KNOWLEDGE, ATTITUDES AND PRACTICES (KAP) OF MIDWIVES TOWARD HIV/AIDS POSITIVE MOTHERS DELIVERING AT KENYATTA NATIONAL HOSPITAL, LABOUR WARD

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENT OF THE DEGREE OF MASTER OF SCIENCE IN NURSING (OBSTETRIC NURSING AND MIDWIFERY) OF THE UNIVERSITY OF NAIROBI

BY

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SUBMITTED NOVEMBER, 2011

DECLARATION

I certify that this thesis is my own original work and has not been presented for award of a degree at any other university.

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DEDICATION

This research is dedicated to my wife Romana, my daughter Atuwonekisye and my son Ernest.

They inspired me to the end.

Thanks very much to them.

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This work has been a long journey with a lot of inputs from many sources. The support from the supervisors, Dr. Oyieke, Dr. Omuga and Dr. Omoni is greatly appreciated. The invaluable input from Kenyatta National Hospital labour ward and midwives in particular and fellow colleagues who helped a lot in refining the research report are appreciated.

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May God continue bless all of you

Thank you all.

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ABBREVIATIONS

AIDS …… Acquired Immunity Deficiency Syndrome

ART ……. Antiretroviral Treatment

HCWs …….. Healthcare Workers

HIV ……..Human Immune – deficiency Virus

KAP .....Knowledge, Attitudes and Practices

KECHN ……... Kenya Enrolled Community Nurse

KEM …… Kenya Enrolled Midwife

KNH ……...…. Kenyatta National Hospital

KRCHN……... Kenya Registered Community Health Nurse

KRM …… Kenya Registered Midwife

PMTCT ..... Prevention of mother-to-child transmission of HIV

SPSS ……Statistical Package for Social Sciences

STIs ……..Sexual Transmission Infections

TPB …….Theory of Planned Behaviour

UNAIDS ……. Joint United Nations Programme on AIDS

UON …… University of Nairobi

WHO …… World Health Organization

OPERATIONAL DEFINITIONS

Attitude	It refers to the means and ways the midwives feel, look and think about HIV/AIDS and their opinion about taking care of mothers infected with HIV/AIDS as measured by structured attitude scale.
Counseling	Providing information to the mother during pregnancy, labour and postpartum, on family planning, nutrition, therapeuatic support and emotional support.
Delivery care services in labour ward	Implies on keeping the membranes intact for as long as possible unless medically indicated, avoidance of invasive procedures such as episiotomies and instrumental deliveries unless absolutely necessary.
Education	refers to the level of education of the participants and will be classified in 5 groups which are form four, form six, college, university and others
Infection control	Use of aseptic techniques in conducting deliveries
Knowledge	It refers to the information or correct responses obtained from the midwives to the knowledge items on HIV/AIDS as measured by semi - structured knowledge questionnaire.
Practice	It refers to safe handling and disposal of hospital waste and sharp, precautions while handling the blood and body fluids of patients, hand washing after each patient contact, use of personal protective equipments.

ABSTRACT

***Introduction*:** HIV infection in pregnant women has become the most significant public health problem worldwide. The largest source of infection is HIV transmission from infected mother-to-child. Scientific data now confirm that HIV can be transmitted from an infected mother to her child in utero, during delivery and through breastfeeding. Midwives have the ability to intervene to reduce the transmission of the virus to the baby. The purpose of this study was to assess the knowledge, attitudes and practices of midwives toward HIV/AIDS positive mothers delivering at Kenyatta National Hospital, labour ward.

Study design: The cross-sectional descriptive design was utilized to assess the knowledge, attitudes and practices of midwives toward HIV/AIDS positive mothers delivering at KNH, labour ward.

***Methods*:** Inclusion and exclusion criteria were used to determine the study population composed of 39 midwives. Data was collected using a self administered, pre-tested and semi-structured questionnaire. Ethical approval was obtained from the institutions and consent from participants. Information sought included respondents' demographic characteristics, HIV/ AIDS knowledge, attitude and institutional resources availability. Data was analyzed using Statistical Package for Social Sciences (SPSS) version 16 program. Both descriptive and inferential statistics analysis was performed. ANOVA and *t*-tests were also used. The study was conducted for a total period of 16 weeks from June to September 2011.

