbled pieces of information obtained during the course of one's investigation of the problem.

Qualitative data for In-depth interviews and Focus group discussions was analyzed by categorizing open-ended questions (content analysis). These were later counted to create a percentage of comments given by participants. The data from the observations checklists were used to give credibility to the answers provided by both the patients and the medical staff at the clinic. Direct quotes from the respondents were also used.

Quantitative data from questionnaires was edited before leaving each respondent for uniformity and accuracy. The data was then coded and entered. The analysis was then made using the Statistical Package for Social Sciences (SPSS). The SPSS generated results in form of tables, graphs and charts basing on the following variables like age of the respondent, reactions on the communication strategies used with regard to PMTCT, attitudes and perceptions towards childbearing and attendance of antenatal.

3. Ethical considerations

Welman et al. (2005, p.183) explain that ethical considerations and ethical behaviour are as important in research as they are in any other field of human activity. Before embarking on the data collection process, the researcher obtained an introductory letter from the University of Zambia after approval of the Proposal. As such the researcher sought for permission and was given consent prior to data collection by the Kasama District Health Office and Management at Kasama General Hospital to conduct the study at Kasama Urban Clinic. After getting the clearance form the Hospital, the researcher obtained informed consent form the respondents and informed them about the purpose of the study.

Questionnaires were personally administered by the researcher to the residents of Newtown and Central Town as well as members of staff at Kasama Urban Clinic. The researcher took the respondents step-by-step through the research process, which included: (1) the purpose of the study, (2) concepts of confidentiality and anonymity, (3) secure storage of data and (4) significance of the study.

Having been aware of the research being conducted, the staff at Kasama Urban Clinic explained the ethical rights also to the patients and permission and informed consent from the subjects being observed was sought by the nurses in charge. The researcher also advised participants from the two communities of Newtown and Central town to go to Kasama Urban Clinic should they require further counselling on HIV and AIDS.

4. Limitations of the study

The use of the observation method was time consuming as it required the researcher to be present at all the counselling sessions at the clinic to make the observation more meaningful. The researcher also needed to translate the questions from English to Bemba as most of the respondents were illiterate. Some respondents from the randomly selected households did not want to participate in the exercise or answer the questions as they regarded some information to be too sensitive to disclose hence making the exercise very difficult. However to overcome this problem, the researcher had to explain fully the purpose of the study and assured the respondents confidentiality of the information given.

The research proved to be quite costly as it was conducted away from Lusaka, the researcher's home town. Hence, expenses such as transport and up keep had to be incurred and the researcher also had to stay away from work for that period.

Since the research was being conducted at the time the researcher was breastfeeding, it became increasingly difficult to leave the baby for a long period of time as would have been desired hence, adding to the cost of transport as the researcher was required to move back and forth from the research station to go and breastfeed the baby.

CHAPTER THREE

CONCEPTUAL AND THEORETICAL FRAMEWORK

3.1. Introduction

This chapter focuses on describing the main concepts used in this research which are appropriate for understanding the issues under investigation in this study and these include; attitude, perception, childbearing, communication, HIV and AIDS, diffusion, knowledge gap and Prevention of Mother to Child Transmission (PMTCT). Two theories which relate to the study such as the Diffusion of Innovations Theory and the Knowledge Gap Theory will also be explored stating their significance to the research.

3.2. DEFINITION OF MAIN CONCEPTS

3.2.1. Perception

Perception is the awareness or apprehension of things by sight, hearing, touch, smell and taste. It is the recognition and interpretation of the knowledge gained. Perception is also described as the organization, identification and interpretation of sensory information in order to represent and understand the environment (Goldstein 2009, pp. 5–7).

All perception involves signals in the nervous system, which result from physical stimulation of the sense organs (Goldstein 2009, pp. 5–7). Perception is not the passive receipt of these signals, but can be shaped by learning, memory and expectation (Gregory et al., 1987, pp. 598–601). Perception involves the "top-down" effects as well as the "bottom-up" process of processing sensory input (Bernstein et al., 2010, pp. 123–124.) The "bottom-up" processing is basically low-level information that is used to build up higher-level information (for instance - shapes for object recognition). The "top-down" processing refers to a person's concept and expectations (knowledge) that influence perception. Perception depends on complex functions of the nervous system, but subjectively seems mostly effortless because this processing happens outside conscious awareness (Goldstein 2009, pp. 5–7).

According to Alan Saks and Gary Johns (2008, p.193), there are three components to Perception. These are the perceiver, the target and the situation. What follows is a detailed explanation of these three components:

1. The Perceiver: the person who becomes aware about something and comes to a final understanding. There are 3 factors that can influence his or her perceptions: experience, motivational state and finally emotional state. In different motivational or emotional states, the perceiver will react to or perceive something in different ways. Also in different situations he or she might employ a "perceptual defence" where they tend to "see what they want to see".
2. The Target: This is the person who is being perceived or judged. "Ambiguity or lack of information about a target leads to a greater need for interpretation and addition."
3. The Situation: This also greatly influences perceptions because different situations may call for additional information about the target.

Alan Saks and Gary Johns (2008, p.193) state that a person's willingness to change their behaviour is primarily due to;

1. Perceived susceptibility which states that people will not change their health behaviours unless they believe that they are at risk. One's subjective perception of the risk of contracting a health condition is described as part of perceived threat.
2. Perceived barriers also influence people to change their behaviour. People think changing their behaviours is going to be difficult. The potential negative consequences that may result from taking particular health actions include physical, psychological, and financial demands.
3. Perceived benefits look at the believed effectiveness of strategies designed to reduce the threat of illness.
4. Perceived severity describes the feelings concerning the seriousness of contracting an illness or leaving it untreated, including evaluations of both medical and clinical consequences and possible social consequences. This is a part of perceived threat.

The term perception was used to determine how people's mindset was changed by way of involving them by using the bottom up approach through group discussions to get a better understanding of how HIV had affected their childbearing intentions and how information received through the top down approach about PMTCT had influenced their decisions to have children.

3.2.2. Attitude

An attitude can be defined as a positive or negative evaluation of people, objects, event, activities, ideas, or just about anything in your environment, but there is debate about precise definitions. Eagly and Chaiken, for example, define an attitude as a psychological tendency that is expressed by evaluating a particular entity with some degree of favour or disfavor. It is sometimes common to define an attitude as affection towards an object. Affect (for instance, discrete emotions or overall arousal) is generally understood to be distinct from attitude as a measure of favorability (Ajzen, 2001, pp. 27–58).

Jung defines attitude as "readiness of the psyche to act or react in a certain way" (Jung 1971, p. 687). Attitudes very often come in pairs, one conscious and the other unconscious. This definition of attitude allows for one's evaluation of an attitude object to vary from extremely negative to extremely positive, but also admits that people can also be conflicted or ambivalent toward an object meaning that they might at different times express both positive and negative attitude toward the same object. This has led to some discussion of whether individuals can hold multiple attitudes toward the same object. Whether attitudes are explicit that is, deliberately formed versus implicit that is, the subconscious has been a topic of considerable research. Research on implicit attitudes, which are generally unacknowledged or outside of awareness, uses sophisticated methods involving people's response times to stimuli to show that implicit attitudes exist. Implicit and explicit attitudes seem to affect people's behavior, though in different ways, although the relationship between them is not properly understood (Wood 2000, p. 539).

Attitude change

Attitudes can be changed through persuasion and an important domain of research on attitude change focuses on responses to communication. Experimental research into the factors that can affect the persuasiveness of a message include:

1. **Target Characteristics:** These are characteristics that refer to the person who receives and processes a message. One such trait is intelligence - it seems that more intelligent people are less easily persuaded by one-sided messages. Another variable that has been studied in this category is self-esteem. Although it is sometimes thought that those higher in self-esteem are less easily persuaded, there is some evidence that the relationship between self-esteem and persuasion is actually curvilinear, with people of moderate self-esteem being more easily persuaded than both those of high and low self-esteem levels (Rhodes & Woods, 1992). The mind frame and mood of the target also plays a role in this process.
2. **Source Characteristics:** The major source characteristics are expertise, trustworthiness and interpersonal attraction or attractiveness. The credibility of a perceived message has been found to be a key variable here; if one reads a report about health and believes it came from a professional medical journal, one may be more easily persuaded than if one believes it is from a popular newspaper. Some psychologists have debated whether this is a long-lasting effect and the effect of telling people that a message came from a credible source disappeared after several weeks (the so-called "sleeper effect").
3. **Message Characteristics:** The nature of the message plays a role in persuasion. Sometimes presenting both sides of a story is useful to help change attitudes. When people are not motivated to process the message, simply the number of arguments presented in a persuasive message will influence attitude change, such that a greater number of arguments will produce greater attitude change.
4. **Cognitive Routes:** A message can appeal to an individual's cognitive evaluation to help change an attitude. In the central route to persuasion the individual is presented with the data and motivated to evaluate the data and arrive at an attitude changing conclusion. In

the peripheral route to attitude change, the individual is encouraged to not look at the content but at the source. This is commonly seen in modern advertisements that feature celebrities. In some cases, physician, doctors or experts are used. In other cases film stars are used for their attractiveness (Petty 1984, pp. 69-81).

Attitudes are evaluative statements either favourable or unfavourable concerning objects, people, or events. They reflect how people feel about things or other people, what they believe, what they intend to do, and whether and how they do it may all be connected, and may all be related to the process of perception.

The term attitude was being used in this research to determine how HIV and AIDS had affected people's mindset with regard to bearing children. Attitude was also being used to access if information on PMTCT was persuasive enough to influence people to consider having children despite their HIV positive status.

3.2.3. Childbearing

Childbearing is a parturition process in human beings, that is, having a baby or the process of giving birth. It is also the process of being pregnant and giving birth to children, the human act or process of giving birth. <http://www.wordnik.com/words/childbirth>. Accessed on 16/11/2012

A woman of childbearing age is of an age when women are normally able to give birth to children. It is the period in a woman's life between puberty and menopause. . <http://www.wordnik.com/words/childbirth>. Accessed on 16/11/2012

Childbearing is any age at which a woman can conceive a child between the time she starts her period and menopause. <http://www.thefreedictionary.com/Child+birth>. Viewed on 16/11/2012

The term childbearing was used in this research to determine whether or not people were willing to have children regardless of their HIV positive status and if the number of positive people having children had gone reduced. The term was also being used to describe how the HIV virus was transmitted from an infected mother to the unborn baby and also to determine how effective medication with regard to HIV prophylaxis had been in ensuring that the virus was not transmitted to the unborn baby.

3.2.4. Communication

Communication is a two-way process of reaching mutual understanding, in which participants not only exchange (encode-decode) information but also create and share meaning. Communication is the exchange of thoughts, messages, or information, by way of speech, signals, writing, or behavior. (*Information Education Communication (IEC) reference manual for Health Programme Managers*, 1998, p.5).

Communication is a two-way process which involves exchanging information, sharing ideas and knowledge. It is a two-way process in which information, thoughts, ideas, feelings or opinions are shared through words, actions or signs, in order to reach a mutual understanding. Good communication means that people are actively involved. This helps them to experience a new way of doing or thinking about things, and is sometimes called participatory learning (*Information Education Communication (IEC) reference manual for Health Programme Managers*, 1998, p.5).

Good communication involves understanding how people relate to each other, listening to what they have to say and learning from them.

Communication is also used for the promotion of health which aims at helping people live healthy lives. It involves increasing people's knowledge and awareness, enabling them to take action to improve their health, and ensuring that their circumstances allow them to make healthy choices. Health promotion includes: health education, developing personal skills, strengthening communicating action, reorienting health services, building healthy public policy and creating supportive environments.

Information, Education and Communication (IEC) in health programmes aims at increasing awareness, change attitudes and bring about a change in specific behaviours. IEC means sharing information and ideas in a way that is culturally sensitive and acceptable to the community, using appropriate channels, messages and methods. It is, therefore, broader than developing health education materials, because it includes the process of communication and building social networks for communicating information (*Information Education Communication (IEC) reference manual for Health Programme Managers*, 1998, p.5).

Communication is an important tool in health promotion for creating supportive environments and strengthening community action, in addition to playing an important role in changing behavior (*Information Education Communication (IEC) reference manual for Health Programme Managers*, 1998, p.6).

The effectiveness of communication depends on the characteristics of:

1. the source (attitudes, knowledge, communication skills, relevance to cultural and social systems.
2. The message (clear, simple, specific, factual, appropriate, timely, relevant
3. The channel used (appropriate, relevant, accessible, affordable)
4. The receiver (attitudes, perceptions, communication skills, knowledge, cultural and social systems)

(*Information Education Communication (IEC) reference manual for Health Programme Managers*, 1998, p.6).

Types of communication

There are at least three main types of communication relevant to Information Education Communication (IEC):

1. Interpersonal communication
2. Group Communication
3. Mass communication

Interpersonal communication, sometimes called face –to –face communication, is one of the most effective methods of communication. Interpersonal communication can be done on a one-to-one basis and can promote sharing of information, encourage dialogue and help people to make their own decisions (*Information Education Communication (IEC) reference manual for Health Programme Managers*, 1998, p.5).

Group communication is an important way to impart information to several people at the same time. It usually entails that all participants become involved in the discussion. Through group communication, other participants can be influenced by others in the group to change their

attitudes and behaviour. A lot of activities are done during group activities to help people to identify the gaps in their knowledge about HIV and AIDS.

Working with groups aims to build on knowledge so as to review what people know and believe. To be able to do this, it is important to know the audience and their information needs, perhaps through reviewing research, clinic reports and records of observing common questions asked to clients. During a group discussion one can assess information needs by asking questions, observing participants' facial expressions and body language (*IEC Reference Manual for Health Programme Managers, Zimbabwe National Family Planning Council, Harare, Zimbabwe, 1998, p.49*).

Mass communication usually involves a much wider audience and employs mass media methods to reach large numbers of people at one time rather than personal interaction.

Interpersonal and mass communication plays different but complementary roles in IEC. For example, a television or radio spot can introduce or make appealing a new idea or behaviour such as motivating people to visit a clinic or seek out their community health worker. Interpersonal communication can reinforce the message people have received through the mass media, provide an opportunity for them to ask questions and receive more information. In family planning, for example, interpersonal communication can also play a crucial role in determining whether or not clients use methods correctly or return for further supplies or advice.

Individual channels of communication (for example, face-to-face encounters) offer personal support and may invoke trust, but are labour intensive, have limited reach, and may require ancillary materials. Mass media channels transmit information rapidly and to the general or specific audiences. Mass media can set agendas, but questions have been raised concerning their impartiality and integrity. Community channels (for example coalitions, community action groups, and the like), have less "reach" than mass media, but they reinforce, expand, and localize media messages and offer institutional and social support. Knowledge of the complementary strengths of various channels helps to optimize penetration and effectiveness of health messages.

Mass media have been major sources of information about HIV/AIDS and other sexually transmitted infections (*Information Education Communication (IEC) reference manual for Health Programme Managers, 1998, p.5*).

The term communication was used in this research as a means of sharing ideas, knowledge and exchanging information about the prospects of childbearing in the advent of HIV and AIDS. Communication was used as a means of actively involving people in the whole process through focus group discussions by way of providing information to shape this research as well as helping them to understand a new way of doing or thinking about childbearing in the advent of HIV and AIDS through participative learning.

3.2.5. HIV and AIDS

HIV is an abbreviation for Human Immunodeficiency Virus. It is a virus that gradually attacks the immune system progressively damaging the body cells. It kills or damages the body's immune system cells. AIDS stands for acquired immunodeficiency syndrome. It is the most advanced stage of infection with HIV (http://www.medical-library.net/hiv_aids.html, accessed on 18/11/2013)

HIV most often spreads through unprotected sex with an infected person. It may also spread by sharing drug needles or through contact with the blood of an infected person. Women can give it to their babies during pregnancy or childbirth

(<http://www.123helpme.com/search.asp?text=human+immunodeficiency+virus>, Viewed on 18/11/2012)

The first signs of HIV infection may be swollen glands and flu-like symptoms. These may come and go a month or two after infection. Severe symptoms may not appear until months or years later. There is no cure, but there are many medicines to fight both HIV infection and the infections and cancers that come with it. People can live with the disease for many years

(<http://www.123helpme.com/search.asp?text=human+immunodeficiency+virus>, Viewed on 18/11/2012)

HIV is transmitted primarily via unprotected sexual intercourse (including anal and even oral sex), contaminated blood transfusions and hypodermic needles, and from mother to child during pregnancy, delivery, or breastfeeding. Some bodily fluids, such as saliva and tears, do not transmit HIV (Markowitz et al., 2007, p. 745).

AIDS is an abbreviation for Acquired Immune Deficiency Syndrome. This is a disease caused by a virus called HIV (Human Immunodeficiency Virus) that alters the immune system, making people much more vulnerable to infections and diseases

(<http://www.microbexpert.com/virus.html>, Viewed on 18/11/2012).

HIV and AIDS is a disease of the human immune system caused by the human immunodeficiency virus (HIV) (Sepkowitz 2001, p 72). During the initial infection a person may experience a brief period of influenza-like illness. This is typically followed by a prolonged period without symptoms. As the illness progresses it interferes more and more with the immune system, making people much more likely to get infections, including opportunistic infections, and tumors that do not usually affect people with working immune systems.

Since its discovery, AIDS has caused nearly 30 million deaths (as of 2009). As of 2010, approximately 34 million people have contracted HIV globally (UNAIDS 2011, pp 1–10). AIDS is considered a pandemic, a disease outbreak which is present over a large area and is actively spreading (*Kallings* 2008, p. 218).

HIV and AIDS has had a great impact on society, both as an illness and as a source of discrimination. The disease also has significant economic impacts. There are many misconceptions about HIV and AIDS such as the belief that it can be transmitted by casual non-sexual contact. The disease has also become subject to many controversies involving religion.

HIV and AIDS was used in this research to describe how the HIV virus and the AIDS disease had affected people's intentions to have children. HIV and AIDS was also used to explain how the virus had altered people's future childbearing intentions as they had seen through experience how one's health can deteriorate should they bear children.

3.2.6. Diffusion

Diffusion: this is the process that transfers energy from an area where it is highly concentrated to an area where there is less concentration. Diffusion is the process by which an innovation is communicated through certain channels over time among the members of a social system

(http://www.spe.org/jpt/print/archives/1998/03/98March_FracStimulation.pdf, viewed on 19/11/2012).

Diffusion of an innovation occurs through a five-step process. This process is a type of decision-making. It occurs through a series of communication channels over a period of time among the members of a similar social system. Ryan and Gross first indicated the identification of adoption as a process in 1943. Rogers categorizes the five stages (steps) as: awareness, interest, evaluation, trial, and adoption. An individual might reject an innovation at any time during or after the adoption process. In later editions of the Diffusion of Innovations Rogers changes the terminology of the five stages to: knowledge, persuasion, decision, implementation, and confirmation (Rogers 1962, p. 79).

Diffusion was used in this research to determine how people research information about PMTCT and what effect it had on determining whether or not they consider having children. It was also used to access what channels were being used to disseminate information and how receptive people were to the information they were receiving on PMTCT.

3.2.7. Knowledge - gap

Knowledge – gap states that as the infusion of mass media information into a social system increases, segments of the population with higher socio-economic status tend to acquire this information at a faster rate than the lower status segments so that the gap in knowledge between these two groups is reduced. Knowledge – gap is a way of looking at what knowledge resources a company, or individual, has in place. Current knowledge is compared to the target level and a plan is developed to attain that level (*Tichenor et al., "Mass media flow and differential growth in knowledge". Public Opinion Quarterly 34 (2), pp. 159–170*).

Knowledge gap explains that knowledge, like other forms of wealth, is often differentially distributed throughout a social system. Specifically, the hypothesis predicts that “as the infusion of mass media information into a social system increases, higher socioeconomic status segments tend to acquire this information faster than lower socioeconomic-status population segments so that the gap in knowledge between the two tends to increase rather than decrease (*Tichenor et al., "Mass media flow and differential growth in knowledge". Public Opinion Quarterly 34 (2), pp. 159–170*).

Health knowledge is differentially distributed in the population, resulting in knowledge gaps. Unfortunately, mass media are insufficient for distributing information in an unrestricted fashion. Changes in social structure and institutions are also necessary for this to occur. Thus, the impact of mass media on audience knowledge gaps is influenced by such factors as the extent to which the content is appealing, the degree to which information channels are accessible and desirable, and the amount of social conflict and diversity there is in a community. Hence, public health media campaigns are more effective when structural factors that hinder the distribution of knowledge are addressed (*Tichenor et al., "Mass media flow and differential growth in knowledge". Public Opinion Quarterly 34 (2), pp. 159–170*).

3.2.8. Prevention of Mother to Child Transmission (PMTCT)

HIV can be transmitted from mother to child during pregnancy, during delivery, or through breast milk. This is the third most common way in which HIV is transmitted globally (Markowitz et al., 2007, p. 745). In the absence of treatment, the risk of transmission before or during birth is around 20% and in those who also breastfeed 35%. As of 2010, vertical transmission accounted for about 90% of cases of HIV in children (Coutsoudis et al., 2010, p. 163). With appropriate treatment, the risk of mother-to-child infection can be reduced to about 1%. Preventive treatment involves the mother taking antiretroviral during pregnancy and delivery, an elective caesarean section, avoiding breastfeeding, and administering antiretroviral drugs to the newborn (Thorne et al., 2007, pp.174–181). Many of these measures are however not available in the developing world. If blood contaminates food during pre-chewing, it may pose a risk of transmission.

Prevention of Mother to Child Transmission (PMTCT) is a plan that recognizes the need to consider different ways of preventing Mother to Child Transmission (MTCT), and to integrate HIV interventions into other family planning, maternal health and child health services. It is a programme that aims at reducing the risk of transmission of HIV, the virus that causes AIDS, from a mother to her unborn baby during pregnancy, birth or breastfeeding.

3.3. THEORIES OF HEALTH BEHAVIOURS

3.3.1. Diffusion of Innovations theory

The Diffusion of innovation is one theory that has been used to explain the way in which new ideas are spread. Messages about an innovation that is, an idea, practice or product that is being introduced for the first time, for example, the use of PMTCT strategies to prevent transmission of the virus from an infected mother to their child either during pregnancy or after birth and how these strategies are diffused or spread to an audience using various communication channels.

Whether or not people take up or adopt a new idea, product or behaviour, depends on the characteristics of the innovation itself and of the audience being targeted (Brancheau and Wetherbe, 1990, pp.115-143).

Ryan and Gross (1943, pp. 15-24) proposed this theory which traces the process by which a new idea or practice is communicated through certain channels over time among members of a social system. It asserts that people adopt new behaviours when they are convinced by an idea suggested to them by other members whom they trust. 'When beneficial prevention beliefs are instilled and widely held within one's immediate network, an individual's behaviour is more likely to be consistent with the perceived social norms.' It explains the process of how a new idea is disseminated throughout communities or institutions. The theory is based on four components; the innovation, its communication, the social system and time. Positive sexual behaviours are more likely to be created and integrated into the social norms. Opinion leaders exert influence on audience behaviour via their personal contact, but additional intermediaries called change agents and gatekeepers are also included in the process of diffusion. Five adopter categories are:

(1) innovators, (2) early adopters, (3) early majority, (4) late majority, and (5) laggards. This theory is also significant in health communication especially in HIV and AIDS prevention because it highlights the process of adoption of new ideas despite inconvenience, for instance, the use of condoms for prevention of sexually transmitted diseases.

Relevance

The importance of the Diffusion of Innovation theory to the research is to show how communication for social change recognizes the need for community ownership, that is, the importance of horizontal communication rather than top down, vertically transmitted messages and the importance of seeing people as agents of change rather than as objects of change. The theory brings out in this research the values of dialogue and debate over and above persuasion and aims to support behaviour and change by addressing the social norms, cultural practices, and policies that may constrain health enabling practices.

Since one of the main purposes of this research is to assess how health education has helped to change attitudes and perceptions on childbearing following the advent of HIV and AIDS in Kasama district, it is important to understand the way in which new ideas are spread and the factors which affect the way people help health planners and managers to design more effective health IEC activities.

The theory also seeks to explain how community leaders in central and Newtown influence people's choices in adopting an innovation. Community opinion leaders scan the media for information, then communicate that information to others in interpersonal contexts such as church gathering and community meetings. It is in this second step, interpersonal interaction that opinion leaders exercise enormous power, influencing others not only by what they choose to reveal but also the slant that they use in conveying the message.

However, despite all the efforts made to ensure that information reaches everyone, there still remains some gaps with regard to the channels used in information dissemination as some people still lag behind in adopting certain innovations such as PMTCT services that would otherwise alter childbearing intentions to people living with HIV and AIDS. Hence, the Knowledge gap theory attempts to explain how information gaps that could otherwise be found in the Diffusion of Innovation theory could be reduced or eliminated so as to ensure that everyone is well informed for them to make the right decision with regard to childbearing in the advent of HIV and AIDS.

3.3.2. Knowledge Gap Theory

This theory introduces a useful concept, perceived susceptibility, which can provide useful insights into the gap between HIV and AIDS awareness and adoption of safe sex practices.

While knowledge about HIV may be adequate, people usually do not feel motivated to modify their behaviour unless they sense they are personally at risk of infection. The central role of perceived susceptibility in behavioural change has been highlighted in recent research (Sheppard et al., 2001, pp. 29-31).

The knowledge gap hypothesis holds that when new information enters a social system via a mass media campaign, it is likely to exacerbate underlying inequalities in previously held information. Specifically, while people from all strata may learn new information as a result of a mass media campaign, those with higher levels of education are likely to learn more than those with low levels of education, and the informational gap between the two groups will expand. The results of the analysis show that knowledge gaps do not always grow over the course of presidential campaigns and that some events, such as debates, may actually reduce the level of information inequality in the electorate.

Relevance

The relevance of this theory to this research is that it helps bring to light the number of programmes that make use of locally developed information, education and communication(IEC) materials to raise awareness in the wider community about PMTCT and available services. Areas of misconceptions about HIV and AIDS, and PMTCT need to be identified so that local health authorities such as those in Kasama district can design and target appropriate messages to fill gaps in knowledge.

CHAPTER FOUR

LITERATURE REVIEW

4.1 Introduction

This chapter presents the literature relating to the ambiguity in changes of childbearing desires that accompany knowledge of one's HIV positive condition and the need to address issues surrounding reproductive and sexual rights in relation to childbearing and pregnancy in the advent of antiretroviral therapy (ART) (Claire 2003, p 322).

The chapter further seeks to bring together the many relevant disciplinary and technical perspectives to identify gaps in knowledge and create comprehensive solutions..

4.2. Impact of HIV and AIDS on fertility

In developing countries, especially in sub-Saharan Africa, mortality rates have increased rapidly because of the expansion of the HIV and AIDS epidemic thereby causing a short life expectancy in those countries. It seems that AIDS will reduce the population growth rate in Eastern Africa by increasing mortality rates. This is because HIV and AIDS has an impact on the reproductive decision of infected women and men thereby affecting fertility ("BBC News – Population seven billion: UN sets out challenges". BBC 2011, pp.11-30).

HIV epidemics have become a significant influence on fertility and has badly affected areas of sub-Saharan Africa. Population based survey in south western Uganda and analyses of data from antenatal clinics in a number of other countries shows that 25-40 percent of lower fertility in women with HIV, while some of this sub fertility prior disposition to other sexually transmitted infections (STIs) among HIV incident cases, about half result directly from the infection itself. The relationship between HIV and fertility rates are associated with demographic factors, such as HIV slowdown the population growth by increasing mortality (Gregson et al., 1999,p.104).

According to Fylkesnes et al., (1998,pp. 227-234) there has been an estimate of 25-40% loss in fertility among infected women and a reduction of approximately 0.4% in the total fertility rate with each percentage point increase in female HIV prevalence figures. In addition, they found that the fertility of HIV positive women varies with age: young HIV positive women do not seem

to experience any loss in fertility and the reduction in cumulated fertility becomes more severe as women age.

While the studies of differences in fertility between those who are aware of their HIV positive status and known to be so by the analyst versus those who are HIV negative provide an important background, it is particularly important to explore fertility and HIV and AIDS in contexts where HIV status is not known to the researcher and is unlikely to be known to the respondent, the typical situation in sub-Saharan Africa. In these contexts, although they may not know this with certainty, most individuals are HIV negative and thus remain exposed to the risk of contracting the virus, therefore, potentially experiencing some degree of worry associated with this risk.

Many researchers found evidence that HIV positive women reduce fertility by about 40 percent in most African countries. Productiveness is decreased by HIV infection because of discouraging still birth and high rate of co-infection with other sexually transmitted infection, which may cause secondary infertility (Juhn et al., 2008, p.9). At present, the effect of HIV and AIDS on fertility among those persons infected with HIV is far better understood, and with more precision, than the corresponding effect for uninfected persons. Zaba and Gregson (1998, pp.41-50) synthesize evidence from six African studies conducted in the early and mid 1990s: three in Uganda, two in Zambia, and one in Tanzania. From these studies, one can conclude that the overall fertility of HIV positive women is 25 %, 40 % lower than that of HIV negative women.

The consensus in the research literature is that HIV positive status does not lead to behavioural changes that would have any noticeable impact, negative or positive, on fertility. In Africa, most HIV positive individuals are unaware of their status until the infection expresses itself in overt physical uncertainty such as weakness, weight loss, and opportunistic infections and even then some may remain. Women often learn of their HIV positive status through an antenatal check-up, that is after they have already added a pregnancy (Setel, 1995, pp.179-189)

According to Rutenberg et al., (2000, pp. 124-130), Adherence to the social obligations and rewards of reproduction has also been observed in studies conducted in Kenya. Similar themes surface in qualitative interviews in Zambia in which the respondents were uninformed about their HIV status, but given the relatively high HIV prevalence, hypothetical questions about

reactions to acquiring HIV/AIDS has a powerful relevance. There is also scattered evidence of the view that it would be prudent for HIV positive individuals to produce more children to ensure that some survive (Temmerman et al., 1994 pp. 104-105) and perhaps produce them more quickly, but these positive effects on fertility desires appear to be the exception rather than the norm.

A more common finding in recent studies is the emergence of doubts about continuing reproduction after HIV infection is confirmed. These doubts are fuelled by three distinct concerns (Rutenberg 2000, pp. 124-130). The first is that further pregnancies will exacerbate the disease “bring out” the HIV infection, as respondents say in Zambia. A second concern is that the infection may be transmitted to the prospective child, increasing the risk of death and the attendant emotional cost, burial expenses, and so forth. A third concern is for the welfare of existing children school fees, housing, fostering arrangements, and so forth (Setel 1995, pp.179-189). A focus on investment in these children, with the looming threat of the mother’s premature death, becomes an argument against continued childbearing. In survey data collected in Zimbabwe, 83 % of HIV positive and HIV negative respondents, most unaware of their status, indicate that HIV-positive women should cease childbearing because of the risk of vertical transmission to the prospective child and of adding to the number of future orphans (Gregson et al., 1997, pp. 89-112). Similar views that HIV positive persons should bear no further children were expressed by some of the respondents in qualitative interviews in Cote d’Ivoire and Zambia (Aka-Dago-Akribi et al., 1999, pp. 20-29).

It is very difficult to design empirical studies that yield valid estimates of the independent effect of the HIV and AIDS pandemic on the fertility of the HIV negative population. Many other forces can be simultaneously acting to decrease, or increase, levels of fertility and each of its proximate determinants. More than a decade ago, Caldwell et al., (1989, pp.185-234) speculated that HIV/AIDS might contribute significantly to the transformation of reproductive regimes in Africa, which indeed might be the key catalytic force in the onset of fertility transition in many countries in the region. In fact, there is little in the way of rigorous empirical research from which one might determine whether Caldwell’s early optimism or more recent pessimism is closer to the truth.

Gregson (1994, pp.650-679) suggests that the greatest analytical leverage on this problem will be obtained by thorough exploration of individual intentions and motivations through in-depth KABP (Knowledge, Attitudes, Beliefs, Practices) studies and ethnographic studies. In making this recommendation, Gregson, by implication concedes the impossibility that rigorous qualitative research might partial out the independent effect of HIV/AIDS on fertility change.

The major conclusion is that fertility desires are driven by social and economic considerations that are surprisingly robust in the face of the AIDS pandemic. Setel (1995, pp.179-189) reviewing research from central and eastern Africa, concludes that reproductive responses are not based primarily on personal assessment of HIV risk to self, partner or child. Rather, the main factor is the continued importance of reproduction for both women and men in marginal socio-economic circumstances. Setel also concludes that in formulating their fertility desires, individuals feel compelled to respect the existing structure of reproductive decision-making power along the dimensions of generation and gender.

In a similar vein, Aka-Dago-Akribi (1999, pp.20-29) conclude from in-depth interviews in Cote d'Ivoire that for most individuals, health considerations are secondary to the meeting of social and familial obligations. With these fundamental factors underlying fertility desires, there is limited scope for concerns about HIV/AIDS to exercise any influence. For instance, Rutenberg et al.,(2000,pp.124-130) report that respondents in qualitative interviews in Zambia are perplexed by the question of how HIV/AIDS might change views about childbearing; they find it difficult to comprehend the logic of awareness of HIV/AIDS changing reproductive goals, except for the minority of individuals who know themselves to be HIV-positive.

Some effects of HIV/AIDS on fertility desires are nevertheless evident. Even within the existing reproductive calculus, the surge in the number of orphans in the highest prevalence areas of Eastern and Southern Africa is causing some individuals to re-think their personal childbearing as their responsibility of caring for other children is forced on themselves or on neighbours (Rutenberg et al., 2000,pp.124-130). There is one line of thinking revealed by the Zambian in-depth interviews that does constitute a casual effect of concern about HIV/AIDS on fertility desires. Survey data from rural Zimbabwe provide some quantitative support for a conscious reduction in fertility desires in response to the AIDS pandemic (Gregson et al., 1997, pp.89-112).

Allen et al.,(1993, pp.705-710) in a study done in Rwanda argued that the fertility of HIV positive women varies with age: young HIV positive women do not seem to experience any loss in fertility and the reduction in cumulated fertility becomes more severe as women age. An interesting aspect of the findings points to the primary role of fetal losses through miscarriages, spontaneous abortions and stillbirths resulting from infection with HIV and co-infection with other sexually transmitted diseases.

With respect strictly to behaviour, Gregson et al., (1997, pp. 89-112) state that the desire for children may fall because of women's fears (whether they are knowingly HIV positive or not) of passing on the virus to their children, of not being alive to care for their children, or of their children contracting the disease themselves and dying. Reduction in fertility could also occur as a side effect of prevention behaviour, via reductions in unprotected sexual intercourse or increases in age at sexual debut.

According to the ZDHS 2007, the fertility in Zambia has remained high over the last 15 years with the total fertility rate being 6.5 births per woman in 1992 and 6.2 births per woman in 2007. The report suggests that fertility differentials by education and wealth are noticeable. On average, women who had no formal education and women in the lowest wealth quintile were having more than 8 children, while women with higher than a secondary education and women in the highest wealth quintile were having less than 4 children (Collins T and Mwanza P, 2012, p.27).

4.3. Impacts of HIV and AIDS on Childbearing intentions

The desire for children takes many forms, including how many, when, how, with whom, that vary greatly from one context to another. This is independent of whether a woman is HIV positive or not, but when a woman knows her status, the knowledge of being HIV positive does appear to have an impact on desires and decisions about pregnancy (Birungi et al., 2009, pp.184-187). The now emerging body of literature exploring the childbearing effects of the HIV and AIDS epidemic has most commonly been summarized according to the basic distinctions in interactive pathways such as: effects of the epidemic at the individual biological behavioural and compositional level (Claire 2003, p. 322).

It is important to know that overall, there is little empirical evidence on the impact of heightened mortality from AIDS on childbearing in sub-Saharan Africa. In fact, demographic modelers of the impact of the HIV and AIDS epidemic have too commonly assumed no childbearing response to HIV and AIDS.

The bulk of the research on the childbearing-related behavioural effects of HIV infection reflects the basic fact that in sub-Saharan Africa, most who do become aware of their HIV positive status will do so late in the progression of AIDS symptoms. They are thus not likely to remain long enough to significantly alter their childbearing –related behaviour. Heyward et al., (1993, pp.1633-1637) go on to support the hypothesis that childbearing-related behaviour of HIV infected individuals does not depend on their knowledge of being HIV positive.

The study by Aka-Dago-Akribi et al., (1999, p.20) is partially a representative of a small set of studies highlighting women's desire to continue childbearing after they are informed of being HIV infected. In this study, pregnancy was thought to symbolize a woman's own health or at least her capacity to bear a healthy child.

Even among HIV discordant couples in which both partners were aware of each other's status, couples chose to have more children, despite the risk of transmission to the uninfected partner and the child, in order to avoid the danger of rejection by the community (Aka-Dago-Akribi et al 1999, p.29).

However, more common are studies which report on the negative or in-existent effects of the HIV/AIDS epidemic on childbearing desires (Gregson et al. 1997, pp.89-112).

Rutenberg (2000, pp.124-130) summarize the main motivations for desiring fewer children as being related to fears that continued reproduction will worsen one's health and that the virus will be transmitted to the child. Additional worries have to do with parents' ability to ensure children's social and material well being once they are no longer able to care for them (Setel 1995, pp.179-189).

Several studies have suggested that even in areas where HIV prevalence is relatively high and individuals perceive a high risk of infection, such as Tanzania, social and economic forces remained the primary motivation for continued childbearing (Setel 1995, p.189)

In Zimbabwe, where HIV prevalence is also relatively high, empirical findings do not support the idea that the HIV/AIDS epidemic has been leading to an acceleration of childbearing. Gregson et al., (1997, pp.89-112) found that close to half of their respondents opted for delaying their next pregnancy because of HIV/AIDS and in order to facilitate the body's recovery from previous childbearing.

It was discovered that the difference in age seemed to moderate the levels of worry that seem to be associated with reductions in childbearing. Women in the 15-24 age range seem to be less subjected to the childbearing depressing effect of increased worry regarding HIV/AIDS than women in the older age categories.

Claire (2003, p. 337) states that there has been speculation that a possible explanation lies in the presence of strong childbearing promoting social norms and personal behaviour among women in their early years of childbearing. It is possible that such fertility enhancing forces might include the desire for children, the socially defining role of motherhood or the inability to resist a partner's desire for children (Acsadi et al., 1990, pp. 155-185)

Turning to the evidence, many African studies, both clinic and cohort based, indicate that total fertility or childbearing odds are lower among HIV positive women. With respect to fertility intentions, in a number of qualitative studies in Africa, women diagnosed with HIV express their intention of curtailing further childbearing, though one study from Cote d'Ivoire points instead to a desire to continue childbearing despite being HIV positive (Aka-Dago-Akribi et al., 1999, pp. 20-29).

In addition to the factors driving the HIV/AIDS epidemic, UNAIDS reports that the sexual behaviour and attitudes of men influence how quickly the epidemic spreads, because it is usually the men who determined when and how often to have sex, and whether a condom is used. Feminist movements were concerned that although women were being blamed for excessive childbearing, anthropological literature showed that the focus of decision making resided in units larger than individual women such as in couples, families and communities ([Http://www.who.int/topics/reproductivehealth/en/](http://www.who.int/topics/reproductivehealth/en/), viewed on 25/01/2013).

Childbearing is another major driver of family formation and building in southern Africa. A decade ago, researchers hypothesized that women and men at high risk of becoming infected

with HIV would seek to increase the pace of childbearing in order to meet their fertility goals. However, empirical data on trends in HIV and fertility has not borne this out. Instead, HIV has been shown to exert a downward pressure on fertility in HIV-infected people, and to a lesser extent on fertility in the general population in high prevalence countries. In HIV-infected people, many factors have been shown to contribute to reduced fertility including: biological effects on the fecundity of HIV-infected women (Floyd S et al., 2008, pp.1–12).

4.4. Peoples' attitudes and perceptions towards childbearing in the advent of HIV and AIDS

Several factors have been found to strongly discourage HIV positive women from childbearing. The most frequently voiced concern of HIV positive respondents' regarding childbearing was the increased health risk associated with pregnancy for HIV infected women. The following factors have been identified to have altered women's perceptions and attitudes to childbearing:

Religious leaders are esteemed, frequently exchange with the public and maintain an influential role in policy-making in Trinidad (<http://www.state.gov/g/drl/rls/irf/2003/24523.htm>, viewed on 19/02/2013). They may use their position to promote HIV/AIDS awareness, fight stigma and discrimination in communities, and exercise compassion to facilitate healing for people living with HIV/AIDS (PWHAs). Some religious groups are involved in such efforts. In 2001, the Caribbean Conference of Churches (CCC), the Regional Ecumenical Organization of the Caribbean, brought 120 church leaders and church workers from across the region together in a consultation on *"Human Sexuality and HIV/AIDS in the Caribbean – A Theological Approach"* (http://www.ccc-caribe.org/eng/releases/faithresponse_0105.htm, viewed on 15/03/2013). The consultation raised awareness about the discrimination, fear, rejection, poverty and pain that PWHAs may face in Trinidad's society.

Yet there are barriers to more active and widespread involvement in HIV/AIDS initiatives among religious groups in Trinidad. Debate over condom sales, for example, has hindered collaboration with public health organizations and religious groups have not been optimally integrated into the HIV/AIDS care and support network

(<http://www.aegis.com/news/ips/2001/IP010628.html>, viewed on 09/03/2013).

Further, there are few local research studies that explore religious leaders' incentives to promote and gain involvement in faith-based HIV/AIDS initiatives. One investigation of the potential to inspire a faith-based response to HIV/AIDS in T&T found that HIV/AIDS-related stigma and discrimination inhibited active involvement. The present research expands upon previous work by sampling both diverse religious groups in Trinidad, and individuals who are living with HIV/AIDS. Accordingly, this study investigates how the perception of HIV/AIDS as a sexually transmitted infection impacts religious leaders' incentives to become involved in HIV/AIDS initiatives, and how the experiences of PWHA in religious gatherings have impacted their healing and coping with HIV/AIDS. (Richards, 2001, Inventory and assessment of religious groups in Trinidad and Tobago and their response to AIDS/HIV)

4.4.1 Attitudes and perceptions towards communication about PMTCT services

HIV treatment and PMTCT programs have documented high rates of unintended pregnancies among HIV positive women. Studies in Rwanda and Zambia have shown that women generally demonstrate a higher knowledge of contraception than men, but gender dynamics may prevent them acting on this knowledge (Ehrhardt, et al., 2009, pp.96-105).