***Findings*:** The mean knowledge score was 15.97 (SD = 2.43) out of a maximum score of 23 representing moderately high level of HIV/ AIDS knowledge. Knowledge on antibody response to HIV infection and retroviral cause of HIV/AIDS was low. There was a statistically significant

association between knowledge among midwives and their midwifery roles (p = 0.018) Midwives' demographic characteristics, institutional factors and maternal factors did not show significant associations with knowledge, attitude and practice.

***Conclusions and recommendations*:** The study revealed that the midwives had adequate HIV/AIDS knowledge but, still had gaps in certain areas. In addition they showed a positive attitude. There is need for improved knowledge through structured educational intervention on the care of HIV/AIDS positive mothers.

CHAPTER ONE

1.0 INTRODUCTION

This chapter introduces the study. It represents the reasons why I felt it is important to assess the Knowledge, Attitudes and Practices (KAP) of midwives toward HIV/AIDS positive mothers delivering at Kenyatta National Hospital, labour ward.

HIV infection in pregnant women has become the most significant public health problem worldwide (WHO, 2010). The largest source of infection is HIV transmission from infected mother-to-child. Scientific data now confirm that HIV can be transmitted from an infected mother to her child intero, during delivery and through breastfeeding. Midwives have the ability to interven to reduce the transmission of the virus to the baby (Oyeyeni, 2008).

Midwives play a crucial role in ensuring that pregnant women in labour with HIV/AIDS get appropriate treatment and care during their pregnancy (Kermode *et al*, 2005). Nurses and midwives are the major providers of health care services in sub-Saharan Africa, particularly for maternity care (Gerein *et al*, 2006). Nurses and midwives are now being called upon to play a key role in the prevention of mother-to-child transmission (PMTCT) of HIV, along with their regular duties of providing maternal health services (Ehlers, 2006).

Human immunodeficiency virus (HIV) and acquired immune deficiency syndrome (AIDS) have emerged much tensions and anxieties among the public and healthcare providers. In reality, the fear of being infected at workplaces has led to irrational and discriminatory treatment of people living with HIV/AIDS. The consequence of such negative attitude is poor management of people with HIV/AIDS who need most care, treatment, and support (Kermode *et al*, 2005; Vithayachockitikhun, 2006).

1.1 BACKGROUND INFORMATION

Kenyatta National Hospital is situated about 3 kilometers from the Nairobi city centre along Ngong Road, it the largest hospital in the country which serves as a referral, teaching and research centre. It provides facilities for undergraduates, postgraduate and paramedics training. In additional it gives basic healthcare to the people of Nairobi and its surroundings.

Labour ward is located at Maternity wing on the first floor, operates as subunit of obstetric and gynaecology department of Kenyatta National Hospital. The labour ward has a total of 22 beds of which 20 are for the first stage of labour, 3 delivery suites and 2 acute rooms where obstetric emergency patients are managed. There are 2 theatres in labour ward, 2 incubators for premature newborns. According to Maternity Register, currently the unit handles over 800 deliveries per month, in which 40 (5%) are HIV/AIDS positive mothers.

In the labour ward the pregnant women are examined, fresh history and physical examination are done to all mothers. Urine is also tested for the presence of sugar, protein or ketones. All the information is recorded on a partogram. A partogram is a record of information on the progress of labour. Active management is advocated in labour ward, the components of active management include: strict diagnostic criteria for labour, amniotomy, early use of oxytocin and continuous labour monitoring with use of partograph. These measures are known to reduce the rate of caesarean sections and operative vaginal deliveries as well as prolonged labour and its complications. However, early amniotomy is now not routinely practiced since it has been shown not to have much effect on the duration of labour and as a measure to reduce vertical transmission of HIV.

1.2 PROBLEM STATEMENT

HIV/AIDS and its complications have generated much interest in delivery units. There has been an effort made to determine the mode of approach in delivery to prevent mother to child transmission. Stigmatization towards HIV positive patients by the general population has been widely documented. All this, and many related issues, finally end up in the care of the labour ward service providers who came in direct contact with such patients during their time of delivery. The Knowledge, attitudes and practices of these service providers towards the management of such patients in labour wards has not been established. Thus an effort is needed to do this at KNH labour ward; this being a national and referral hospital that receives many of these types of patients.

HIV infection in women is a problem of growing magnitude and concern worldwide. Midwives as primary care women's health care providers, must be fully informed about the scope of HIV infection in women in order to provide appropriate education and care to their patients, including the issues of perinatal and breast milk transmission (UNAIDS, 2010).

Knowledge, attitude and practice of midwives are the initial factors needed towards proper provision of appropriate health services to patients. This study has made effort to evaluate this and establish basic knowledge for further research.

1.3 RESEARCH QUESTION

What is the knowledge, attitudes and practice of Midwives towards HIV/AIDS positive mothers delivering at KNH labour ward?

1.4 MAIN OBJECTIVE

To assess the Knowledge, Attitude and Practices of midwives towards HIV/AIDS positive mothers delivering at KNH labour ward.

1.5 SPECIFIC OBJECTIVES

1. To examine the effect of demographic characteristics of midwives on their KAP towards HIV/AIDS positive mothers delivering at Kenyatta National Hospital, labour ward
2. To determine the influence of KAP on midwives roles towards HIV/AIDS positive mothers delivering at Kenyatta National Hospital, labour ward
3. To assess midwives' KAP and the influence of institutional factors towards HIV/AIDS positive mothers delivering at Kenyatta National Hospital, labour ward
4. To assess KAP of midwives and its influence on maternal factors towards HIV/AIDS positive mothers delivering at Kenyatta National Hospital, labour ward

1.6 KEY VARIABLES

Based on Theoretical model and objectives the following variables were identified:

1.6.1 Independent variables

- Demographic factors
- Midwives factors
- Institutional factors
- Maternal factors

1.6.2 Dependent variables

- Knowledge
- Attitude
- Practice

1.6.3 Outcome variables

- Positive KAP
- Negative KAP

1.7 THEORETICAL FRAMEWORK

Introduction

The Theory of Planned Behaviour (TPB) (Ajzen, 2001) was used to provide a conceptual framework for this study "assessing knowledge, attitudes and practices of midwives toward HIV/AIDS positive mothers delivering at Kenyatta National Hospital, labour ward".

According to Ajzen (2001) postulation there are three predictor variables that have an impact on a person's intent to perform a behavior. These include attitude, subjective norm and perceived behavioral control. Attitude as multidimensional construct is identified as the individual's feelings and assessment of whether the behavior will produce positive or negative consequences. Attitude also is influenced by an individual's beliefs (knowledge) concerning the behavior.

Thus, according to TPB, individuals are more likely to engage in a behavior if the action will assist in meeting the desired outcome, if the social group(s) with whom the individual is

associated with will be pleased by the action, and if the person has a sense of self-efficacy in performing the behavior. The intent to perform an action is the determinant of behavior (Ajzen, 2008).

According to Ajzen (2001), attitudes are described as beliefs which predispose the individual to respond in a preferential way. That is, attitudes are predisposition to react positively or negatively to phenomena, a person or thing. In this study the concern is midwives knowledge, attitudes and practices towards mothers with HIV/AIDS. Attitudes suggest that, there are three major components: cognitive, affective and behaviour components. The cognitive component involves what a person believes concerning the HIV/AIDS mothers. This may be true or not. The affective component is a feeling about attitudes towards an objective or a person which influences the evaluation and the behavioural component reflects the actual behaviour of an individual (Burn & Robert, 2000). In this modified model knowledge can be influenced by major confounding factors and thus relates directly or indirectly to attitude and practices which could also be subjected to the same influences. This is the basis for designing the framework for this study.