In all settings, a range of factors are known to influence HIV positive women's desire to bear children, including: age, health status, cultural significance of motherhood, number of living children, previous experience of a child's death from HIV-related causes; the availability of HIV treatment and prevention of Mother-to-Child Transmission (PMTCT) programs; the attitude and influence of partners; family and health care workers; and stigma and discrimination on the basis of HIV status especially for women coming from already marginalized populations. Among HIV discordant couples, the desire for pregnancy has been shown to outweigh concerns about horizontal transmission. Van Leeuwen, et al., (2008, pp. 456-458) in a research from Brazil suggests that cultural norms are important, and in some settings HIV positive men may be more likely to want children than HIV positive women.

Segurado and Paiva (2007, pp. 27-45), state that at the time, studies show women may not want to become pregnant for fear of potential HIV infection in their children or the fear that these children may be orphaned. HIV positive women have also expressed concern that once pregnant,

they may be more vulnerable to violence and abandonment by their partners, family and community.

According to a study done by Cooper, et al., (2005, p.1), women feared infecting their partner or their baby and were anxious about leaving either living or future children as orphans. They were concerned about their ability to support their children financially given their illness. Women who had given birth to an infected child expressed mixed feelings about becoming pregnant again. However, these men and women that were on ART in the same study overwhelmingly experienced positive effects on their health and some felt being on ART would alter towards childbearing.

4.4.2. Community attitudes towards sexual activity and childbearing

The specific considerations of women with HIV who are thinking about or desiring pregnancy remains tied to the stigma of discrimination they may encounter from their families, community or health system. Stigma has been shown to operate differently in different contexts: studies in Zimbabwe have demonstrated that women may wish to become pregnant but do not feel safe enough to realize this decision, fearing potential backlash from the community in particular because of potential transmission of HIV to their children (Craft, et al., 1999, pp. 927-935). Fear of abandonment by husband and community was frequently cited as a motivation for avoiding any suspicion of HIV infection (Maman 1999, p. 12)

Given this strong pressure on women to bear children in order to ensure the stability of their marriage, it is hardly surprising that HIV positive respondents who wanted to stop childbearing sometimes found it difficult to get their partner to accept it. HIV positive women face a near impossible task in trying to comply with societal and familial expectations of their conflicting roles as mothers and HIV infected individuals. These expectations are likely to be particularly problematic for women who are diagnosed before they have had any children, when pressure to prove they are not barren is likely to be at its highest. (Keogh et al., 2000, pp. 27-35)

Childlessness is usually portrayed as a disease, equated to barrenness and infertility, and it was rarely suggested that it might be a choice. In fact, the idea that it might be choice induced even

more disdain, due to a widespread association of voluntary childlessness: achieved through contraception or abortion, with prostitution and promiscuity. Childbearing is associated with a respect of family values and motherhood and constituted a validation of marriage (Moyo and Mbizvo, 2004, pp. 9-15).

It has been observed that there is a downward adjustment in childbearing desires after diagnosis in spite of strong societal pressure to continue childbearing. This pressure is likely to be particularly strong for low parity women. In contrast, for women who already had several children, economic worries, health concerns, and the uncertain plight of existing children, prevailed over the desire to conform to societal norms. HIV infection remained at the forefront of their childbearing considerations, and this was true regardless of whether they were on ART, of their health status, and of their marital status. Given men's high childbearing desires, it was not easy for women in relationships to convince their partner that they should stop childbearing and some women resorted to Family Planning (FP) secretly especially if they had not disclosed their status (Smith and Mbakwem 2007, pp. 37-41).

Spousal, family, community and cultural influences greatly shape HIV positive women's desire to become pregnant. Studies in India, South Africa, Taiwan and Vietnam have demonstrated the weight of culture-specific spousal and family wishes that a woman will need to consider in addition to her own desires and HIV status. Some women may also take economic factors into account, viewing children as a future resource, for example, or as a means of maintaining a relationship that provides financial security (Ujiji et al., 2010, p. 10).

4.4.3. Attitudes towards contraceptive use and family planning

Okonofua (2004, pp.7-12) states that HIV is now recognized as a key factor to be taken into account in reproductive health policies in Sub Saharan Africa. Childbearing and contraceptive has received increasing attention from researchers and policy-makers in Africa and the international community.

According to Noel-Miller (2003, pp. 320-327), HIV positive respondents are significantly more likely to have used family planning (FP) in the past. She states that the association of HIV status with past FP use may be confounded by frequency of sexual activity, making highly sexually active women more likely both to have used Family Planning and to have acquired HIV. Women in unstable partnerships are often at higher risk of HIV infection and are more likely to use FP to avoid pregnancy by that particular man. She states that HIV positive respondents are also slightly more likely to want to stop childbearing than their negative counterparts, although this was only borderline significant at the 95% confidence level. This suggests some HIV- positive women who may be suspecting they are infected alter their childbearing intentions in response.

Bussmann (2007, p.269) states that the slightly lower pregnancy rates observed in HIV positive respondents may also be partly a result of infertility due to HIV infection, as well as their reported longer postpartum abstinence. Delayed resumption of sexual activity may be a conscious strategy to reduce the risk of HIV and STI transmission, but it may be a consequence of HIV infected women's partners being disproportionately absent, or of reduced desire or ability to have sex activity, pregnancy rates will likely arise. This is particularly relevant in the context of expanded ART access, as women may increase their sexual activity once they feel healthier on ART, as found in studies and their effect of antiretroviral on counteracting HIV-induced sub fecundity could lead to more unwanted pregnancies, especially if women were used to having difficulty getting pregnant. This highlights the need for a continuum of FP counselling will likely become increasingly important for HIV-positive women as time goes on, as they develop a higher demand for FP to meet their greater need for limiting births (Marcelli et al., 2010, pp. 441-451).

In the light of the numerous other factors that HIV positive women have to consider, it is imperative that antenatal HIV counselling and any subsequent FP counselling be person-centered and reproductive rights-bases to take into account each woman's individual circumstances with regard to her marital status, status disclosure, FP attitudes, and wider societal expectations.

According to Ko and Muecke, (2006, pp.82-86), studies have shown that if counsellors display negative attitudes towards HIV positive women childbearing and being sexually active, this may

alienate women who want another child, as well as women who want to use FP to avoid pregnancy, potentially resulting in unwanted pregnancy and unnecessary risk-taking. A woman's ability and willingness to discuss her pregnancy plans with her healthcare provider is pivotal to enabling her to access the services she requires (Nduna and Farlane, 2009, pp. 62-65).

With the exception of studies by Rutenberg et al., (2000, pp. 124-130), there are few rigorous empirical investigations - qualitative or quantitative- of the extent to which awareness of HIV and AIDS can also motivate contraceptive use for pregnancy prevention, that is, declines in fertility demand that are a response to the various social, economic, and health repercussions of the AIDS pandemic.

Biological mechanisms are thought to account for most of the fertility effect of HIV/AIDS on already infected individual. In a review of the evidence for the fertility impact of the epidemic in Uganda, Zambia and Tanzania, Zaba and Gregson (1998, pp.41-50) conclude that in non-contraception populations, the fertility of HIV-infected women is substantially lower than that of HIV –negative women.

Amouzou and Becker during an International Conference on Family Planning 2009, created an index that measures family planning ideation, defined as the sum of a person's knowledge of family planning, exposure to the concept of family planning, and whether she has been visited regularly by family planning health workers regularly at home. The study showed that the greater a woman's family planning ideation, the greater her desire to stop childbearing.

“This happens regardless of economic status,” says Amouzou. “Family planning ideation is a powerful generator of family planning demand” (International Conference on Family Planning 2009, ‘The Impact of Wealth and Knowledge on Family Planning’).

4.5. Impact of HIV diagnosis on childbearing intentions after testing

Moyo and Mbizvo (2004, pp. 9-15) in a study done in Zimbabwe found that the strongest effect of HIV diagnosis on reproduction behaviour in the postpartum period was on childbearing. It was discovered that HIV diagnosis also had a significant effect on the desire for another child. HIV-positive women had half the odds of wanting another child compared to HIV-negative

women. HIV diagnosis appears to decrease childbearing intentions both by encouraging women who wanted to stop childbearing to stick to their intentions, whereas HIV negative women were very likely to decide they wanted another child by follow up and by encouraging women who wanted another child before testing from having one.

With the advent of antiretroviral therapy (ART) and heightened global support of HIV/AIDS treatment, HIV positive women are living healthier and longer lives. While research, programmatic, and policy communities have often taken as their point of departure that HIV-positive women do not wish to or should not become pregnant, HIV positive women have long advocated for recognition and fulfillment to their sexual and reproductive rights, including the ability to decide if and when to have children.

Hoffman et al. (2008, pp. 477-483) state that lower childbearing desires following HIV diagnosis have been found in other African studies. However, findings from other studies have suggested that HIV diagnosis leads women to accelerate their pace of childbearing in the short term in a bid to reach an acceptable family size while they are still healthy, despite lower long-term desires (Heys et al., 2009, pp. 37-45).

In contrast, the HIV diagnosis did not affect short-term childbearing desires for HIV positive women, and did not cause acceleration in the pace of childbearing. Indeed, repeat pregnancy rates were slightly lower in HIV positive women, and contraceptive use was slightly higher.

HIV infected women diagnosed during pregnancy may not be so “desperate to have another child soon after diagnosis compared to the general population, as they may have fulfilled their short term childbearing desires with their recent birth, and they may want to wait longer before their next child to let their body rest. This is plausible given their acute awareness of the health risks involved in an HIV positive pregnancy.

HIV positive women’s desire to bear children may also be affected by testing protocols, communication of test results and health care worker attitudes. In Vietnam, for example, if test results are delivered via a community notification system, it was observed that women may fear

violation of their privacy rights and therefore be less likely to seek or receive adequate HIV counselling (Oosterhoft et al., 2000, pp. 654-659)

Disclosure of test results may be another important deterrent for women who would otherwise choose to undergo HIV testing to inform their pregnancy intention (Medley et al., 2004, p.299-307). While the effect of antenatal HIV diagnosis on postpartum childbearing intentions is strong, other factors particularly socio-demographic factors such as age and parity, still have a strong effect on childbearing remained influenced for low parity women even after diagnosis. Results of previous studies have highlighted the continuing influence of socio-demographic characteristics and societal attitudes to childbearing and FP, on reproductive behaviour even after positive diagnosis (Nattabi et al., 2009, pp. 949-968).

According to the findings in a study done by Kashesya et al., (2009), some of the challenges faced included: risk of HIV transmission to partner and child, lack of negotiating power for safer sex, failure of health systems to offer safe methods of reproduction (www.ncbi.nlm.nih.gov, viewed on 19/03/2013).

The other profound reasons mentioned in a baseline study done in Kenya at two sites, Kebera and Dagorretti of Nairobi in 2004,, were that an HIV infected women's body would weaken during pregnancy, and that children of HIV infected parents would become orphans. (www.policyproject.com/pubs/.../ImplementingPoliciesandPrograms.pdf, viewed on 20/03/2013)

4.6. Summary of the reviewed literature

While researchers recognize biological effects as being primarily responsible for reduced fertility among HIV infected individuals, there remains some uncertainty regarding possible confounding behavioural effects (Zaba and Gregson 1998, pp. 41-50).

Given the current state of knowledge on the relationship between worry regarding HIV infection and childbearing, it is difficult to associate this with concern for a possible HIV infection. More research is needed in order to explore the channels through which worry affects childbearing and

to establish its direct as well as indirect influences on the underlying proximate determinants of fertility. Among all proximate determinants of fertility, concern regarding future HIV infection is most likely to lead to a lowered frequency of intercourse while individuals attempt to protect themselves against the virus (Claire 2003, p. 337).

CHAPTER 5

PRESENTATION, INTERPRETAION AND DISCUSSION OF RESEARCH FINDINGS

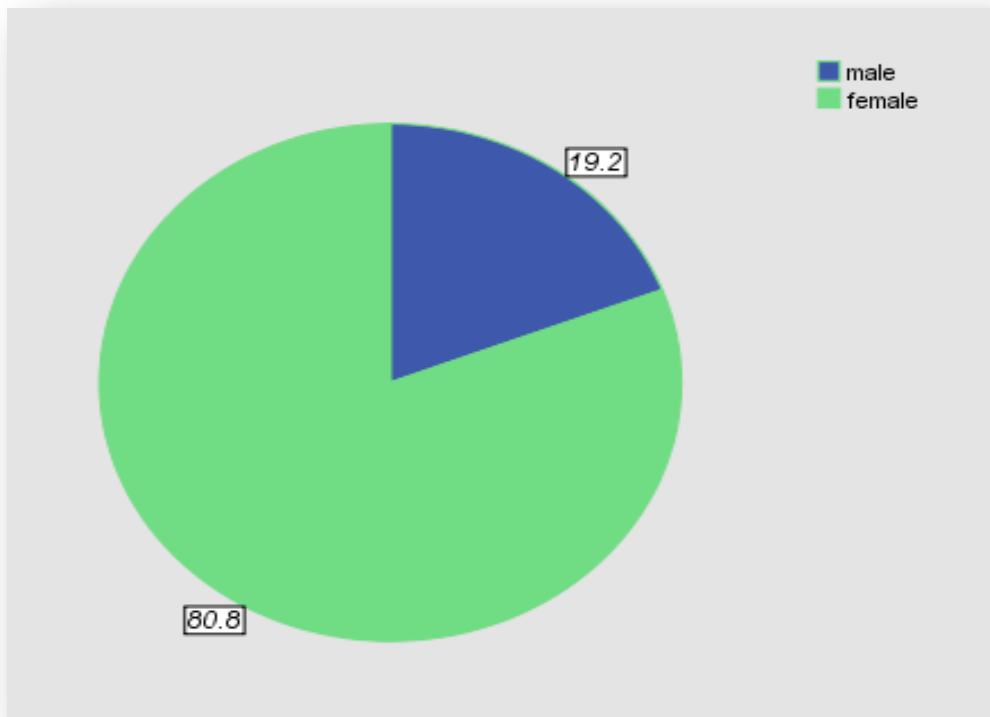
5.1 Introduction

This chapter presents the study findings and describes them according to the study objectives. The first section presents the socio-demographic characteristics of the respondents, the second presents knowledge of respondents about HIV and AIDS, the third section presents the attitudes and perceptions towards childbearing and the fourth section discusses the utilization of PMTCT services.

5.1.1 Social demographic characteristics of Respondents

Some of the Social-demographic characteristics of the respondents that were considered included the gender, age, marital status, educational level and employment status, number of children per respondent and religion of the respondents. These variables influence people's attitudes and perceptions towards childbearing in the age of HIV and AIDS.

Figure 1: Gender of research participants-



The social and demographic characteristics and childbearing desires and intentions of the sample were first described by gender.

Figure 1 shows the gender representation of the respondents in the questionnaire survey. A total of 120 respondents were enrolled into the study through surveyed questionnaires. Of the total 80.8% were women, while 19.2% were men. Since men's health status and behaviour affect women's reproductive health, it was important to involve them in the study as some of the HIV prevention methods used such as male condoms are male controlled, therefore the need to involve men in this domain

According to the "*International, F.C. Male involvement in reproductive health*", involving men gives the opportunity for communication on the issue of equality between men and women. The process of empowering men, regarding reproductive health issues would help them to be more sensitive to women's needs and therefore supportive of participating in efforts to enhance women's status ([Http://www.europrofem.org/contri/2](http://www.europrofem.org/contri/2), viewed on 18/02/2013).

Table 1: Age of Respondents

Age	Frequency	Percentage
14-19 years	20	16.7
20-29 years	33	27.5
30-35 years	18	15.0
36 years and above	49	40.8
Total	120	100.0

Age of respondents was another variable the study considered because it has an influence on childbearing intentions in the advent of HIV and AIDS. The distribution of the age is therefore illustrated in Table 1.

Most of the respondents were found to be 36 years and above (40.8%), then followed by those between 20-29 years age group (27.5%). 20% of the respondents were in the age group of 14-19 years and the least number of respondents showing 15% was from the 30-35 age group.

These findings are in line with the study done by Leridon (2004,pp 1548-1553), in Canada which shows that there is a growing trend towards delayed childbearing with about 11% of first births occurring in women 35 years and above. This trend toward delayed childbearing is also occurring in Western Europe, Australia, New Zealand, and the United States. Many of the reasons why women are choosing to postpone childbearing reflect the availability of safe, effective and reversible contraception, which has allowed women the reproductive autonomy to decide if and when they will have children,

In recent years, advances in ART have challenged the traditional age related boundaries of reproduction which is between 20-35years, enabling even postmenopausal women to conceive and give birth. As women delay childbearing and age at first birth increases, the total number of births to each woman decreases, and the size, composition, and future growth of the population is affected. The postponement of first births has been associated with smaller family sizes and increased childlessness, all of which contribute to the overall decline in fertility as experienced in Canada and other countries including Spain, Sweden, the United Kingdom, and Australia.. (Leridon H.Can 2004.Chapter 19, pp1548-1553)

Figure 2: Marital status of the respondents

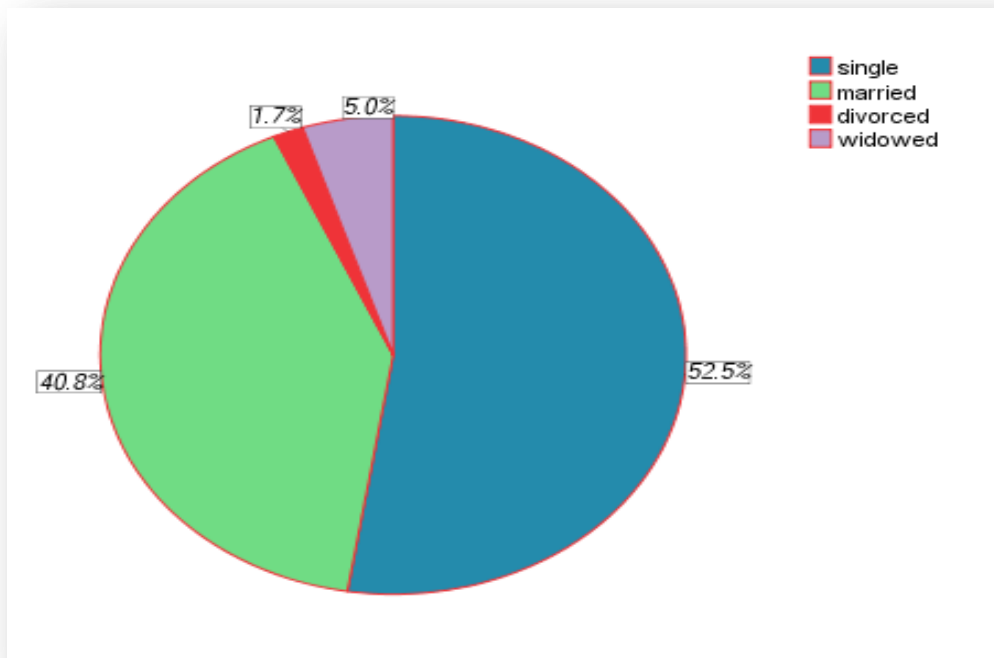


Figure 2 represents figures of the marital status of the respondents. The highest number represents singles who were 52.5%, then followed by married indicating 40.8%. The next category was for the widowed with 5% and the last category was for the divorced representing a total of 1.7%.

In view of the findings in figure 2, the increases in single parent households may be a consequence of widowhood due to AIDS; however, the increase may also result from changes in marriage, divorce and marital fertility patterns, or even labour migration. The framework ensures that much emphasis is placed on union formation and childbearing.