1.7.1 Theoretical framework drawn from theoretical statement

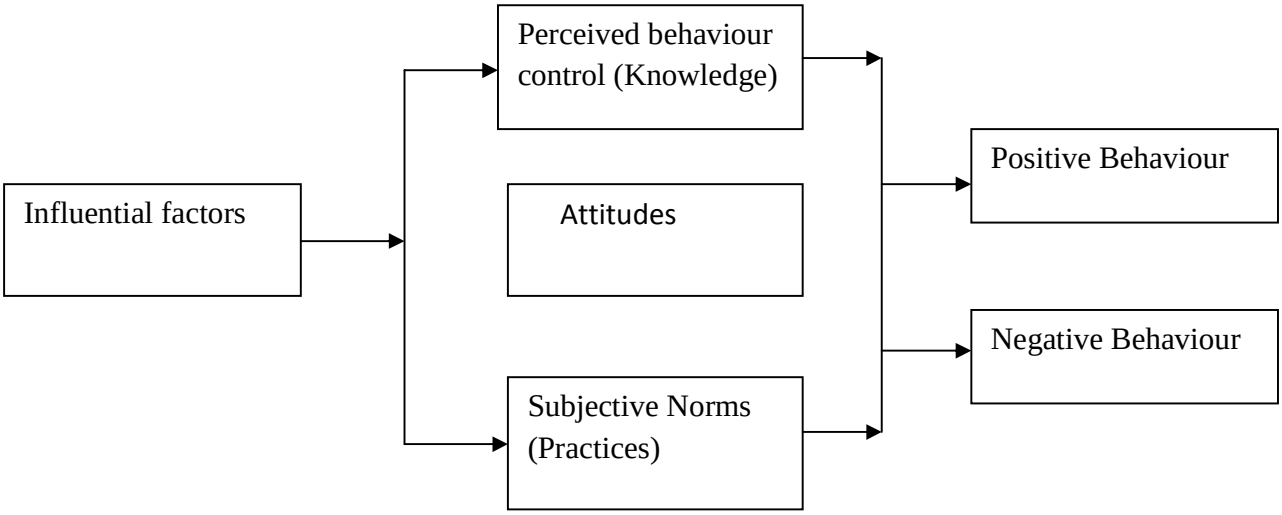

Figure 1.1: theoretical framework

This theoretical framework has been used to design the conceptual framework for the study. Influential factors are the variables reflected under independent variables. Behaviour patterns are represented by outcome variables which reflects on positive or negative KAP

1.8 CONCEPTUAL FRAMEWORK

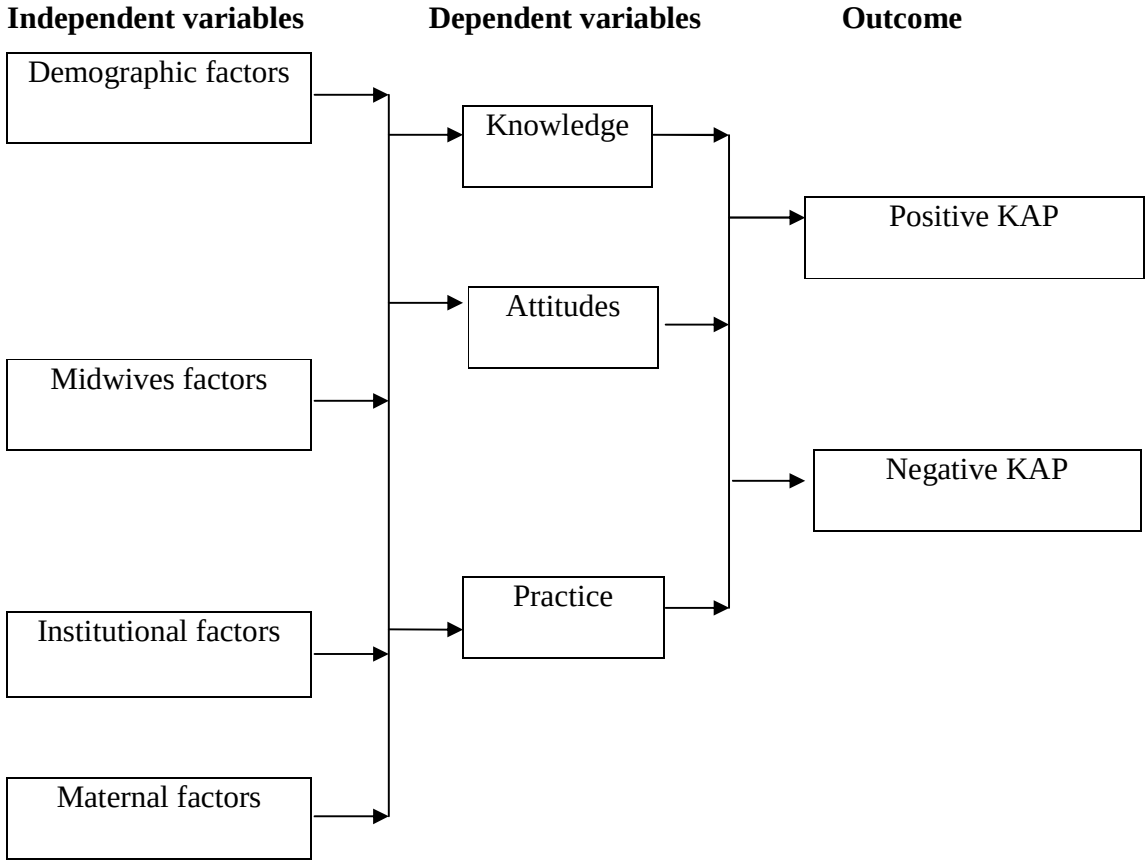

Figure 1.2: Conceptual Framework modified (Ajzen 2001)

From the conceptual framework, operational framework has been drawn to show the characteristics being studies under each major variable. These are concepts that was applied directly to the study subjects