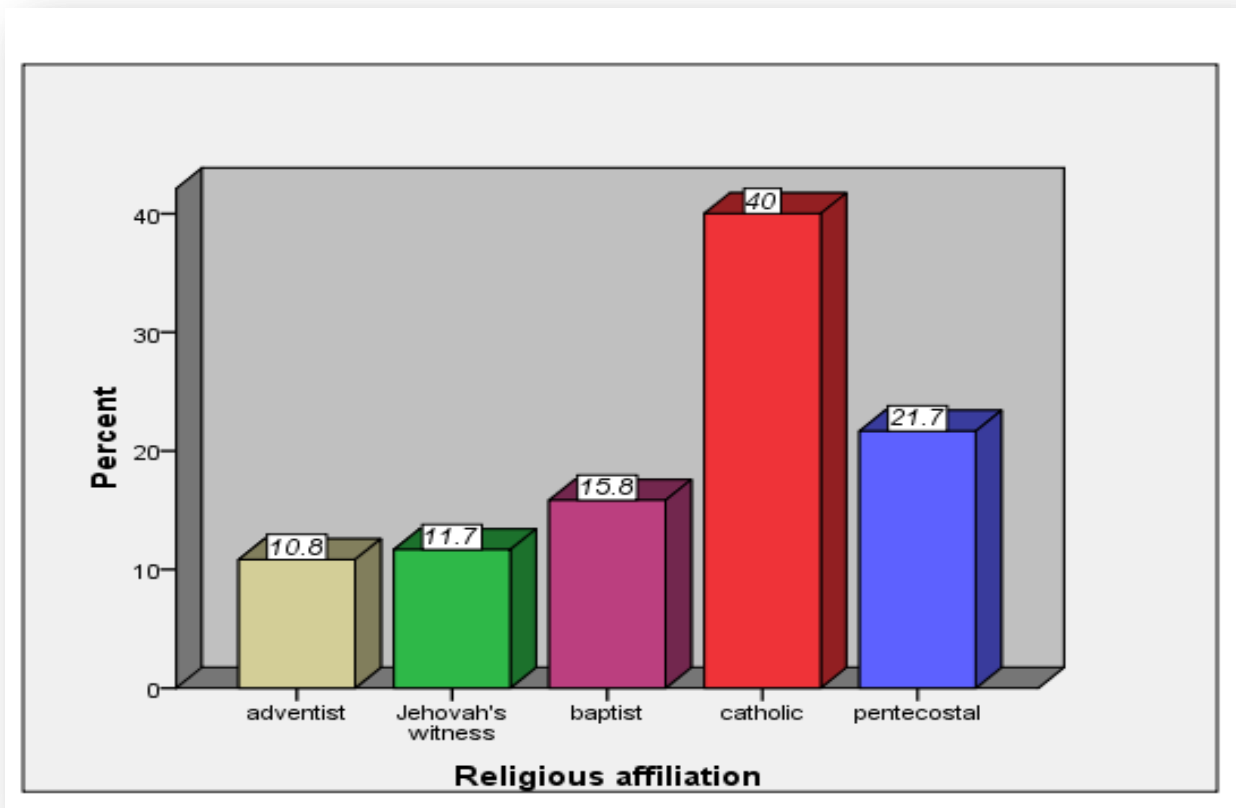
Marital or relationship status also has effects that are less straightforward. Both men and women who are married are less likely to expect one or more children than are non-married individuals with a partner. It is very likely that this finding reflects the effects of other confounding factors, such as age, number of children or partner status (Fertility desires and intentions 2001, pp 144-152 and 165).

In contrast, there is strong evidence that HIV and AIDS increase the risk of union instability, that is, separation and divorce, and widowhood. According to a longitudinal study of married couples done by Floyd et al., (2008, pp. 1–12) in rural Malawi, the proportion of widowhood among partners of HIV-positive men and women was three times than the partners of HIV-negative people. Parental bereavement due to child death also had negative consequences for union stability.

Religious Affiliation of the respondents

Religion as a variable was considered so as to determine its influence on childbearing intentions of the respondents. Chart 1 shows a representation of the respondents according to their religion. Out of the total number, 40% were Catholics, 21.7% were Pentecostals, 15.8% were Baptists, 11.7% were Jehovah's Witnesses, and 10.8% were Adventists.

Chart 1: Illustration of Religious Affiliation of the respondents



Findings however indicate that there is no significant impact between Religion and changing attitudes and perceptions on childbearing in the advent of HIV and AIDS.

Table 2: Number of children per respondent

Number of children	Frequency	Percentage
1-2 Children	26	21.7
3-4 Children	30	25
More than 4 Children	10	8.3
None	54	45
Total	120	100.0

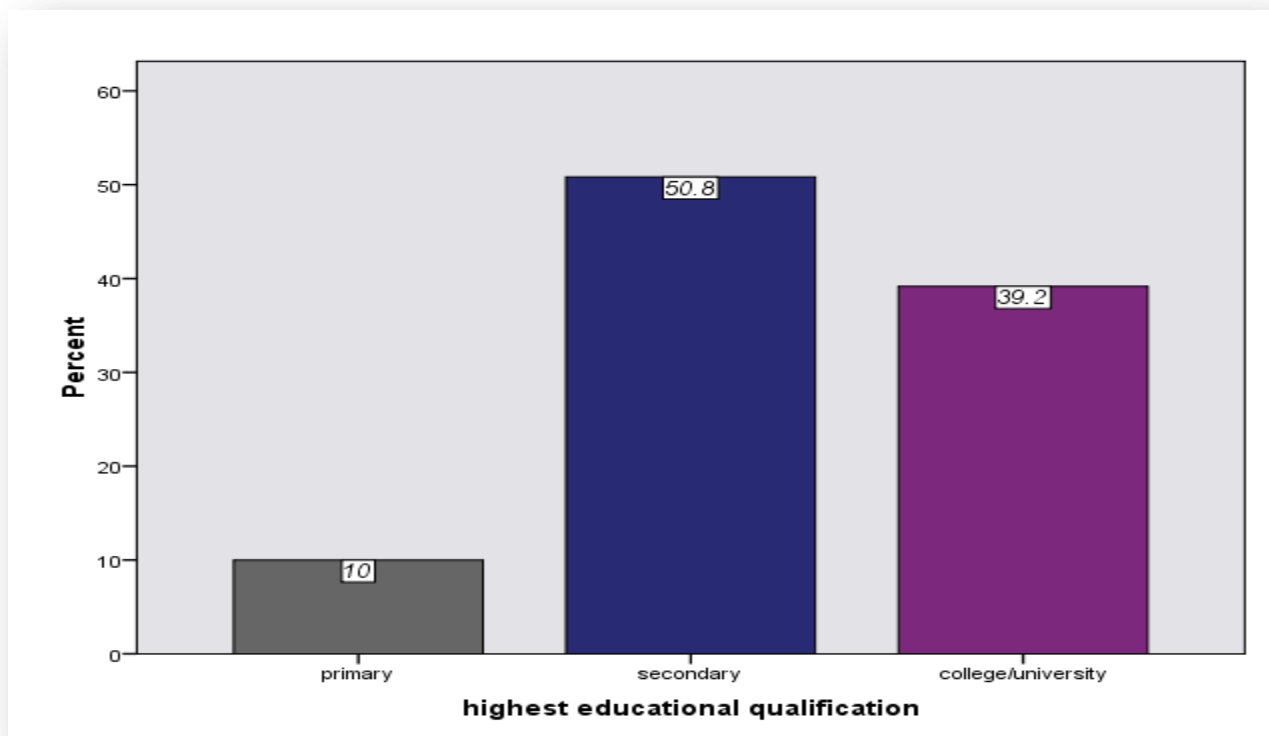
The social demographic characteristics of men and women were also examined according to the number of children they had. 21.7% of the respondents had between 1 to 2 children, 25% of the respondents had between 3 to 4 children and 8.3% indicated that they had more than 4 children. The majority of the respondents 45% indicated that they had no children.

Social demographic factors such as number of children influenced the desire of women to continue with childbearing regardless of their HIV status. As would be expected, these findings are similar to the situation in the general population of Malawi where the desire to end childbearing increased with the number of living children. This suggests that women's value for having children in society is not affected by the fact that one has HIV or because of improved health after ART. A study done by Chimphamba et al., (2004, p.15) looked at social cultural dynamics in HIV positive women's reproductive decisions in Lilongwe, Malawi. They found out the majority of women's social cultural obligations outweighed fears and risks associated with the prospects of deteriorating health, the risk of giving birth to an infected infant and fear of living children orphaned. This is very typical of the traditional African culture to regard high fertility as a logical consequence if a family line was to be maintained in the face of high mortality risks

Similarly, in a study by the Family health options of Kenya, the majority of women expressed the fact that women are socialized to have children as a way of exercising their femininity and they want children to increase the population of Kenya. They felt that the fact that one might not have any or one wants to add to the ones he/she already has was quite normal (Mbeye N M 2007, p.28).

The picture is the same in western countries like the United States. In a study on fertility desires and intentions of HIV positive men and women, it was found that women with at least one child were less likely to desire children as compared to women with no children. This shows that intentions to have children is a cross cultural issue. The most important social event in the lives of people is the birth of their own child (Loudon N 1993, *"Factors Affecting Contraceptive Use in Sub Saharan Africa"*).

Chart 2: Respondents Level of Education



Education was another variable that was considered in the study. According to chart 2 above, all of the survey respondents had acquired some form of education with the majority having acquired secondary education representing 50.8%, 39.2% had acquired college/University education while 10% went as far as primary education.

The findings are in conformity with the study done in Zambia by Collins.T and Mwanza P (2012, p. 56), which alluded to female education being a key variable affecting access to maternal health and family planning services. The study indicated that within the Zambian education sector, there had been marked improvements in school enrolments and a reduction of gender differentials. This improvement was attributed to greater investment in staff recruitment and school construction, and the abolition of primary school fees and an increase in pupil enrolment.

Table 3: Employment status of the Respondents

Employment Status	Frequency	Percentage
Formal employment	39	32.5
Informal employment	41	34.2
Un- employed	40	33.3
Total	120	100.0

According to Table 10, the majority of the respondents were in Informal Employment representing 34.2%. 33.3% were Un-employed with 32.5% being in formal employment. The findings indicate that education status being among them many other factors, affected women's childbearing intentions. This was measured in terms of their desire to have children in fewer than two years, to delay childbirth by two years or more, or to stop childbearing.

In a paper done by Stan Becker (PhD), Agbessi Amouzou (PhD), the findings presented compared the effects of economic status and on fertility intentions. In this study, which surveyed married women who already had children, in Kenya and Ghana, Amouzou and Becker found that economic status was a strong predictor of a woman's desire to stop childbearing: the higher the economic status, the higher her desire to limit or stop childbearing.

Amouzou concluded that in order to achieve a reduction in fertility, discussions about and exposure to the concept of family planning was necessary, especially in poor and rural areas. "If you give people the idea and stimulate discussion with them, you're going to generate the desire to limit childbearing, to delay childbearing, or to space births further apart." International Conference on Family Planning 2009, 'The Impact of Wealth and Knowledge on Family Planning'

5.2. DISCUSSION AND ANALYSIS OF RESEARCH FINDINGS

5.2.1. Knowledge about HIV AND AIDS

Knowledge of women and men about HIV and AIDS was accessed according to their awareness of the effects of HIV and AIDS on both individuals and the community at large. Knowledge was also accessed according to the effects that HIV and AIDS had on childbearing

5.2.1.1. Awareness of HIV and AIDS

According to the findings, all 120 respondents (100%) indicated that they were aware of HIV and AIDS. This is an indication that awareness programmes on HIV and AIDS have been effective. According to the 2009 Sexual Behaviour Survey, Knowledge of HIV and AIDS is universal in Zambia. Almost all (99%) of women and men aged 15-49 had heard of HIV or AIDS, 68% of women and 56% of Men knew that the risk of Mother-to-Child Transmission could be reduced by a mother taking special drugs during pregnancy, 14 % of Zambian adults aged 15-49 are HIV positive (Collins T and Mwanza P, 2012, .P.28).

Table 4: Possibility of HIV positive women giving birth to HIV negative babies

Response	Frequency	Percentage
True	17	14.2
False	100	83.3
Do not know	3	2.5
Total	120	100

Out of 120 respondents, 14% indicated that an HIV positive woman will give birth to an HIV positive baby. 83% of the respondents indicated that it was not always the case that HIV women would give birth to HIV positive babies while 2.5% said they did not know. The findings reveal that most of the respondents were aware of the preventive measures that had been put in place to prevent MTCT hence their desire to bear children regardless of their HIV status since there were now measures that were put in place to reduce transmission of mother to child. These findings

are there consistent with a 2007 Cochrane review on antiretrovirals used to prevent perinatal transmission of HIV found that antiretroviral treatment during the perinatal period (antenatal and peripartum) significantly reduced the risk of vertical transmission in comparison with placebo. For zidovudine, the length of treatment was significantly associated with risk of HIV transmission. Longer treatments during the antenatal period appear to significantly lower infant risk of HIV acquisition. Moreover, for mothers, a short-course of zidovudine and lamivudine during pregnancy, labour, and postpartum along with a single dose of nevirapine during labour was especially effective in reducing perinatal transmission. For infants of HIV-positive mothers who had not received antiretroviral prophylaxis, treatment with a single dose of nevirapine along with one week of zidovudine reduced the risk of HIV acquisition. No significant adverse events were identified for either mothers or their infants after antiretroviral use to prevent perinatal transmission (www.whatworksforwomen.org/chapters/17-Safe.../evidence, viewed on 20/04/2013)

Table 5: Life expectancy of an HIV positive woman after delivery

Response	Frequency	Percentage
True	83	69.2
False	31	25.8
Do not know	6	5.0
Total	120	100

69% of the respondents said it was true that positive women could live for more than 5 years after giving birth without developing AIDS. 26% of the respondents said it was not true and 5% said they did not know. According to a retrospective review of clinical records of 571 HIV-positive pregnant women in antenatal care in Jamaica between 2002 and 2006, it was found that national scale up of HAART improved maternal and infant outcomes. Acceptance of HAART increased: from 2002-2004, HAART was used by 2 to 3% of pregnant women; by 2006, 62% of HIV-positive women accessed HAART during pregnancy. From 2002 to 2005, zidovudine and/or nevirapine were used. For all four years, 24 maternal deaths occurred. Of these, 23 or 96% occurred in those who took zidovudine or nevirapine, with only one death or 4% occurring in those who accessed HAART. By bringing viral load to an undetectable level, HAART has

minimized the “chance of perinatal transmission to fewer than 2% in Kingston and under 5% island wide” (Johnson et al., 2008 p. 221)

5.2.2. Attitudes and Perceptions towards Childbearing

Understanding the attitude and perceptions that people have towards childbearing was one of the purposes /objectives of the study. Attitude and perception were examined in two ways: the attitudes of individual women accessing antenatal care at KUC and the community’s attitudes and perceptions childbearing in the advent of HIV and AIDS.

Table 6: Childbearing intentions by individuals if they were HIV positive

Response	Frequency	Percentage
Yes	81	67.5
No	35	29.2
Do not know	4	3.3
Total	120	100

According to the information in table 6, most of the respondents 68.3% said they would have children even if they were HIV positive. 29% said an HIV infected woman should not have a baby, while 3.3% were undecided hence stating that they did not know. Those who said an HIV positive woman should have a child recommended it because they were aware about PMTCT services and the benefits of attending antenatal clinic regularly. However, findings in a quantitative survey carried out in (2004) at six high volume primary health clinics in kibera and Dagorretti, two urban slums in Nairobi, Kenya, revealed that HIV positive women were significantly more likely than HIV negative women to say that they did not intend to have more children. The overwhelming majority of HIV positive women (82%) reported not intending to have another child (www.policyproject.com/pubs/.../ImplementingPoliciesandPrograms.pdf, viewed on 09/04/2013)

According to the findings from a FGD held at KUC, the women who refused to have children if they were HIV positive said this would shorten their life span since women loose a lot of blood

in the delivery process. The other reason that was given was that preventive measures that had been put in place through PMTCT only reduced the risk and did not eliminate the chances of infection a hundred percent hence not having a baby at all would be the best resolution.

Some of the participants during the discussion said they would have children even if they were HIV positive as childbearing may be a way of coping with a recent loss of a loved one or with the complexities of a life caught up in disease or poverty. Some individuals said that pregnancy was seen as a time of high self-esteem and motivation to live a "normal" life. These motivations and the threat of childlessness were feared to become more compelling as the HIV virus advanced. This perhaps explained why women who knew they were HIV positive had a greater desire for children. One participant during a Focus Group Discussion had this to say:

I am yet to get married and if I found out that I was HIV positive, I would still go ahead and have a kid or two because that would be the only way to create a lasting bond between me and my husband. Otherwise, what is the point of getting married if not to bear children?
(Female participant)

Findings reveal that HIV positive individuals who desired children were younger, had fewer children and reported higher ratings of their physical functioning or overall health than their counterparts who did not desire children, yet their desire for future childbearing was not related to measures of HIV progression. HIV positive individuals who expected children were generally younger and less likely to be married than those who did not.

Given the recent advances in treatment and fertility desires, childbearing intentions of positive men and women were more likely to be enhanced in the future as opposed to peoples' hopes of bearing children in 1996 and early 1997, when active antiretroviral therapy had only become widely available.

The findings in table 6 are consistent with the conclusion that being infected with HIV discourages but does not come close to eliminating individuals' desires and intentions to have children. Some of the factors other than a woman's HIV positive status that presumably account

for the discouraging effect of HIV infection on fertility desires include race, number of children, health status and partner's HIV status.

The research findings also reveal that the obvious implications that women who showed no desire to have children if they were HIV positive was the potential for transmission of HIV from mother to child. According to *The International Perinatal* (1999, pp. 977-987), recent studies have shown that although maternal transmission of HIV can be reduced to about 2%, the possibility of vertical transmission still exists.

Other participants during the focus group discussion who expressed no desire to have children if they were HIV positive sighted significant implications in the future for the transmission of HIV to their sexual partners and newborns. They alluded to maternal transmission accounting for almost all new infections in children although the risk of transmission of HIV from mother to infant could be decreased with prophylactic treatment, however, chances of infection had not been eliminated.

Members of staff who were interviewed stressed the importance of focusing on HIV infected women who were most likely to become pregnant by choice. They said this was an important subpopulation whose counselling and service needs differed substantially from those of women who experienced unwanted pregnancy. They welcomed the introduction of compulsory HIV testing as a routine part of antenatal care. This was because finding out the HIV status of an expectant mother meant that they could receive treatment that would significantly reduce the chance of passing the infection on to their baby and making sure they stayed really well during the pregnancy. If they did not want the test or had any concerns, they were free to discuss this with the medical staff. The test would however never be done without first asking for permission from the client. A member of staff at KUC during an interview had this to:

At present, many uncertainties exist in the care for HIV positive pregnant women. Recommendations may be offered in which only a small amount of evidence exists related to long term outcomes for example, antiviral medications Most women who intend to have children are concerned about their baby's health and safety and, thus, they were receptive to the information that health care professionals can provide. In addition, health care providers have a moral,

ethical, and legal responsibility to ensure that pregnant women and their families understand the care options given (Sister in-charge, KUC).

If one was found to be HIV positive they would be advised to start taking some tablets at least for the time they were pregnant. This would help keep the newly diagnosed patients well during their pregnancy and would also mean that there was very little chance of their baby becoming infected with HIV.

Table 7: Childbearing despite partners HIV positive status

Response	Frequency	Percentage
Yes	68	56.7
No	48	40.0
Do not know	4	3.3
Total	120	100

Results from table 7 show that most of the respondents 56.7% would have children despite their partners HIV positive status. 40% said they would not and 3.3% were not sure. These findings are consistent with a study done by Kashesya, et al., (2009) on the challenges facing HIV positive discordant couples in Uganda. The results revealed that the main reason for wanting a child included ensuring lineage, continuity and posterity, securing relationships and pressure from relatives to reproduce (www.ncbi.nlm.nih.gov, viewed on 15/04/2013).

Research findings after a focus group discussion revealed that knowledge of partner's HIV status influenced both fertility desires and expectations suggesting the need to incorporate partner's HIV testing into family planning services. It was highlighted that there is need for increased access to medical care for HIV positive women, as these women were disproportionate from marginalized populations that were less likely to receive prenatal care.

Those who said they would not have children if their partner was HIV positive during the focus group discussion alluded to the fear of transmission of the virus. They said the only way of preventing infection was by using condoms. One of the participants in the FGD had this to say:

For people who have children, there was no need to risk getting both partners infected as one would remain looking after the children should one develop AIDS, hence risking infection for the sake of having more children is very unwise.

(Male participant)

Another participant had this to say:

In a situation where I was negative and my partner was positive, it would be very difficult for me to have a child because there is no other way of me preventing myself from getting infected unlike our male counterparts especially those who are circumcised as they can clean themselves after intercourse to prevent themselves from getting infected (Female participant).

Those who said they would have children despite partners HIV status gave reasons such as being stigmatized and being labeled by society as the childless couple. Another participant who said they would contemplate having children if their partner was HIV positive had this to say:

Since there are measures nowadays to prevent transmission to the baby, as a way of strengthening the marital bond and gaining respect and recognition from society, I would consider having a child or two (Female participant).

Findings after an interview with staff at KUC revealed that there was an increase in HIV discordant couples (mixed status couples). For those who desired children and wanted to continue bearing children, counselling was done to advise the couple on the repercussions of their choices but as medical practitioners their role was to give advice and not to discourage couples from having more children.

Male circumcision was also offered as an option during counselling to discordant couples who wished to have children.

The medical practitioners however pointed out that it was risky for mixed-status couples to attempt to conceive on their own. Having unprotected sex to have a baby would pose a risk of passing the virus to the uninfected partner. A safer option was to seek assistance at a fertility

clinic. Some fertility clinics in developed countries offer sperm-washing programmes for HIV-infected men or an artificial insemination program for HIV-infected women, so that couples of mixed HIV status could try to conceive a child without exposing the uninfected partner to HIV. This was legal in some countries, but not countries like Zambia.

The staff welcomed the introduction of male involvement in maternal health issues as this had made information dissemination and adherence very easy because couples were given the right information which they both need to follow in order to ensure proper health to both themselves and their children. The staff further explained that the health status of the couple in some cases would significantly affect a women's desire for children in the future but not men's. For the men their health status more strongly influenced their expectations to have children.