1.9 OPERATIONAL FRAMEWORK

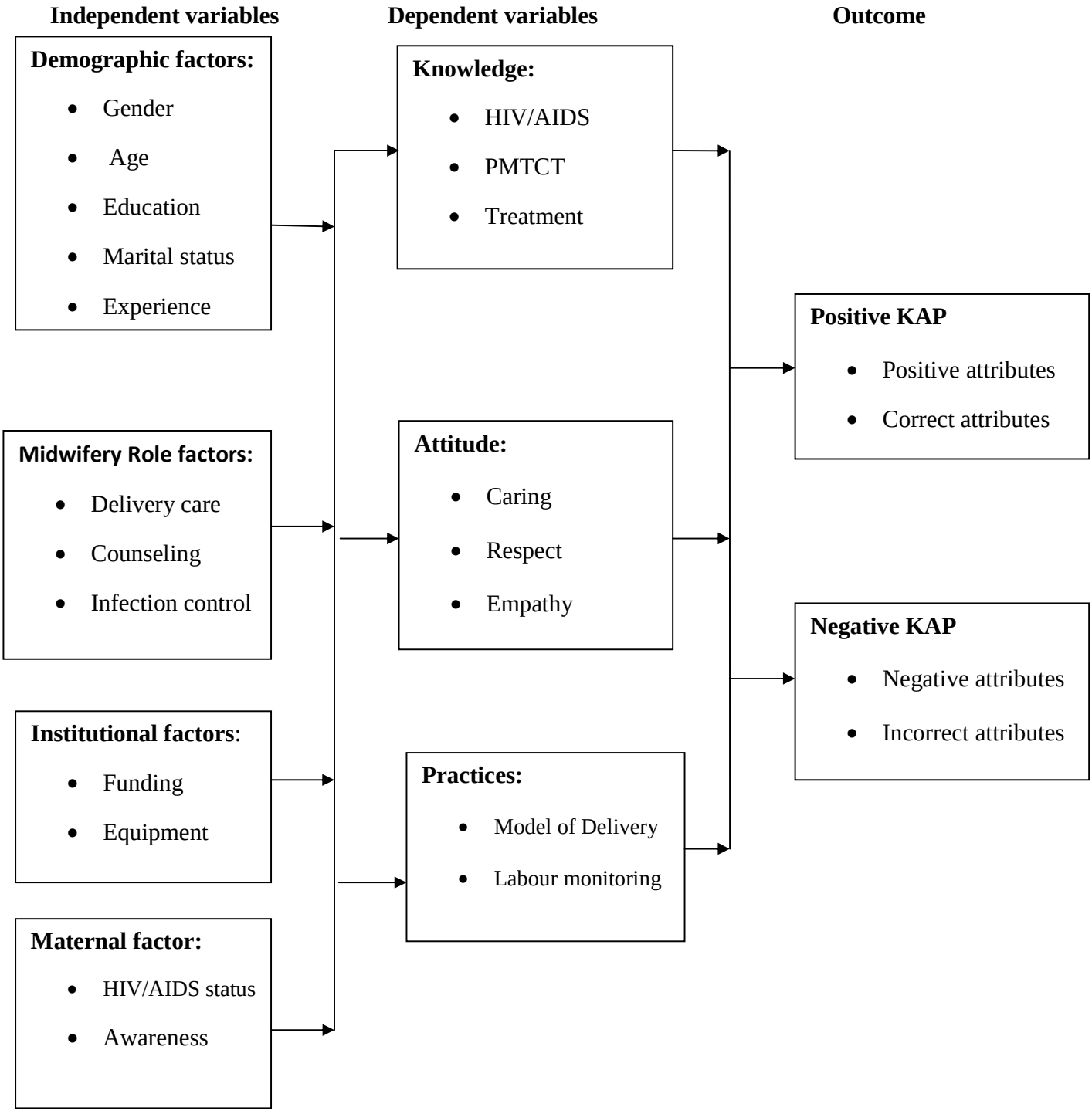

Figure 1.3: Operational Framework

1.10 STUDY JUSTIFICATION

HIV/AIDS positive mothers should not be discriminated or stigmatized in the hospital during delivering period. Discrimination in rendering delivery services to HIV/AIDS positive mothers are seen where there is denial of care. An HIV/AIDS positive mother can transmit virus to her baby during pregnancy, labour, delivery and through breastfeeding. Without proper practices during delivery and without treatment, around 15 – 30% of babies born to HIV positive women become infected with HIV during pregnancy and delivery (WHO, 2011).

Midwives requires a wide range of competencies and skills on the issues of HIV in pregnancy women, proper practices during their care and positive attitudes towards HIV/AIDS positive mothers delivering at Kenyatta National Hospital, labour ward.

Many conflicting study results have been reported about knowledge, attitudes and practices of health care providers toward patients with HIV/AIDS in health facilities. Some literatures indicated that; nurses/midwives with good knowledge and positive attitudes experience less stress when working with people with HIV/AIDS; there is direct correlation between knowledge and attitudes, that positive attitude have been correlated with a willingness to care for people with AIDS. (Barrick, 2008; Douglas, 2005). The Knowledge, attitudes and practices of these service providers towards the management of such patients in labour wards has not been established, hence the need for this study.

It is apparent from the literature that nurse who care for patients with AIDS require support, which can be in the form of informal peer support, specific support groups, family, friends and professional counselors (Stewart, 2009).

No similar study has been conducted at KNH, labour ward. Thus, research is needed to assess the midwives' knowledge, attitudes and practices toward HIV/AIDS positive mothers delivering at

KNH, labour ward, in order to instill the underlying knowledge, attitudes and practices that enable the midwives to be positive in her/his attention in caring for HIV/AIDS positive mothers delivering in the labour ward.

1.11 PURPOSE OF THE STUDY

The study aimed at assessing the midwives knowledge, attitude and practices towards HIV/AIDS positive mothers delivering at Kenyatta National Hospital labour ward. This will contribute to improved service delivery by promoting evidence based practice and service providers education.

1.12 EXPECTED BENEFITS

The study findings would establish data for nursing education and other health professionals to meet the midwives' needs effectively by: providing information about HIV/AIDS in pregnant women, changing the negative attitudes to positive attitudes toward HIV/AIDS positive mothers and to improve the quality of care to HIV/AIDS positive mothers.

1.13 STUDY ASSUMPTIONS

- The midwives' attitudes about the caring for HIV/AIDS positive mothers may be predicted by the midwives' knowledge about AIDS and available support to them
- The midwives would have some knowledge regarding the risk of HIV infection through occupational exposure and prevention of HIV/AIDS infection from the mother to the baby
- There would be some existing positive attitudes in caring for the HIV/AIDS positive mothers but discrimination behavour may exist among midwives at KNH labour ward.
- The midwives are at risk for HIV/AIDS through occupational exposure due to lack of support from the institutional. This may affect their knowledge, attitude and practice towards HIV/AIDS positive mothers.