It was observed that while HIV positive women who already had children were significantly less likely than others both to desire and to expect more births, partner's HIV status had mixed effects. For women, however, having no children was a predictor of both desires and expectations. Interestingly, having a partner whose HIV status was unknown was a predictor for women to desire children compared with women who knew their partner's status, regardless of whether that status was positive or negative. In contrast, having a partner whose HIV status was known was a significant predictor for expectations of children compared with women whose partner's HIV status was unknown. This finding suggests that knowledge of a partner's HIV status may be a proxy for duration, intimacy or other unobserved characteristics of primary relationships that affect whether people desire and expect children.

The midwives stated the **issues involved for an HIV positive woman who wanted to become pregnant with an HIV-negative man. They said** there were risks that unprotected sexual intercourse with an HIV positive woman would lead to infection of an HIV negative male partner. However, if this was the case and the woman wished to become pregnant it was possible to prevent the male partner becoming infected if the woman used a self-insemination kit. This simple procedure involved the woman inseminating herself, basically squirting the semen into her vagina, at the time she was ovulating, with her partner's sperm which had been collected in a sterile pot. It was however important for the couple to discuss their plans with the healthcare

team especially if they were on HIV medication or had other health problems. The medical practitioners would then make sure if one was to become pregnant the baby would not be harmed.

They further went on to state the issues for an HIV negative woman wishing to become pregnant with an HIV positive man. If the father was HIV positive but the mother was not, the baby would not be directly infected from the father's sperm. But if the woman became infected during conception there was significant risk of transmission to the baby. The following were some actions that were recommended to be taken in such circumstances:

- **Normal conception:** Some couples may elect to get pregnant by having intercourse like any other couple. This was only recommended when the male was on treatment and their HIV was fully controlled and they had been checked for other infection and that he was producing good quality sperm. The female partner was also supposed to take anti-HIV drugs during this time to further reduce the risk of becoming infected with HIV. Couples who wished to conceive in this manner would talk to their doctors and nurses before they considered this and get support to make sure they did this safely.
- **Sperm washing:** One option for couples where the male was HIV-positive and the woman HIV negative could be sperm washing. A semen sample could be 'washed' and used for insemination. A woman wishing to get pregnant by this method would be monitored to determine when she was due to ovulate, and then her partner would be asked to provide a sperm sample which was washed before testing it for HIV. So far there had been no cases of HIV transmission to the female partner with this method. It was important to note that sperm washing was looked upon as a risk-reduction process and not a fertility treatment.
- **Artificial insemination:** Another option for a woman who was HIV negative and whose partner was HIV positive might be artificial insemination with another man's semen either from an anonymous donor, or someone known such as a member of her partner's family. This was an option that many women used if their partner was infertile or risked passing on other infections.

It was however mentioned that the above mentioned procedures were only done at the University Teaching Hospital (UTH).

Table 8: Attitudes and intentions on childbearing by HIV positive couples

Response	Frequency	Percentage
Yes	73	60.8
No	45	37.5
Do not know	2	1.7
Total	120	100

Findings from table 8 show that most of the respondents 60.8% would contemplate having a child despite there's and partners HIV status being positive, 45% said they would not while 1.7% was undecided.

The above findings are consistent with a study done in the USA from September through December 1998 with 1,421 HIV infected adults who were part of the HIV Cost and Services Utilization Study. Among those desiring children, 69% of women and 59% of men actually expected to have one or more children in the future. The proportion of HIV-infected women desiring a child in the future was somewhat lower than the overall proportion of U.S. women who desired a child. The fertility desires of HIV-infected individuals do not always agree with those of their partners: As many as 20% of HIV-positive men who desire children have a partner who does not (*Family Planning Perspectives*, pp.152- 165).

Staff who were asked during an interview at the clinic whether it was possible for HIV positive couples to have an HIV negative child said yes it was possible, as HIV infection in both parents does not appear to affect the likelihood of having an HIV infected baby. They said there was a possibility of an HIV positive mother passing the virus to her child during pregnancy, at the time of birth, or when breastfeeding the infant but medical treatment of both the mother and her infant during pregnancy and delivery had reduced the chances of this happening.

In these days of highly active antiretroviral therapy (HAART), HIV has become a disease that people are living with for decades. Many HIV positive men and women are interested in having children of their own. Although the risks of transmission during pregnancy have not been eliminated, new treatments and technologies have made it much safer for HIV positive couples to have children (Midwife, KUC).

The medical staff stressed the importance of couple counselling and visiting a doctor or midwife before trying to become pregnant in cases where one or both of the partners were HIV positive. The doctor or midwife would then help the couple decide whether trying for a natural pregnancy was alright. The couple would then be given information about PMTCT to reduce the chances of infecting their future child. Other options for childbearing may include use of assisted reproductive technologies or adoption and after counselling some couples may decide to remain child free depending on the risks involved. Another midwife had this to say at a counselling session during antenatal

If either you or your partner is HIV positive, it doesn't have to be the end to your dreams of having a family. However, it can make the decision making process more difficult. Therefore, it is important to begin the process with as much information as possible. If your physician is uncomfortable discussing reproductive options with you, seek out someone else who will give you the help that you need. It's better to wait and do it right than to risk the health of your future child any more than absolutely necessary.

According to the *Family Planning Perspectives*(2001, pp 1152 & 1165) ,”the fact that many HIV infected adults desire and expect to have children has important implications for the prevention of transmission of HIV, hence the need for counselling to facilitate informed decision making about childbearing, and the future demand for social services for children born to infected parents. An accurate description of fertility desires and intentions among infected individuals is necessary to aid infected individuals who desire and expect children to do so without sacrificing the health and well-being of their newborns, their partners and themselves. As a benchmark for gauging the fertility-related counselling and service needs of HIV- infected adults, it is useful to compare their desires and intentions with those of non-HIV-infected adults”.

HIV-positive men and women who desire children have numerous service needs in addition to planning for a future based on their positive status. To help them make informed choices, HIV positive individuals will need family planning counselling.

(Counsellor KUC)

Until recently it was thought that pregnancy could have a negative effect on a HIV positive woman's health as the immune system might be further suppressed by pregnancy. It now seemed that pregnancy was only likely to have an impact on a woman's physical health if she was already unwell, or had very low CD4 counts.

Findings reveal that if both partners were positive and taking combination treatments it was important to discuss conception and contraception plans with health professionals preferably before conception. This was particularly important if either partner had resistance to any HIV drugs as there was a chance a resistant strain of the virus could be passed between partners. Also there may be need to make changes to their medication to make sure if the woman becomes pregnant, the baby would not be harmed by the drugs.

Table 9: Encouraging couples to have children if they were HIV positive

Response	Frequency	Percentage
Yes	64	53.3
No	50	41.7
Do not know	6	5.0
Total	120	100

According to the findings the majority of the respondents 53.3% said they would encourage a couple to have children if they were HIV positive. 41.7% said they would not and 5% did not know. The findings in table 9 are not consistent with the findings in a baseline study done in Kenya at two sites, Kebera and Dagorretti of Nairobi in 2004, which showed that the majority (about 80% of ANC women) felt that HIV infected couples, should not have children. The overwhelming reason provided was that children would be infected, then suffer and die

(www.policyproject.com/pubs/.../ImplementingPoliciesandPrograms.pdf, viewed on 02/05/2013)

During a focus group discussion, those who said they would encourage other couples to have children despite their HIV status attributed this to the positive results they had witnessed in society where couples were able to have HIV negative babies due to the medication given during and after pregnancy to prevent transmission to the baby. Those who gave a negative response said they doubted the effectiveness of the drugs hence taking risks was unwise.

The findings from an interview with staff at KUC indicate that the majority of HIV positive men and women who expected to have children had a primary partner or spouse who was HIV negative or of unknown status which seemed to have major implications for the heterosexual transmission of HIV. Some evidence existed of HIV discordant couples risking HIV transmission to have a child who might not be infected. It was important to determine the extent to which HIV positive men and women who expected to have children and had HIV negative partners or partners of unknown HIV status aware of the risks of heterosexual transmission of HIV.

Findings further revealed that if the desires and expectations of HIV positive men and women to have children in the future were fulfilled, the number of children with HIV-infected parents was likely to increase even further as the HIV epidemic spread among men and women of childbearing age. The lives of both infected and uninfected children would be significantly affected by their parent's illness. Children of infected parents would then need social services and other support to plan for a life with parental illness, including counselling to cope with any stigma of growing up with an HIV infected parent.

There is need to assure that treatment guidelines for HIV positive women during pregnancy are updated and disseminated to obstetricians in a timely manner. HIV positive women who give birth will need follow up of the newborn until maternal antibodies disappear and HIV status can be ascertained

(Nurse in charge at KUC)

According to the findings, it is evident that care provided for the HIV positive pregnant woman and her neonate differ from care for uninfected women, it is important that the woman and her

family are well informed and understand these differences and the limitations of their choices in order to promote a safe, positive birth experience. Women are given birth options by way of counselling during the antenatal visits so that they make informed choices so as to reduce the risk of transmission to their new born and further risks to themselves. Thus, it is important that women knew upfront which options may be appropriate and which options may result in an increased risk of HIV transmission to their newborn and further risks to themselves

A midwife during an interview stated that pregnancy did not seem to contribute to the progression of HIV disease, and HIV-positive pregnant women do not experience more complications of pregnancy when compared to uninfected women. Recent advances in therapies to promote life and health for HIV positive individuals had resulted in a longer lifespan for many. However, living longer and remaining symptom-free could contribute to more women with HIV becoming pregnant in the future.

Because of the increased educational needs of HIV positive pregnant women, childbirth educators who were working in high prevalence areas could consider offering a special course to women who were HIV positive. The course would need to be handled carefully so as not to compromise patient confidentiality and to gain the trust of women. However, women might benefit by knowing other families who shared their circumstances. It would also be important not to make the women feel as if they were being excluded from regular prenatal classes because of their HIV status, but that a special course was created for them to better meet their educational needs. Any of the expectant couples that were concerned about segregation should be invited to attend the regular prenatal classes as well. To date, published research had not addressed whether one type of course or time was better than another for HIV positive pregnant women, childbirth educators who worked in high prevalence areas were encouraged to discover what worked best for their particular community.

The Nurse in charge in an interview at KUC stated that pregnant women who were HIV positive need special care during pregnancy, labour and delivery, postpartum, and as their child grew. Anticipatory education during the prenatal period could be beneficial to women and their families. Knowledge of the differences in needed care allowed the pregnant woman and her

family to make informed decisions regarding their care. It also allowed them to appropriately develop a birth plan for the best possible outcomes.

5.2.3. Utilization of PMTCT Services

The study found out that there were a number of factors that affect the level of utilization of PMTCT services: these include stigma about HIV and AIDS and lack of proper sensitization.

Table 10: Knowledge and attitudes towards PMTCT

Response	Frequency	Percentage
Yes	105	87.5
No	15	12.5
Total	120	100

Table 10 shows that 87.5% of the respondents know where to access information on PMTCT. The findings reveal that the majority of the people in the Kasama community are well informed about MTCT and that information is effectively reaching the masses. This shows a positive indication with regard to reaching the goals stated in the UN 2010 protocol guidelines where everyone should be well informed about the benefits of PMTCT by the year 2015. 12.5% of the respondents said they did not know where to access PMTCT services. This is an indication that the target has not yet been reached hence need to scale up efforts in order to reach the 100% mark

However, other studies have shown low coverage figures regarding knowledge on MTCT transmission. Such studies include: a study done by Moth I.A, et al., (2005 ,pp. 244-250) where maternal knowledge on MTCT of HIV was as low as 8.9% and another study done in Ghana by Ankalu, (2005), where less than 2% of respondents in the survey mentioned MTCT as one of the modes of HIV transmission (www.aegis.com/conference/NHIVPC/2005/TP-109.html, viewed on 16/05/2013)

Members of staff interviewed at KUC revealed that information on PMTCT was accessed at any health centers like hospitals and clinics providing antenatal care. They further went on to give information about the activities done/given at these centers which include antenatal care, HIV testing which is mandatory for all pregnant women, anti retroviral treatment (ART) for anyone found positive after testing to prevent transmission, dry blood spot (DBS) which is a test done to all babies born from HIV positive women to ascertain whether or not they were HIV positive.

Other sources that were sighted include Radio through sponsored programmes on radio Mano. Sometimes the air time if bought would bring programs through sponsorship but if there was no sponsorship, information on PMTCT would not be aired. Traditional birth attendants (TBA) were also sighted as sources of information on PMTCT.

Findings reveal that radio was the most frequent source of family planning messages for both women 39% and men 52%. Television was also a common source, with one in five women and one in four men reported seeing a family planning message on television in the 12 months preceding the 2007 ZDHS survey. Newspaper and magazines were the least common source of information for both women and men 12% and 19% respectively. More than half of women 56% and about four in ten men 41% were not exposed to any messages through radio, television, newspaper, or magazines (CSO et al. 2009). Findings also show that media exposure also increased with education and wealth for both women and men.

According to the findings from the group discussion, a lot of women said they did not have access to the electronic media like the radio (Radio Mano F.M) where information on PMTCT was aired and therefore the possibility of being exposed to PMTCT and other health information was minimal as illustrated by one of the participants in the group discussion who had this to say:

Most of the women do not have access to information on the radio because our husbands move around with the radio sets and worse still they do not share with us the details about the health information that is aired. Sometimes, when the radios are at home, the time that the programmes are aired is when we are doing house chores and running errands hence we fail to listen as it is practically impossible to stop doing our work.

The findings reveal that even though the electronic media can offer information on PMTCT, not everyone, especially the target population own radios and televisions hence making information

dissemination difficult even if a larger audience could be captured. Therefore, more efforts need to be put in place so as to have everyone well informed

Table 11: Number of people accessing antenatal care at first visit at KUC from January to June 2012

Target 125/Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Antenatal 1st Visit 2012	114	77	84	86	106	82						
Percentage	92.2	61.6	67.2	68.8	84.8	65.6						

Chart 3: Antenatal first visit 2012

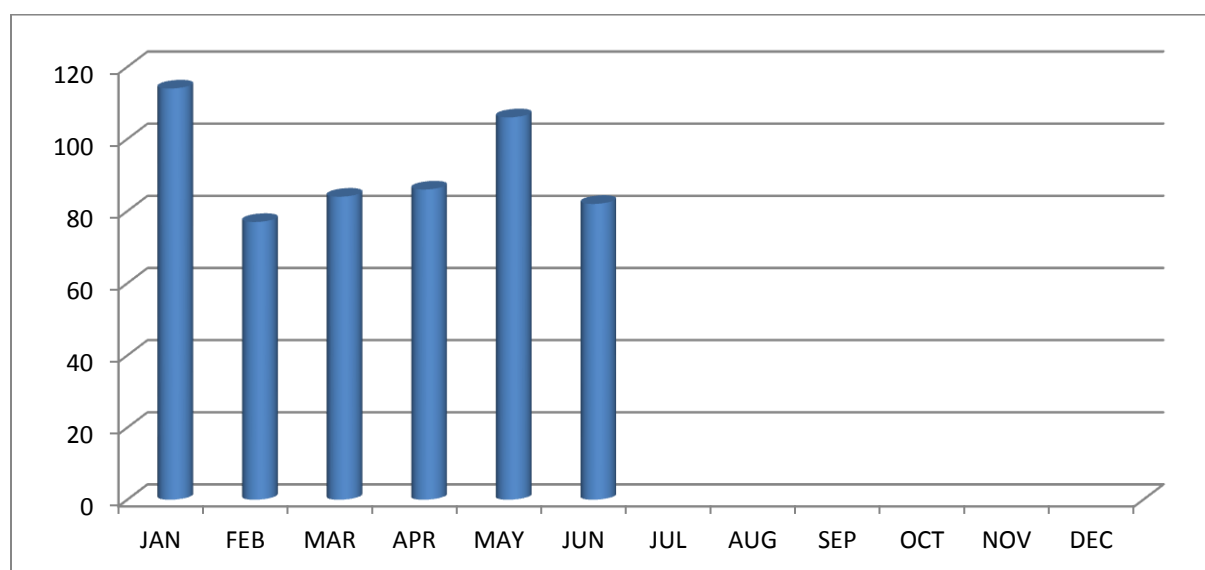
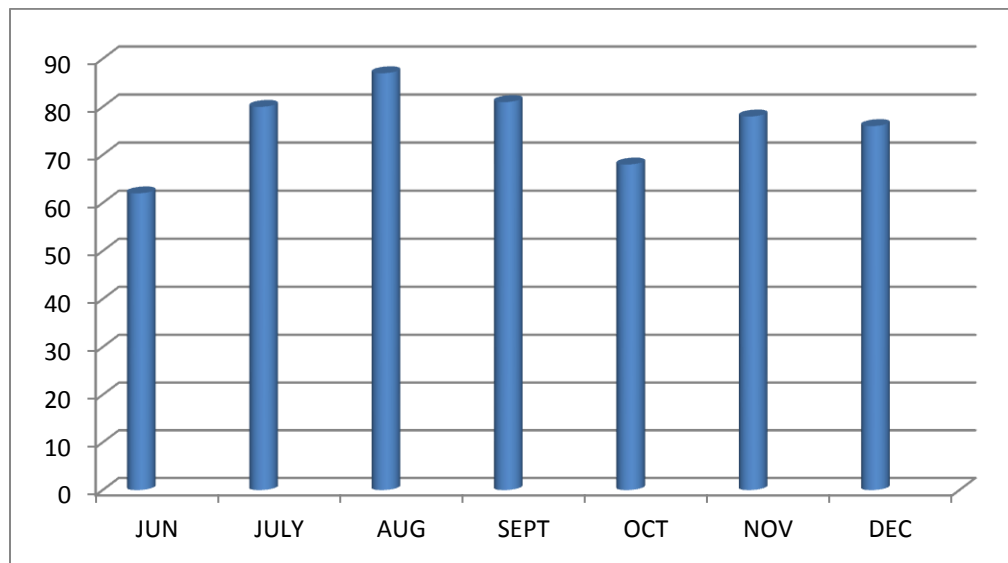


Table 12: Number of clients attending antenatal at first visit in 2011

Target 121/Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Antenatal 1st Visit 2011							80	87	81	68	78	76
percentage							66.1	71.9	66.9	56.1	64.4	62.8

Chart 4: Illustration of clients accessing antenatal care at first visit 2011



The findings from tables 11 and 12 are illustrated in charts 3 and 4 respectively. These reveal that there are more people accessing health services at KUC hence information seems to be impacting positively on the communities of New town, Central Town and Location township and the whole Kasama community at large. There seems to be an improvement in the number of people attending antenatal, evidenced from 64.7% between July and December 2011 and 73.2% from January to June 2012 indicating a percentage increase of 8.5%.

In an interview with staff, findings reveal that the prevention of mother-to-child transmission for HIV (PMTCT) being implemented at the health centre is playing a crucial role in reducing the transmission of HIV from mother-to child.

Most of the health workers said acceptance of PMTCT services by women of childbearing age was very high. Almost all the mothers who accessed PMTCT services at the health centre were usually ready to take up the service and ARVs for mother-to child HIV transmission prophylaxis were usually readily available. At the time of conducting the research, there were no reports of mothers who refused to register for PMTCT due to stigma. Those who complained of stigma failed to give tangible evidence during the interviews. The stigma that was stated was likely to be self imposed stigmatization whereby a person would put it in his or her mind that people were thinking something bad about them. Among the PMTCT clients, only 15% doubted the direct benefit of taking ARVs to the health status of their mothers because the ARVs did not cure or get

rid of HIV from the blood and fluids of the mothers. However, most of them had admitted seeing direct benefits and hearing of benefits 85% of the PMTCT respondents, which shows that there was a possibility that PMTCT was playing a wonderful role in reducing the transmission of HIV.

Table 13: Efficacy of PMTCT services in reducing MTCT

Response	Frequency	Percentage
Agree	112	93.3
Disagree	7	5.8
Do not know	1	0.8
Total	120	100

Findings from table 13 reveal that the majority of the respondents 93.3% were aware of the effectiveness of PMTCT in reducing mother to child transmission. Only 5.8% disagreed that PMTCT does reduce the risks of transmission to an unborn baby. 0.8% of the respondents were not aware about the efficacy of PMTCT services. These findings show that the desire and intent to have children among HIV infected people may increase because of improved health status and survival following commencement of antiretroviral treatment. This may be supported by a study by Cooper et al., (2005) in South Africa who observed that before starting ART, many HIV infected women and men were firm in their desire not to have children.

The hospital administrator and laboratory technician in an interview gave an account of the medicines that were administered to HIV positive expectant mothers and the dosage. Medicine such as zidovudine (ZDV) was considered the standard of care for prevention of maternal-to-child transmission of HIV and was the only drug that has had success in lowering the rates of transmission. It was stated that zidovudine alone was no longer considered the standard of care for treatment of HIV in women. Women who also wished to be treated for HIV during pregnancy would be prescribed combination drug therapy that included, but was not limited to, ZDV. Optimal antiretroviral therapy was tailored to the pregnant woman's virologic and immunological status and was not typically withheld due to pregnancy at any gestational age. During pregnancy, alterations in dosing requirements for antiretroviral medications would be needed due to the physiological changes of pregnancy, including drug absorption, distribution

and elimination. In some instances, for the woman who had not been previously taking antiretroviral medications and were also in good health, antiretroviral medication could be delayed until 14 weeks gestation when embryogenesis was complete (Sherman, D., & Sherman, N., 2001, pp. 361–379). Additionally, for women with severe nausea and vomiting early in pregnancy who may not be able to tolerate oral antiretroviral medications, frequent doses were necessary to maximally suppress viral replication.

Women who were already taking antiretroviral medications would be cautioned against abruptly stopping them once pregnancy was discovered for fear of the effects on the fetus and newborn.

While inadequate data existed about the safety of most antiretroviral medications for the fetus, women were advised against stopping treatment abruptly as discontinuing antiretroviral medications can result in a significant increase in viral load and increased risk of transmission (<http://aidsinfo.nih.gov/guidelines/perinatal/perinatal-083002.html>, viewed on 17/04/2013).

As more drugs are developed and tested, combination therapies have become increasingly popular in suppressing the HIV virus. Women taking combination therapy prior to pregnancy would continue to do so; however, any combination therapies could include ZDV, as it was the only drug treatment shown to reduce perinatal transmission. Women who tested HIV positive opted to wait until 14 weeks gestation to begin combination therapy because the risks to the fetus were unknown (Katz, 2003, pp. 102–108).

One study by Lorenzi et al., (1998, pp. 241–247), found women who started treatment early may benefit from understanding that the advantages of beginning therapy early included maximum viral suppression and decreased risk of transmission, decreased risk of developing resistant strains of HIV, prevention of progressive immune failure, and prevention of opportunistic infections.

Findings from an interview with staff at Kasama Urban Clinic revealed that previously mothers would start prophylaxis at 28 weeks which is 7 months of pregnancy. In the latest 2010, PMTCT National Protocol Guidelines of the Ministry of Health in Zambia, it was recommended that women start attending antenatal clinic as early as 14 weeks(4 months) so that any woman found HIV positive would start taking antiretroviral drugs for prevention of HIV transmission to the

unborn child. Those who were already on antiretroviral therapy (ART) continued to take ARVs except that their antiretroviral drugs were changed to those contra-indicated to be taken in pregnancy. The prolonged and early start of taking ARVs by pregnant women may surely reduce the HIV transmission from mother to child. These findings are consistent with a Cochrane review by Sturt et al., (2010, pp 8) which included three randomized trials and six observational studies found that in women eligible for triple ARV regimens, triple therapy is safe, effective and reduces vertical transmission and has become "the standard of care to prevent MTCT in HIV infected pregnant women in resource rich settings". Triple antiretroviral regimens result in lower rates of vertical transmission than short-course regimens.

Research findings in an interview with staff also revealed that early transmission could occur by passage of HIV through the placenta. Hence, breaks or leaks in the placenta could increase the risk of viral passage to the fetus. Transmission of the virus to offspring was more likely to occur when the woman had a larger amount of virus (high viral load) present in her system. A high viral load represented early infection prior to the body developing adequate defense mechanisms to fight the infection or late in the course of illness when the body was depleted to the extent that an adequate response could not be manifested. Use of antiviral medications during pregnancy and prior to conception could drastically reduce the woman's viral load and, thus, the risk of HIV transmission, hence the reason why women were encouraged to start antenatal as early as 14 weeks.

However, it was discovered that late registration for antenatal after 14 weeks of pregnancy still took place at Kasama Urban Clinic with some clients. This meant that such clients would start taking ARVs after 14 weeks of pregnancy thus increasing the risk of transmission to the unborn baby.

Findings reveal that the health centre was usually equipped with most of the essential drugs especially antiretroviral drugs (ARVs), laboratory equipment and reagents for quick implementation of PMTCT services. This had somehow improved the quick delivery of the services despite the dry blood spot(DBS) specimens which were sent to Ndola for examination due to lack of equipment in Northern Province for such examination for children under 1 year of

age. The other factor that had made improvement was probably the early starting point to take ARVs by pregnant women. In 2011 the health centre started following the new recommendation of prescribing and commencing ARVs to pregnant mothers at 14 weeks of pregnancy instead of 28 weeks of pregnancy which was being followed in 2010.

There are currently three volunteer Community Health Practitioners (CHP) trained as lay counsellors at the antenatal ward at KUC involved in the PMTCT programme. The counsellors were involved in counselling and testing. An interview with counsellors revealed that they would give advice to women about various maternal health issues and the importance of HIV testing among other topics. Women were encouraged to come with their spouses or partners for counselling and testing. The counsellors were not on the government payroll hence the only income they would get was transport refunds from the Zambia Prevention, Care and Therapy (ZPCT).

Their assessment concerning the PMTCT programme was that there had been positive results in reducing mother to child transmission of HIV considering the number of HIV negative babies that were born to exposed mothers, evidenced from the DBS tests conducted (Refer to tables 19, 20 and 21 for DBS results).

One of the counsellors during the interview had this to say:

There has been a reduction in children testing positive since the introduction of the PMTCT programme. When you see the children in the community or during under 5 clinics, almost all of them are not usually sickly and they live normal lives. These children usually have good weight as others that are not exposed to HIV. Even deaths are much rare among such children since the inception of PMTCT programme in the community.

The counsellors confirmed having less resistance from women during antenatal to undergo counselling and testing with their partners. They said acceptance was very high and there was no record of women refusing to come and register for the antenatal service for fear of stigma.

Findings were that the CHP faced a lot of challenges in conducting the PMTCT programmes especially with the issue of follow ups to mothers who had defaulted since some of them came from far off villages. Since air time was not provided by the Ministry of Health to enable the

counsellors talk to such clients despite them being told to ensure that they take phone numbers and write them in their registers.

When asked how the PMTCT programme could be improved. The CHP said the people implementing the programme should support them by assisting them with air time to enable them communicate with the clients. They also suggested that a little incentive be provided to help with community mobilization and sensitization as it was costly to move from one township or village to another.

They suggested that a Radio programme be introduced to ensure that all members of the community listened, asked questions and to ensure that they got proper answers from the health care providers. The CHP said that most of the people in the community had welcomed the PMTCT services as evidenced from the number of babies that were being found to be HIV negative despite being born from HIV positive mothers

Health care records shown to the researcher illustrate figures of expectant mothers who attended antenatal clinic in 2011 and part of 2012 at KUC. This was to reveal the number of registered clients who attended antenatal and those who tested positive as shown in table 14 showing figures and an illustration of clients that attended counselling and testing during antenatal visits at KUC from January to June 2012

Table 14: Number of clients tested of HIV at ANC

2012	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
Clients tested for HIV at ANC	382	523	530	359	888	663	3375
Tested Positive	60	50	63	58	77	73	381
Percentage (%)	15.7	9.6	11.9	16.1	8.7	11.0	11.2

Chart 5. Illustration of clients tested for HIV at ANC 2012

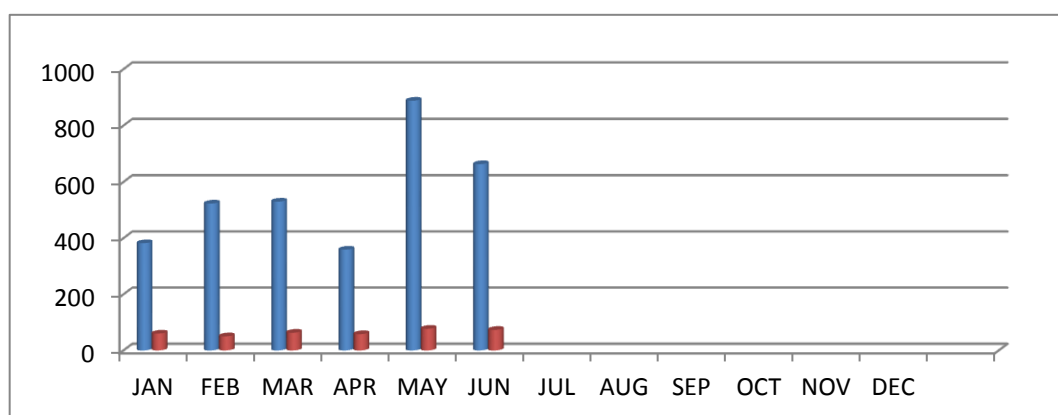


Table 15 and Chart 6 show figures and an illustration of clients that attended counselling and testing during antenatal clinics at KUC from July to December 2011

Table 15: Number of clients tested for HIV (excl) ANC

2011	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Clients tested for HIV(excl) ANC	521	546	429	360	465	350	2671
Tested Positive	32	62	62	60	82	39	337
Percentage (%)	06.1	11.3	14.4	16.6	17.6	11.1	12.6

Chart 6. Illustration of clients tested for HIV(excl) ANC

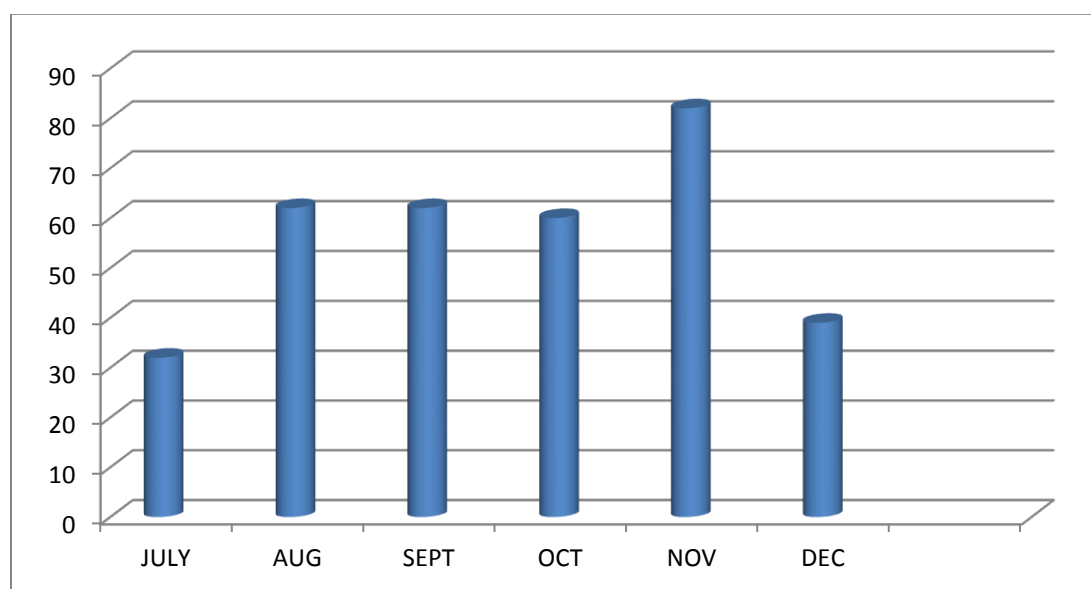
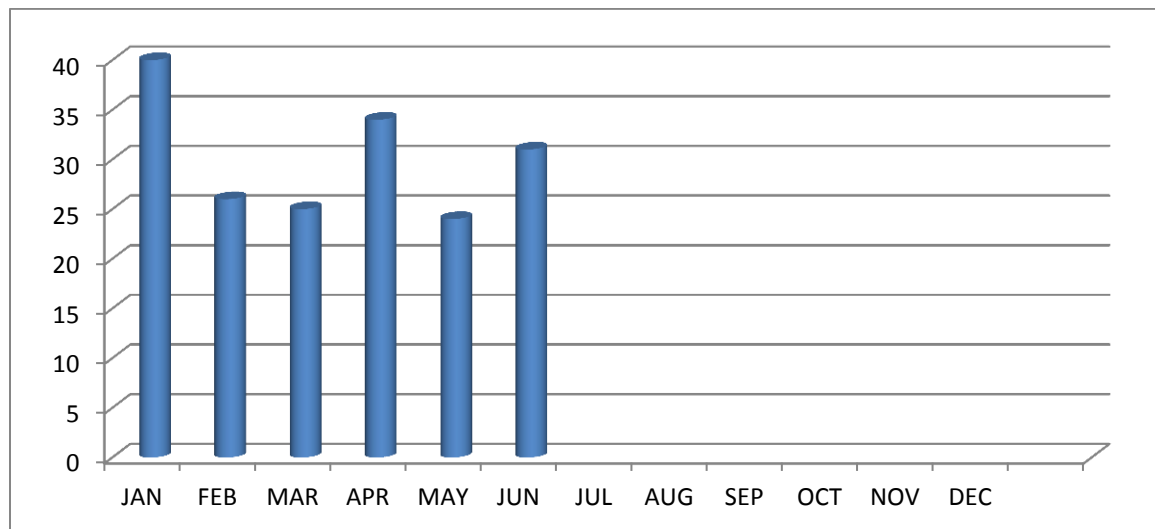


Table 16: Number of new patients on ART

2012	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
New patients on ART	40	26	25	34	24	31						

Chart 7. Illustration of new patients on ART 2012



According to the illustrations in charts 5, 6 and 7, findings reveal an increase in the number of women attending antenatal as well as undergoing counselling and testing at KUC from 11.2% between July to December 2011 to 12.6% between January and June 2012. Chart 7 shows an illustration of the number of patients put on ART in the year 2012.

The findings showed that there was quite a high prevalence of HIV among the pregnant women in the community which was a development problem in the community of Kasama. Health centre monthly and annual reports showed tangible evidence of HIV positive women attending antenatal.

In a study conducted in Lilongwe by Mbeye (2007,p.42), the results show that the desire to become pregnant was 33% before HIV positive results were know and twelve months thereafter, had reduced to 12%. The findings of the study revealed some association that ART increases fertility desires in short term but diminishes with longer duration on ART. Another explanation given for the findings were that after seeing the benefits of ART women with longer duration on ART would not be as willing to continue with childbearing in fear of compromising their health status.

Targeting women just starting ART with health messages or risks of childbearing while HIV infected would therefore be critical in HIV, Sexual and Reproductive health interventions.

Table 17: Limitations of childbearing by HIV positive couples to avoid worsening their health conditions

Response	Frequency	Percentage
Agree	111	92.5
Disagree	6	5.0
Do not know	3	2.5
Total	120	100

Table 17 shows 92.5% of the respondents agreeing to positive couples limiting the number of children so as not to worsen their health conditions. 5% disagreed to child limitation and 2.5% said they did not know. The findings in table 5.13 agree with a study done by Mbeye M.N (2007, p. 32) which revealed some associations that ART increases fertility desires in short term but diminishes with longer duration on ART. Another explanation for these findings would be that after seeing the benefits of ART women with longer duration on ART would not be as willing to continue with childbearing in fear of compromising their health status.

It is evident that fertility issues for HIV positive men and women are becoming increasingly important. Findings show that advances in treatment, such as Zidovudine and other antiretroviral drugs, have decreased transmission for infected mothers to their children to about 2%. (The International Perinatal HIV Group, 1999, pp. 977-987) Furthermore, as effective therapies continue to improve the diagnosis for women and men who were infected with HIV, were more frequently considering childbearing and parenthood (VanDevanter N et al., 1999, pp. 181-193.).

Table 18: Possibility of Children born from HIV positive couples to have a positive status

Response	Frequency	Percentage
Agree	21	17.5
Disagree	95	79.2
Do not know	4	3.3
Total	120	100

With the recent advances in antiretroviral drugs more children born from HIV infected mothers were being born HIV negative. Findings from table 18 reveal that 17.5% of the respondents agreed with the statement that HIV positive couples would give birth to HIV positive babies. The majority 79.2% of the respondents disagreed with the statement, while 3.3% said they did not know. The findings in table 18 agree with a study done by Mbeye M.N (2007, p. 31), where it was discovered that the belief that the virus can be passed from mother to child even while the mother is receiving ART had a borderline association with the decreased desire to have more children in the current study. However, some women felt they could not pass the virus to the child because ART is protective. This is consistent with findings in a study done by Cooper D et al., (2005) in Cape Town, South Africa regarding reproductive intentions and choices among HIV infected individuals, some women felt that the availability of peri-natal transmission prevention (PMTCT) would influence them in favour of having children to replace a deceased child and have an uninfected child.

Midwives who were interviewed at the labour ward at Kasama General Hospital gave an account of the measures that were put in place to ensure that the risk of transmission was reduced at the point of delivery. They said the newborn was bathed immediately after delivery to reduce the risk of viral transmission. If wall suction was used during delivery or immediately after ward, pressure was kept less than 140 mm Hg to prevent trauma to delicate newborn tissues and to prevent an increased risk of acquiring HIV. It was believed that prolonged exposure to HIV infected fluids could increase the risk of transmission to the newborn, thus, the woman would be made to understand that, to prevent the risk of infection, the newborn would not remain on her abdomen following delivery; rather, the baby would be bathed immediately. Except in the event of an emergency, no blood drawing or other invasive procedures would be done until the infant was thoroughly bathed. The skin would be cleaned with alcohol prior to needle sticks of any kind like vitamin K injection or PKU screening

Following birth, infants born to HIV positive mothers would have antibodies to HIV present in their blood. Screening and further testing for the presence of HIV antibodies, not HIV itself was done. Thus, using these testing mechanisms, all infants born to HIV positive mothers would test positive after birth. However, a measure of the amount of antibodies in the infant's blood may be useful for later comparison. Maternal antibodies were generally present in the infant's blood until

15 months of age. Only infants who continued to have antibodies of HIV in their blood at 18 months were considered to be positive for HIV.

Testing was advised at birth, 2 to 4 weeks of age, and 3 to 6 months of age. Diagnosis would confirm if the infant tested positive on two or more occasions. Multiple testing was recommended because HIV virus is less sensitive during the first 6 months of life. If these initial tests remained negative, a follow up test was recommended at 15 months to determine if any antibodies were present. Advanced maternal disease, high maternal viral burden, and prematurity could be factors that may predispose the infant to acquiring HIV infection. These findings are in line with a study done by Amponsah (2010, p. 42) where all 40 HIV positive mothers who were monitored, received treatment neither during the course of their pregnancy or at the onset of labour. All 40 children born to HIV positive mothers also received some medications. These medications helped to reduce the viral load of the mothers and eventually reduced the transmission of the virus from mother to child. From the study, eighteen out of the twenty six mothers who took NVP start dose at the onset labour had their infants tested negative after 18 months and above, and either tested positive. The only mother who took medication for less than fifteen weeks had the child tested positive. One out of the 10 mothers who took medication between fifteen and seventeen weeks had the child testing positive. All mothers who took medication for more than seventeen weeks had their infants testing negative.

The midwives further stated that the newborn would closely be monitored at birth and may be subjected to testing above and beyond that which was normally done with newborns. Symptoms of infants with HIV infection are rare during the newborn period, but manifested early in infancy or childhood. These symptoms include the following: failure to thrive;; recurrent mucosal infections especially ear and sinus infections; systemic bacterial infections like pneumonia, meningitis, urinary tract infections and recurrent oral candidiasis. Experts in pediatric infectious disease would also be utilized to help manage the newborn's care.

Because of the high rate of infections seen in HIV positive infants and the serious nature of any additional illness, in such cases, it was stated that caregivers need to be instructed on the signs and symptoms of infection and when to seek appropriate medical care. They would be encouraged to find a provider who was trained in providing PMTCT services.

According to Thureen & Abzug (1999, pp. 324–345), mothers would be advised to take the infants to receive regular immunizations, as scheduled. However, the infant would not receive the live oral poliovirus vaccine but would receive the inactivated poliovirus vaccine instead. Mothers would be made aware, however, that as the child's disease worsened, immunity gained through immunization could be lost.

As a measure to reduce MTCT, the midwives at KUC stated that if a woman or her partner were tested HIV positive, they would be informed about prevention of Mother-to-Child transmission of HIV and offered an opportunity to join the programme. All HIV positive women and their partners were clinically tested for CD4 count or clinically staged using the WHO staging criteria and based on eligibility criteria, and then they would be referred to the ART programme. If the facility was unable to provide this service, they would be referred to the referral facility where they would clinically be assessed for HAART eligibility. Clients who qualified for HAART would be offered other components of the MTCT programme except the short-course ARV's. All HIV positive women would then be registered in the Pre-ART register and followed up using the 2010 National Guidelines as recommended by the WHO. Where CD4 Count was not available; the WHO clinical criteria would be used to stage.

Antiretroviral drugs (ARV's) would always be available at the health centre where dispensing took place. According to the stock card available at KUC, ARV's for both mothers and children were always available and clients would always find drugs when prescribed to them.

Laboratory equipment and reagents were usually available at the health centre especially for testing HIV from clients. Most of the investigations were done at the health .Among the major investigations done for clients to start or be initiated into the PMTCT service provision included; liver function tests, CD4 count and full blood count. For HIV testing, clients receive results the same day. Some laboratory investigations had specific days on which they would be done and clients were told to come on specific days.

The major laboratory investigation that was not done at KUC was that of the Dry Blood Spots (DBS). Dry Blood Spots were specimen blood taken from babies on special papers which were dried, packed and taken to Ndola Medical Laboratory centre at Arthur Davison Hospital where the virus would be detected at 6 weeks of a baby exposed to HIV to confirm if the virus was in

the blood. The DBS specimen investigation was done only in Ndola at Arthur Davison Hospital and in Lusaka at UTH.

Concerning the PMTCT measures, all the members of staff interviewed said that they were helping to prevent HIV transmission from mother to child. Most of them said they had seen a reduction in HIV positivity in specimens especially on the results of initial Dry Blood Spots tests done at 6 weeks of age for babies. They said for most of the clients who took up PMTCT measures by taking ARVs during pregnancy or were already on antiretroviral therapy (ART) were found to giving birth to HIV negative babies.

According to the findings from monthly and annual reports at KUC, most of the children born from HIV positive mothers on PMTCT were found to be negative. Records of the 2010, 2011 and 2012 Dry Blood Spots test revealed that out of 126 recorded DBS tests and results done 2010 118 were HIV negative and 8 were HIV positive showing 3.3% of positive babies. The result recorded in the health centre for 2011 annual records show that out of 149 recorded DBS tests, 136 were HIV negative and 13 were HIV positive showing 8.7% of HIV positive babies .For 2012, the records show that out of the 165 babies that were tested for DBS, 146 were HIV negative and 19 were HIV positive indicating 11.5% of HIV positive babies. The tests and results done between January 2010 and December 2012 at KUC showed that from the DBS results from 440 babies, 400 were HIV negative while only 40 were HIV positive. The result shows that only 26.5% of the babies were HIV positive. Details are in Tables 19, 20 and table 21

Table 19: 2010 DBS RESULTS

Total number of babies recorded	Tested Negative	Tested positive	Percentage for positive
126	118	8	6.3

Table 20: 2011 DBS RESULTS

Total number of babies recorded	Tested Negative	Tested positive	Percentage for positive
149	136	13	8.7

Table 21: 2012 DBS RESULTS

Total number of babies recorded	Tested Negative	Tested positive	Percentage for positive
165	146	19	11.5

Findings from the results above reveal that there has been quite a tangible reduction of babies being born HIV positive. Results show a percentage increase of 4.2% in the number of HIV negative babies from 2010 to 2012. If, all the PMTCT parameters were strictly followed and adhered to, HIV positivity among children could continue reducing.

Staff at KUC however noted challenges that were being faced to inform clients on DBS results as the only possible means was by phone, using text messages. This service was paid for by ZPCT a USAID non-governmental organization which supports the health centre on PMTCT service provision. This was done through computer and internet service available at the clinic. However, the use of this service had a number of limitations as the staff could not speak directly to the clients hence feedback was not received in time. Depending on the status of the DBS results, clients were expected to come to the clinic in good time to collect medication for positive results but there were challenges of ensuring that they come within the given period of time.

Another challenge faced was the lack of laboratory equipment in the Northern Province for conducting DBS tests. The tests that were sent to Ndola for examination sometimes delay hence having negative implications as this would delay commencement of treatment for positive babies.

Members of staff gave a few suggestions to address the challenges being faced such as: government providing a specimen laboratory for DBS at every provincial headquarters so that there were no delays in getting the results hence starting treatment in good time. They also said there should be a Radio programme introduced at the local FM Radio station, Radio Mano to help sensitize mothers for early registration that is to come to register for antenatal at least at 14 weeks of pregnancy. The SMS service was not enough to inform clients not to default but to come to the clinic on time. They also suggested that talk time should be provided to ensure that the medical staff talked to the clients in person so as to understand their situations better.

It was found that taking antiretroviral drugs by pregnant women as prophylaxis for mother-to-child transmission of HIV was producing direct benefits not only on the health status of the children but also on the mothers, families and the community at large. The health status of children was improving greatly as more and more children continued to receive negative results from HIV positive mothers. Most of the mothers in the community registered for antenatal care at KUC and the number of mothers opting to deliver at the clinic had increased despite the long distance to the clinic for most of them.

Most of the PMTCT clients were happy with the programme and they under went counselling and testing for HIV without resistance at the health centre. Most of the children who were seen were HIV negative. Although the number of positive babies have not reduced to 5% recommended for Zambia in the National Protocol Guidelines goal for PMTCT, there is a possibility to reach the goal if interventions are intensified even in the rural areas.

Table 22: Short Life expectancy of an HIV positive woman after childbirth

Response	Frequency	Percentage
Agree	32	26.7
Disagree	78	65.0
Do not know	10	8.3
Total	120	100

Only 26.7% of the respondents of the survey questionnaires agreed that any woman who was HIV positive and gave birth would die early, while the majority 65% disagreed that the life expectancy of an HIV positive woman is shortened after giving birth. 8.3% of the respondents were not sure. Therefore the position of the majority of the respondents (65%) does not agree with the position of the Family Health Options of Kenya (2006), which reported that people living with HIV reported change in sexual desire mainly due to a positive diagnosis because HIV interfered with their plan where they had to consider their health by having sex less frequently because they felt their body needed strength and they had to use a condom always to avoid re-infections. This could be attributed to the availability of ARV's and PMTCT.

Midwives at Kasama General Hospital were interviewed so as to have a better understanding of how positive women were fairing in terms of health after giving birth. Findings were that all counselling which was done was in line with the post test counselling format which was provided during the counsellor's training. If a woman or her partner tested HIV negative, the woman received post test counselling on how to maintain the HIV negative status, with a focus on her health, safer sexual practice, and the high risk of transmission to her baby should she become infected during pregnancy or breastfeeding. The window period was explained once more as the woman received antenatal care. It was emphasized that any woman who was at risk of exposure to the virus was re-tested after 3 months or towards the end of her pregnancy or soon after delivery.

During the post-test counselling and over the next visits, the newly diagnosed HIV positive women would be provided with on going counselling which included: emotional support, assessment of coping information about existing peer support groups, appropriate referrals for support and information around positive living. Information about the HIV virus, potential health problems and the importance of clinical care for HIV diseases was given. Information about the ART programme and about the MTCT programme and medicines are offered including potential side effects.

Clients were also counselled on partner identification and disclosure, stigma and discrimination and shared confidentiality. Clients who qualified for PMTCT were provided with antiretroviral drugs in accordance with the WHO Guidelines. As soon as the woman reached 28 weeks of pregnancy, or soon after, a short course of ZDV therapy would be started. However, women who

delivered from home were requested to visit a health facility within 72 hours after delivery for the NVP and AZT baby syrup doses and for immunization. All regimes were administered orally. Efforts would however be made by health personnel to monitor for side effects and support maternal and infant adherence. All women were supposed to receive information about husband/partner testing. All HIV results and post testing counselling sessions were recorded in the counselling register.

Table 23: Effects of HIV positive status on having children

Response	Frequency	Percentage
Agree	23	19.2
Disagree	92	76.7
Do not know	5	4.2
Total	120	100

From table 23, 19.2% agreed, while 76.7% disagreed to HIV positive status discouraging people from having children while 4.2% said they were not sure. According to a study done by Hoffman, I, (2006), findings revealed that women's desire for more children diminished as the period on ART increases. One explanation would be that the women on ART for a longer period might have gone through extensive health education that might have influenced their behaviour/intentions unlike those that have just started on ART. In fertility intention study in Lilongwe, the desire to become pregnant was 33% before HIV positive results were known and twelve months thereafter, had reduced to 12%.

Findings are that since access to antiretroviral therapy has improved the quality of life and survival for HIV infected people, many will contemplate child bearing. Identification of contextual determinants of decision to have children among HIV positive couples is useful for designing of policies and establishing intervention priorities in reproductive health for this population.

Several studies that have described pregnancy intention rates in different contexts of people living with HIV have reported rates that range from 17% in Uganda to 63% in Nigeria. Studies

from Zambia and Zimbabwe found no effect of HIV diagnosis on subsequent childbearing, implying that pregnancy intentions were unaffected by HIV diagnosis. Childbearing intentions among HIV positive persons are more common in developing countries where the overall fertility in the population is still high, contraceptive use is low, and unmet need for contraception is high. They have also been noted in more developed countries such as Brazil, United States of America, France and Italy (Chen et al., 2001 pp.144–152).

To consider the consequences of bearing a child or pursue alternatives such as adoption, those who intended to become pregnant would need services, in addition to prenatal and delivery care, that would help plan for a future closely linked to medical and social support, particularly given the competing caregiver responsibility of a parent living with infection.

Table 24: Limitations of childbearing intentions by HIV positive couples despite their economic status

Response	Frequency	Percentage
Agree	76	63.3
Disagree	35	29.2
Do not know	9	7.5
Total	120	100

Findings from table 24 show 63.3% of the respondents agreeing to HIV positive status being a cause for couples to limit the number of children. 29.2% disagreed while 7.5% were not sure.

These findings are supported by the findings of a study done by Rutenburg et al., (2000, pp.124-130) in Zambia which summarized the main motivations for desiring fewer children as fears that continued reproduction would worsen one's health. The possibility of transmission of the virus to the child was also another fear.

HIV positive status may reflect a disparity in families' economic prospects, with these being worse when the male partner is HIV-infected and unable to work than when the female partner is HIV-infected, but her partner is not.

Childbearing intentions by HIV negative couples are also being altered in that these couples are made to take care of children from relatives who have died from AIDS. The couples are then forced to assume responsibility of raising and educating these orphans hence most of them would decide to reduce on the number of children they were initially intending to have so as to accommodate the ones they have adopted as guardians.

Table 25: Breastfeeding of children by HIV positive mothers

Response	Frequency	Percentage
Yes	100	83
No	20	17
Total	120	100

Findings from the survey questionnaire reveal that the majority of the respondents 83% said they would breastfeed their baby even if they were HIV positive, while 17 % said they would not.

These findings are in line with those found in a study done by Worku (2006) in Ethiopia where 92% of the respondents accepted to continue breastfeeding despite their HIV positive status mentioning the use of antiretroviral drugs as a means of reducing MTCT. This suggests that knowledge about PMTCT plays a critical role in somebody's decision making process (etd.aau.edu.et/dspace/bitstream/.../637/1/GETACHEW%20WORHU.pdf, viewed on 02/05/2013)

Staff at KUC in an interview said breastfeeding without a question was the best way to feed a baby but unfortunately breastfeeding could also transmit HIV. If no antiretroviral drugs were being taken, breastfeeding for two or more years could double the risk of the baby becoming infected to around 40 percent. They said breast milk provided all of the nutrients needed during the first few months of life, and it also contained agents that helped to protect against common childhood illnesses such as diarrhoea and respiratory infections.

Findings from the 2010 WHO infant guidelines currently being used at all clinics in Zambia revealed that for HIV positive women in low and middle income countries like Zambia, where there was little access to clean water, sanitation and health services, breastfeeding was the only

way of reducing the risks of diarrhoeal diseases and even the death of the baby. So as most HIV positive women in these countries cannot hygienically make formula feed for their infants, breastfeeding is the only realistic option available. , 'HIV and Infant Feeding: Revised Principles and Recommendations. Rapid Advice'

However, these findings are contrary to those from high-income countries like the UK where all HIV positive mothers have been told to avoid breastfeeding altogether because the risk of HIV transmission far outweighed the risks associated with replacement feeding. Replacement sometimes known as formula feeding was the only infant feeding method that did not expose an infant to HIV and in regions of the world where clean water and facilities were available; it is usually promoted as the only option ("HIV/AIDS, Infant Feeding, and Human Rights," 2005, pp.391-424).

Findings in a study done in South Africa by the International AIDS Society-USA, "Perspective Prevention of Mother-to-Child Transmission of HIV in Africa", (2010, p.31), it was concluded that the transmission rate of the virus depends on how long the infant is breast fed. Replacement feeding was considered the best option for HIV exposed infants. From the study, it was realized that those children who were fed on breast milk substitutes were all tested negative.

According to the latest (2010) protocol guidelines produced by the World Health, it is recommended that in order to reduce the risk of the baby becoming infected, mothers, or their infant(s), are advised to take a course of antiretroviral drugs throughout the breastfeeding period. While both mother and infant will take a course of antiretroviral drugs, who takes the longer course of ARVs, is a decision for the national body but either option has a very high success rate. Mothers are also advised to exclusively breastfeed their infants for 6 months and thereafter, introduce other food substances while continuing to breastfeed for up to a year (2010 WHO infant guideline).

"Mothers known to be HIV-infected should exclusively breastfeed their infants for the first 6 months of life, introducing appropriate complementary foods thereafter, and continue breastfeeding for the first 12 months of life" ("Effect of breastfeeding on infant and child mortality due to infectious diseases in less developed countries: a pooled analysis, 2000, February 5th").

Findings are that when antiretrovirals are taken through the pregnancy and breastfeeding stage, there is a greatly reduced HIV infection rate. But there must be 100 percent adherence to taking the drugs correctly, otherwise there is a risk that the baby will become infected with HIV or resistant to the medication. There needs to be good support for mothers to help them adhere to an extended drug regimen as well as keeping to 6 months of exclusive breastfeeding.

In countries where it is not possible for HIV positive women to access a regular supply of antiretroviral drugs, it is recommended that in general they follow the 2006 WHO recommendations. When ARVs are not immediately available, the recommendations included in the 2006 HIV and Infant Feeding Update still provide useful guidance for mothers and health workers (Guidelines on HIV and infant feeding 2010: principles and recommendations for infant feeding in the context of HIV and a summary of evidence).

Many HIV positive women will not be able to obtain an extended course of ARV drugs that includes both the period when they are pregnant and the breastfeeding period. In 2010 less than half of pregnant women living with HIV received the most effective regimens for PMTCT, with a further 11 percent receiving only single-dose nevirapine. So many women will still face a dilemma about whether, and in exactly what circumstances, they should breastfeed.

According to the responses given from the survey questionnaire in table 5.21 above, most of the respondents (80%) agreed to continue breastfeeding their babies despite their positive status. However, despite the clinically proven/given safe period of breastfeeding up to 6 months, most of the mothers attending antenatal and under five clinics said that they had to continue breastfeeding for more than 6 months as they feared that their child could have malnutrition as they could not afford supplementary feeds for their babies especially within 6 months of age. However, breastfeeding for more than the given period of 6 months means that even those children who had initial negative results could later become HIV positive during the follow up results of HIV test especially after a year or so.

About 20 % of the respondents in the survey questionnaire said they would not breastfeed their babies if they were HIV positive because they doubted the efficacy of ARVs since it is a proven fact that they do not cure HIV instead they just suppress the effectiveness of the virus. They said breastfeeding could still expose children to HIV despite their mothers taking ARV's since most

of them preferred breast milk compared to supplementary feeding. Some stated that some babies could be HIV negative just by chance as it had been seen in a lot of children whose mothers did not take ARVs despite being HIV positive.

During the Focus Group Discussions at the clinic, most of the participants who agreed to breastfeed alluded to the success of PMTCT which had direct benefits on the health status of children born from HIV positive mothers. They confirmed to have seen some positive outcome from mothers who took ARVs during pregnancy and their children living healthy lives. One of the participants during the group discussion had this to say:

Some of the women I know knowingly breastfeed their babies increasing the chances of transmitting HIV to their babies from their milk because they had no choice but breastfeed mainly due to economic reasons as they could not afford supplementary foods (Female participant).

Another participant had this to say:

Government should try to provide infant milk and supplementary foods for HIV exposed babies so that breastfeeding could be avoided as it is one of the factors to HIV transmission.

Other participants said if one was not breastfeeding, then they were perceived to be positive because everyone knew the benefits of breastfeeding and how good it is for an infant hence the only logical explanation would be that the mother was infected by HIV hence would not want to pass it on to their child. Another participant from the group discussion had this to say:

If a mother is not breastfeeding, then they do not care for the health of their child and that they have no knowledge of PMTCT and the benefits it has nor do they know much about the goodness of breastfeeding.

Most of the participants said women who do not breastfeed are stigmatized because it is at that point that people from the community get to speculate about someone's status despite them looking pregnant since some positive women opt not to breastfeed their babies. People wonder why one would prefer replacement feeding looking at the benefits breast milk has. A male participant had this to say:

I would prefer my wife did not breastfeed our child if she were HIV positive because of the chances of transmitting the virus through breast milk.

Findings in an interview with midwives at KUC reveal that in the new ARV course for children, the mother should ensure that the child took nevirapine (antiretroviral drug) during the whole period of breastfeeding and one week after breastfeeding. This new change is indicated in the 2010 National Protocol Guidelines of Zambia and was introduced in 2011 so as to make PMTCT more effective.

Previously it was recommended in the 2006 guidelines that the mother would give nevirapine(NVP) syrup to their children for only 6 months whether the mother was still breastfeeding or not. The recommended period for breastfeeding for HIV positive mothers according to the 2010 protocol guidelines is 1 year. This change was introduced because it was discovered at national level that most of the exposed children were dying of malnutrition instead of AIDS because of poor nutrition. It was also discovered that mothers would continue breastfeeding their babies beyond the initial 6 months that were given due to fear of stigma from the community hence predisposing children through breast milk for HIV transmission. There is hope with these new changes on the prophylaxis (prevention) measures to reduce mother to child transmission for HIV further down (See appendix IV).

"Breastfeeding, which is essential for child survival had posed an enormous dilemma for mothers living with HIV. Now, WHO says mothers may safely breastfeed provided that they or their infants receive ARV drugs during the breastfeeding period. This has been shown to give infants the best chance to be protected from HIV transmission in settings where breastfeeding is the best option" (Guidelines on HIV and infant feeding 2010: principles and recommendations for infant feeding in the context of HIV and a summary of evidence).

Findings indicate that the longer an HIV positive mother breastfed, the more likely she was to infect her baby but this risk has to be weighed against the benefits of breastfeeding. Before interventions were introduced it was necessary to rapidly wean so that the baby was not exposed to mixed feeding for too long.

For this reason WHO, in their 2006 guidelines, recommended that: “breastfeeding should be discontinued as soon as feasible, taking into account local circumstances, the individual woman’s situation and the risks of replacement feeding (including infections other than HIV and malnutrition)”.

Due to the high risk of diarrhoea among infants and the benefit of ARVs, women were advised under the 2010 recommendations to gradually wean to reduce stress to infants and avoid mortality. Rapid weaning can also cause an increase in HIV transmission. By controlling the duration of weaning and allowing ARVs to continue 1 week after breastfeeding has finished, transmission and infant mortality and morbidity are reduced.

5.2.3.1 Society’s perceptions of women who do not breastfeed their children

Midwives who were interviewed at KUC said if an HIV positive mother is breastfeeding, she will be advised to exclusively breastfeed for 6 months that is to feed only breast milk and nothing else. Breast milk provides all of the fluids and nutrients that a young baby requires, so exclusive breastfeeding meant that even water could and should be avoided.

The midwives said it was not easy to encourage mothers to practice exclusive breastfeeding because in many societies, especially in Africa, it was normal for a baby to be given water, teas, porridge or other foods as well as breast milk, even during the first few weeks of life. In addition, many women were concerned that their breast milk was not sufficient for their infant, because they were malnourished.

A mother may decide to breastfeed exclusively, but may start giving her infant additional fluids because she does not believe she has enough breast milk. There can also be issues of stigma and pressure from family.

When neither infant nor mother were taking an extended course of ARVs, they would be made aware of the dangers of mixed feeding. They would also be shown the correct technique for suckling, so as to minimize the likelihood of breast disorders, and would be enabled to seek help should any problems occur, such as mastitis which would lead to increased HIV transmission.

HIV has been isolated in both the free and cellular portions of breast milk. There is a 15% additional risk of infection and there is a cumulative risk associated with the duration of breastfeeding. The longer the period of breastfeeding, the higher the risk of contracting the virus. This accounts for transmission in around 0%-20% of HIV positive women depending on whether they breastfeed and the duration of breastfeeding. In addition, if primary HIV infection is acquired during the period of breastfeeding, transmission of infection to the baby can be as high as 30% due to the fact that the viral load in the mothers is very high in early infection. Optimal infant feeding practices as safe sex for mothers reduces transmission risk.

Short course ARV prophylaxis had reduced HIV transmission by 40-70%. The impact is greater (closer to 70%) when breastfeeding is not practiced. This means that the transmission risk of 30-40% without interventions is reduced even further. The rates of transmission in industrialized countries, where HIV infected women receive highly active antiretroviral therapy (HAART) and not breastfeed, and where elective caesarean sections are routinely performed for HIV infected women, the rate of HIV transmission has been reduced to about 2%.

In Africa, many women's access to information about breastfeeding and access to HAART and elective caesarean section may be limited. However, some African countries, including Zambia are now implementing strategies to reduce Mother to Child Transmission of HIV including short course ARV therapy. With these interventions, transmission rates have been noted to be reducing.

Some participants from the group discussions pointed out that most of the women in the community had to deal with a lot of challenges like stigma from other members of the community. The issue of stigma from the explanation given failed to confirm if they had heard or seen any person pointing fingers at someone who had stopped breastfeeding because they were HIV positive. It appeared to be self stigmatization.

Replacement feeding was the only 100 percent effective way to prevent mother-to-child transmission of HIV after birth, but the risk of infant mortality from other illnesses such as diarrhoea must be taken into account.

Many women/couples prepare to try out formula food after receiving counselling on the possibilities of breast milk infecting the infant after birth and information on formula feeds. But the problem crops up when the woman is back home with the extended family who are not aware of the HIV status of the mother or the couple. (Midwife at KUC)

Breastfeeding was the norm in most cultures, and was generally encouraged by health workers. By choosing not to breastfeed, a mother risked revealing that she was HIV positive, and becoming a target for stigma and discrimination. Women would however be urged during antenatal sessions to cope with this problem and resist pressure from friends and relatives to breastfeed.

Table 26: Impact of PMTCT services on the community

Response	Frequency	Percentage
Yes	111	92.5
No	7	5.8
Missing	2	1.6
Total	120	100

The majority of the respondents 92.5% said PMTCT services reduced chances of infection to the unborn baby while 5.8% said it does not reduce the chance of infection. However, 2 respondents representing 1.6% did not give any response. The findings in table 26 are in line with a study by Aka-Dago-Akribi, et al., (1995, p.20) in Cote d'Ivoire, some women would want to become pregnant precisely to avoid the stigma associated with childlessness, predicated not only on social expectations that women should become mothers but also on the ways in which avoiding pregnancy might be interpreted as a statement of being HIV-positive.

An interview with midwives at KUC revealed that providing women with appropriate information about what their labour and delivery experiences could help them make decisions and promote a positive birth experience. Pregnant HIV positive women had unique education needs during the perinatal period. HIV positive women needed information regarding the differences in recommended care they should expect to experience both for themselves and their

newborn. Differences in recommended care were related to minimizing transmission of the HIV virus.

The midwives stated that HIV-positive women had unique needs during the perinatal period. These women included those who were aware of their HIV status prior to pregnancy and those who discovered their HIV status during pregnancy. While HIV testing during pregnancy was not mandatory, the standard of care was to routinely offer women HIV testing during the prenatal period.

Most of the staff interviewed alluded to the success of the community based Action groups called Safe Motherhood Action Groups (SMAGs) in other districts in the Northern province like Lubushi, Mpulungu, Luwingu and Mungwi which were introduced by the ZPTC to play a role in Maternal Child Health like conducting door to door campaigns in their respective communities.

The SMAGs comprised of community volunteers who were also trained counsellors who received training from professional health practitioners.

The activities that were conducted included: family planning, male involvement, antenatal services, and encouraging women to deliver at the hospital.

To get a better understanding of how SMAGs carried out their community sensitization, the researcher undertook a journey to Lubushi which is 90 Kilometers from Kasama along the Kasama-Luwingu road. To have an insight of how activities were conducted, the researcher conducted FGD with the locals who were accompanied by their village headman and also had an in-depth interview with the sister-in-charge at Lubushi clinic.

Findings revealed that each community was subdivided into areas known as zones and there were currently 14 Zones in Lubushi. The village headman in every village was involved in all the activities done by the SMAGs. Each village had 10 SMAG members who were responsible for teaching the community members about the importance of couple testing, the benefits of giving birth at the clinic leading to less maternal/child deaths, and the best nutrition for expectant mothers and infants on replacement feeding. The SMAGs also educated the members of the community about locally available foods that could be of nutritional value.

Members of the SMAG during the FGD held at the clinic gave an account of how SMAGs conducted their operations. The SMAGs were responsible for counting expectant mothers and to ensure that all expectant mothers came with their husbands for all antenatal checkups. To ensure effective service delivery all zones were given bicycles donated by CHAZ to ensure that all planned activities were carried out accordingly. CHAZ through the ZPTC donated bicycle ambulances called ZAMBIKE where 10 members in each zone known as the Main SMAGs would use 1 bicycle. The sub SMAG which comprised of 9 members conducted door to door counselling and checked on the expectant mothers. The ZAMBIKES have carts attached to them that served as ambulances to ferry expectant mothers to the clinics or hospitals.



Women ferrying an expectant woman to the clinic using the ZAM ambulance

The SMAGs from each zone would meet on the 27th of every month to; count the number of home births, the number of female and male children born and the number of abortions.

Different zones would then meet on a day agreed to compile and tally the statistics then one report would be compiled. A meeting is then arranged with the village headman by the SMAG members to discuss the findings.

One of the participants during the focus group discussion (FGD) had this to say:

I would be comfortable to have another child regardless of my status because there are now medicines that prevent transmission



From left to right , Sister-in-charge at Lubushi Clinic Ms Edna Nazanda, the researcher and the village headman Mr. Ivo Chitalu during a focus group discussion.



Community members during a Focus group discussion at Lubushi clinic

Findings in an interview with the sister in-charge at Lubushi Clinic revealed that the number of positive mothers attending antenatal clinic at Lubushi clinic had gone up since the introduction of SMAGs who have proved to be very effective in disseminating information on PMTCT. The Sister in charge said that the number of deaths had reduced and in an event of death, investigations were promptly done to find out the causes with most of them being caused by self denial and lack of adherence to the ART treatment by positive expectant mothers. All the deaths that occurred were reported to the district health offices for compilation of statistics on maternal mortality.

With regard to family planning, the sister-in charge said condoms were proving to be very effective in the prevention of transmitting STI. She said it was easier for couples to accept the use of condoms if they were counselled and tested together. Use of condoms was being adhered to and there was acceptance by the community members. Condoms were placed in zones and were given to 3 or 4 SMAG members who helped to distribute and sometimes sold then in grocery stores in the area.

Lubushi clinic unlike other clinics did not distribute condoms as this was against the doctrines of the Catholic Church.

The SMAGs conducted various activities which included encouraging to start antenatal care as early as 16 weeks (4 months) and to go for early booking so as to have any diseases detected at an early stage. The women would also be tested for HIV, screened for STI's and Blood group/level testing. The SMAGs would also advise to visit the hospital when they had fever so that they would get a checkup, use mosquito nets, to clean their surroundings and to finish the dosage as prescribed by the medical personnel at the hospital.

These community volunteers would offer services through outreach. The volunteers were trained counsellors who would go round in the community sensitizing the people on the importance of giving birth at the clinic and the benefits of adherence to ART treatment for positive mothers/couples. The counsellors apart from receiving training from professional health practitioners were also empowered by way of giving them bicycles to make it easier for them to go around the communities. Since most of the counsellors were volunteers, findings reveal that the level of peer educators had gone down because of lack of incentives. The counsellors would also encourage couples to attend antenatal sessions together where they would undergo counselling and testing. The couples were counselled on acceptance should they be tested positive.

Women during antenatal were also tested for HIV and Syphilis so as to prevent any harm/infection to the unborn baby. All antenatal talks included a topic on the importance of Male involvement as it made it easier for women to adhere to the medical advice given when both partners were involved at the time of counseling and lessons given.

5.3. Summary

This section looked at the presentation, interpretation and discussion of research findings of the data collected. Analysis was done according to the survey questionnaires, the focus group discussions, the in-depth interviews as well as using the observation method. Tables, charts and figures were used to give an illustration of the information that was collected.

CHAPTER 6

CONCLUSION AND RECOMMENDATIONS

6.1. Conclusion

Since the Zambian family society strongly supports childbearing, many couples and individuals within marriage may find it hard to resist the demand of the family and its extensions regarding childbearing. The desire to have children is normal and even those who are single and/or widowed would desire that they have their own children for both emotional as well as cultural reasons. As a result of the strong urge to bear children, people may engage in unprotected sex regardless of theirs' or their partner's HIV status , hence putting their partners and their unborn children at risk of HIV infection. Ultimately this may worsen the HIV/AIDS situation in Africa which is already overloaded by the disease and insufficient resources for continued ART.

Initially, before the introduction of ARVs and PMTCT, people were not for the idea of having children once tested HIV positive. But now, despite being positive, they still want to bear children due to the presence of ARVs and PMTCT. However, they still would wish to limit the number of children once tested HIV positive despite the presence of ARVs and PMTCT (Refer to table 24 on page 91).

Although this research indicated that some women have children even after HIV diagnosis, very little is known about their desires to have children. The majority of studies have examined childbearing and women's choice to continue a pregnancy, therefore, providing only limited information about fertility desires and intentions.

Given the focus and efficacy of the SMAGs that were visited in Lubushi district during the research, the assessment was that the programme is making good progress in supporting MNH issues in the area but will require the involvement of the whole community to reach its goal. However, it might not be possible to engage the whole community on HIV and AIDS awareness in order to address issues of HIV and AIDS testing and ANC attendance. It is therefore the duty of the District Health Management Team (DHMT) to link up with agencies such as those focusing on this area such as the SMAGs. The SMAGs are involved in sensitization for

institutional delivery and ANC and are also promoting male involvement. The community group discussion which is central to the development of community MNH systems will provide a good opportunity to draw out men's participation which is very important to the success of programmes such as the PMTCT.

Since the importance of communication in development has since moved from a focus of information dissemination to one on community participation, it is important that every community including the New town and Central town communities consider forming community based organizations like the SMAGs that would focus on MCH. It is important that there is conscious and active participation of the intended beneficiaries at every stage of the development process thus the 5% target for Zambia which is the goal for PMTCT programme by 2015 would only be reached if the people themselves get actively engaged in spearheading community based programmes that would ensure that information about PMTCT reaches everyone as people generally relate and understand messages better if it is coming from those among them.

Therefore government through the DMHT should ensure that more Community Based Organizations (CBOs) are trained so as to ensure that effective campaigns are carried out hence supplementing the efforts of the Ministry of Health. The Traditional Birth Attendants (TBAs) would conduct door to door campaigns hence, are able to track down defaulters, encourage and stress the importance of male involvement, identify pregnant women and advise expectant mothers on the importance of testing since not everyone has access to television and radio to access this information. Information on how to keep healthy if found positive is given as well as information on PMTCT.

Since people are more receptive to receive information from someone they can relate with, it is important that the DHMT involve and train more volunteers to help implement some of the programmes regarding PMTCT that would otherwise influence childbearing intentions of those having doubts due to their HIV positive status. Information can thus be shared during gatherings such as church meetings, women's clubs and other community gatherings. In the long run, those that were not sure about their childbearing intentions could make up their minds whether or not to bear children given the information available.

6.2. Recommendations

- Even though results at Kasama Urban Clinic indicate that PMTCT services have had a huge impact in influencing childbearing intentions of women despite their positive status, the results indicated did not however reach anywhere near the 5% target for Zambia which is the goal for PMTCT programme by 2015. It is therefore recommended that the Zambian government allocate more funds to the programme. This would in turn influence non-governmental organizations to invest more to the PMTCT programme.
- Since PMTCT is a fairly new programme, some administrators may not see the urgency of scaling up efforts of implementing the programme in most rural health centres because it involves a lot of aspects like counselling and testing examinations for liver function to measure CD4 count, full blood count and the provision of ARVs especially to pregnant women who may develop some side effects or poor health status. It is recommended that transport should be provided to ferry specimen blood samples to the examination centers from the peripheral clinics in the rural areas so that those in the remote areas would access the service within the shortest period of time so that women contemplating childbearing would be able to make the right decision based on the results.
- Each province should at least have a centre for examination of dry blood spot (DBS) blood specimens for babies who are less than 1 year old. This should be so because it takes long for PMTCT clients to receive feedback and sometimes the cases of results not being received by clients have been recorded, though on very rare occasions. The DBS specimens are only examined in Lusaka and Ndola for the specimen of all the clients in the country. If scaling up was done to ensure that equipment and personnel are increased, it could be quicker and getting results would be efficient.
- Prolonged breastfeeding gives prolonged chances of exposure to HIV especially from breast milk which result into a child testing HIV positive later despite being born HIV negative with initial HIV test results showing negative but only to show HIV positive later due to breastfeeding. It is, therefore, recommended that government allocated more funds to the health sector so as to help provide supplementary feed for babies that have not been exposed

to HIV since a lot of families could not afford to buy such feeds. This would help reduce the probability of infection as well as eliminate the chances of children having malnutrition.

- There is need to increase resource distribution to be allocated to the programme to ensure that radio programmes are put in place so that the communities could listen to the usefulness of PMTCT. This will allow more mothers to register for antenatal clinic as early as 12 months of pregnancy and that at 14 weeks they start taking ARVs, for those who are eligible for starting PMTCT. Increased resource allocation will improve monitoring and evaluation. Training of more health workers, provision of laboratory equipment, reagents and involving the community are really cardinal to ensure that the results are reached to a minimum percentage of less than 5% recommended for Zambia in the National Protocol Guidelines of 2010.
- Close supervision from the senior officers at the district health office is recommended so as to help reduce any gaps in the PMTCT programme. Monitoring and evaluation from the senior District Health Offices is needed to ensure that the gaps are eliminated. DBS results from the number of HIV positive mothers and the numbers of children were not satisfactory as there were a lot of gaps. According to table 15, 337 women tested HIV positive in 2011 but only 149 children were found to be recorded in the registers according to table 20, in 2012, 381 women were tested positive for HIV as evidenced in table 14, but only 165 children were registered as indicated in table 21.
- It is recommended that community based healthcare providers ought to continue to get involved in the programme so that there is understanding in the communities and to ensure that there is help in health centres because of the shortage of health workers to follow up defaulters of treatment, counselling and testing, sensitization of the community on the importance of HIV care, record keeping and data entry at both facility and community level and many more activities that they could be involved in.
- It is recommended that a comprehensive tracing mechanism for tracking children who had initial DBS tests should be developed to assist in keeping physical addresses, including mobile phone numbers so that follow ups are done as stipulated in the National Protocol

guidelines. This would help a lot to know the gaps or strengths that could ensure that the PMTCT programme is done with exact records for future research purposes,

6.3. Recommendations for future research

- Given that precise considerations of HIV positive women desiring pregnancy is tied to the stigma and discrimination from their families, communities or health system which would in turn influence their access to ART, it is important that upcoming research should look at the ways in which stigma and discrimination related to all aspects of pregnancy intentions may be alleviated by the availability and accessibility of ART.
- Law criminalizing the spread of HIV and other laws or penalties on the eagerness of HIV positive women to become pregnant or carry their pregnancies to term is a significant area of health investigation. Consideration should hence, be drawn to the human rights violations and possible negative health effects of such laws, but further research in this area is needed.
- Studies have shown that as the health status of HIV positive women improves in response to treatment, they may go back to the level of sexual activity practiced before HIV diagnosis. Like for HIV negative women, this may not point to a desire to become pregnant or for more children, and it is for that reason key from a research point of view to appreciate how some reasons to keep away from pregnancy relate in particular to HIV status and some do not.

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Appendices

Appendix I: Structured Questionnaire for Survey Respondents



THE UNIVERSITY OF ZAMBIA

SCHOOL OF HUMANITIES AND SOCIAL SCIENCES

DEPARTMENT OF MASS COMMUNICATION

Topic:

***COMMUNICATION AND CHANGING ATTITUDES AND PERCEPTIONS TOWARDS CHILDBEARING
FOLLOWING THE ADVENT OF HIV AND AIDS IN ZAMBIA***

Dear Respondent,

You have been randomly selected to help with information on how attitudes and perceptions have changed towards childbearing following the advent of HIV and AIDS, and the communication strategies available to address the situation in Kasama District. This information is required as part of an academic research exercise and will by no means be used against you. The information which will be provided will be kept confidential. Your cooperation will be highly appreciated.

INSTRUCTIONS

Please read all questions carefully and provide answers accordingly, indicate your answer by ticking [✓]. In case an explanation is needed, please use the provided space for short and clear answers.

DEMOGRAPHIC DATA

FOR EACH STATEMENT, PLEASE TICK, TRUE (T), FALSE (F), OR I DON'T KNOW

- | | |
|--|-----------------------|
| 1. Sex | 1. Male |
| | 2. Female |
| 2. How old were you on your last birthday? | 1. 14-19 years |
| | 2. 20-24 years |
| | 3. 25-29 years |
| | 4. 30-35 years |
| | 5. 35 years and above |
| 3. What is your marital status? | 1. Single |
| | 2. Separated |
| | 3. Married |
| | 4. Divorced |
| | 5. Widowed |
| 4. What is your religious affiliation? | 1. Adventist |
| | 2. Baptist |
| | 3. Catholic |
| | 4. Pentecostal |
| | 5. Jehovah's Witness |
| | 6. Other specify |
| 5. Do you have any children? | 1. Yes |
| | 2. No |

6. If answer to (4) was Yes, how many children do you have?

1. One
2. Two
3. Three
4. Four
5. Other, specify

7. Have you ever been to school?

1. Yes
2. No(Go to Question 8)

8. What is your highest educational qualification?

1. Primary
2. Secondary
3. College/University
4. None

9. What is your employment status?

1. Formal employment
2. Informal employment
3. Un-employed
4. Self employed

KNOWLEDGE ABOUT HIV AND AIDS

10. Are you aware of HIV and AIDS?

1. Yes
2. No

1. Is it true that all HIV positive pregnant women will give birth to HIV positive babies?

1. True
2. False
3. Don't know

1. True
2. False

KNOWLEDGE AND ATTITUDES TOWARDS CHILDBEARING

1. Yes
2. No

1. Yes
2. No
3. Don't know

1. Yes
2. No
3. Don't Know

1. Yes
2. No
3. Don't Know

1. Yes
2. No
3. Don't Know

PLEASE, INDICATE YOUR OPINION ON THE FOLLOWING STATEMENTS

1. Agree
2. Disagree
3. Do not know

1. Agree
2. Disagree
3. Do not know

1. Agree
2. Disagree
3. Do not know

1. Agree
1. Disagree
3. Do not know

1. Agree
2. Disagree
3. Do not know

1. Agree
2. Disagree
3. Do not know

24. HIV positive men who desire children will die early

1. Agree
2. Disagree
3. Do not know

25. In your view, do you think there is a relationship between HIV and having children?

1. Agree
2. Disagree
3. Do not know

26. Does being HIV positive cause people not to have children?

1. Agree
2. Disagree
3. Do not know

27. Does being HIV positive cause couples to limit their number of children

no matter their economic status?

1. Agree
2. Disagree
3. Do not know

28. Well to do HIV positive couples can have as many children as they wish, since
should they die early they will leave their children with their economic wealth.

1. Agree
2. Disagree
3. Do not know

29. HIV positive couples that are poor should limit their number of children, since
should they die early their children will live to suffer or become street children.

1. Agree
2. Disagree
3. Do not know

30. Give reasons to your answer above in 20 and

31. Do you know of a place or places where one can access information on PMTCT?

1. Yes
2. No

32. If answer to the above question is **Yes**, where is this place? _____

33. At the place(s) mentioned above, is PMTCT information accessed for free?

1. Yes
2. No
3. Don't know

34. If the answer to the above question is **No**, how much is one charged to access information on PMTCT? K _____

35. In your opinion is this amount affordable to most people?

1. Yes
2. No
3. Don't know

36. Do you agree with the findings that PMTCT reduces chances of HIV infection?

1. Yes
2. No

37. Give reasons for your answer above. _____

38. How are women who undergo PMTCT Counseling perceived by society when they do not breastfeed their new born babies?

THANK YOU FOR YOUR COOPERATION

Appendix II: Focus Group Discussion guide

1. Would you have children if you were HIV positive?
2. Would you encourage other couples to have children despite their HIV positive status?
3. Have you heard about PMTCT?
4. What are some of the sources of information on PMTCT that you know about?
5. Would you consider breastfeeding your baby if you were HIV positive?
6. Should and HIV positive woman breastfeed their baby?*(Probe for infant feeding options or exclusive breastfeeding)*
7. How does the community react to people who do not breastfeed their babies?

Appendix III: Interview guide

1. In your opinion, is couple counselling proving to be effective in influencing HIV positive couples to have children?
2. Do you offer the same kind of counselling to both HIV positive and negative women during antenatal visits (*probe for response from clients*)
3. What is the response of discordant couples towards childbearing?
4. How possible is it for HIV positive couples to have HIV negative babies?
5. How do pregnant women access information on PMTCT? (*Probe what challenges are faced by these mothers?*)
6. How effective has information on PMTCT been in influencing peoples childbearing prospects in the advent of HIV and AIDS? (*Probe whether they accept PMTCT services and those who do not accept. Probe why*)
7. How do you think the PMTCT programme can be improved to ensure that everyone accessing this service gets the desired outcome and is satisfied with the services? (*Probe for any planned solutions to improve on service delivery*)
8. Do you advise HIV positive couples to limit their number of children due to health reasons? (*Probe for response, do they utilize the services and are their partners informed about PMTCT?*)
9. Is it possible to have an HIV negative baby despite couples HIV positive status?(*Probe what measures have been put in place to avoid MTCT*)
10. Do you encourage HIV positive mothers to breastfeed their babies?(*Probe for options if breastfeeding is not advised*)
11. In your view, how so you think social pressures and stigma from the community impacted on the effectiveness of the PMTCT programme?(*Probe whether there are people specifically responsible for sensitizing te pubic about PMTCT*)

Appendix IV: 2006/ 2010 Infant Feeding Guidelines

2006 WHO Infant Feeding Guidelines	2010 WHO Infant Feeding Guidelines
1. Mother takes ARVs from 28th week of pregnancy until 1 week after labour, or for an indefinite amount of time if the mother is taking ARVs for their own health.	1. Mother takes ARVs from 14th week of pregnancy until 1 week after labour, or for an indefinite amount of time if the mother is taking ARVs for their own health.
2. Short ARV regimen during breastfeeding period for either mother and/or infant	2. Long ARV regimen during breastfeeding period for either mother and/or infant
3. Exclusive breastfeeding for 6 months	3. Exclusive breastfeeding for 6 months
4. Rapidly wean from breast milk	4. Gradually wean from breast milk
5. No mixed feeding	5. Mixed (complementary) feed after 6 months
6. Not recommended to breastfeed after 6 months	6. Recommended to breastfeed and mix feed in conjunction with ARVs