1.14 Summary

Chapter one gives the orientation to the study includes the introduction to the study, formulation of the problem, purpose of the study, objectives of the study, theoretical framework, study justification, expected benefits and study assumptions.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 INTRODUCTION

This chapter review the literature related to this study. It includes the ideas and findings of other researchers on what is known about the research problem and what still needs to be researched. Literature in this study includes the global situation, the delivery services for HIV/AIDS positive mothers, PMTCT services for delivering HIV/AIDS positive mothers , knowledge of HIV/AIDS, attitudes towards HIV/AIDS positive mothers, practices of midwives related towards HIV/AIDS positive mothers and discrimination

Human immunodeficiency virus (HIV) and acquired immune deficiency syndrome (AIDS) have emerged much tensions and anxieties among the public and healthcare providers. In reality, the fear of being infected at workplaces has led to irrational and discriminatory treatment of people living with HIV/AIDS. Unfortunately this kind of perspective and practice exists in health professionals despite strong evidence that has revealed nonsexual contact with HIV-positive individuals and taking universal precautions while working with blood products of infected individuals are major concerns of the healthcare providers particularly laboratory technicians, general physicians, and nurses who spent much time with these patients. The consequence of such negative attitude is seen in poor management of people with HIV/AIDS who need most care, treatment, and support (Kermode, 2005).

2.2 Delivery services for HIV/AIDS positive mothers

The UNAIDS (2010) recommended the delivery and birth modality to the HIV-positive women, that, may have a Cesarean-section can be done at 38 weeks or have a vaginal birth. A cesarean is recommended for the women whose viral load at 36 weeks is unknown or more than 1000 copies/mL; and have not taken any antiviral drugs or only taken ZDV during their pregnancy; or who have not received any prenatal care prior to 36 weeks gestation.

A woman who is infected with HIV may consider having a vaginal birth if her viral load is less than 1000 copies/mL, is taking ZDV with or without other HIV medications and has been receiving prenatal care throughout her pregnancy, but the risk of mother-to-child HIV transmission is higher with a vaginal birth. Additionally, it is a good idea to avoid using any birthing instruments that may puncture the newborns skin and minimize the mixing of mothers' blood with child's as much as possible.

2.3 PMTCT services for delivering HIV/AIDS positive mother

The UNAIDS reported that, around 400,000 children under 15 became infected with HIV, mainly through mother-to-child transmission. About 90% of these MTCT infections occurred in Africa where AIDS is beginning to reverse decades of steady progress in child survival. In high income countries MTCT has been virtually eliminated through the effective voluntary testing and counselling, access to antiretroviral therapy, safe delivery practices, and the widespread availability and safe use of breast-milk substitutes (UNAIDS, 2010)

A recent study showed that the administration of zidovudine (AZT) during pregnancy, labour, delivery and to the new born reduced the risk of MTCT by 67%. This regimen has become

standard practice for HIV-positive women in most industrialized countries and many women are receiving a combination of ARV treatments. This long-course regimen is often not available for women in developing countries because of cost and lack of adequate infrastructure. However, there is a concerted effort to provide short term AZT to all HIV-positive pregnant women. Short course AZT is taken orally from 36 weeks of pregnancy through labour and delivery. This treatment does not prolong the life of the mother, but has been found to be effective in reducing Transmission of HIV to the infant (2010)

Nevirapine is a much cheaper antiviral drug than AZT, costing about $4 per mother and baby treated. Recent studies have shown it to be effective in reducing MTCT if a single dose is given to mothers just prior to delivery and to newborns immediately afterwards. In terms of both cost and infrastructure requirements Nevirapine offers a more optimistic and realistic alternative for ARV for developing countries. Many countries are in the process of developing guidelines and an effective infrastructure to support ARV. Because ARV treatments vary considerably throughout the world and are still in the experimental stages, nurses/midwives are encouraged to learn more about the ARV treatments and protocols available within their community and country (WHO, 2010)

About 60% of HIV transmission from mother to child is thought to occur around the time of labour and delivery. Several factors have been associated with an increased risk of MTCT at the time of labour and delivery (WHO, 2010). These include:

Vaginal deliveries are more likely to increase the risk of MTCT while elective Caesarian sections have been shown to reduce MTCT. However, the potential benefits have to be balanced against the risk to the mother. Higher rates of post operative death in HIV positive women have been

reported, especially from infective complications. In addition, elective Caesarian sections are not available to the vast majority of women worldwide.

Rupture of membranes for longer than 4 hours has been associated with an increased risk of transmission. Artificial rupture of membranes is practiced routinely in many countries. Membranes should not be ruptured artificially unless there is fetal distress, or abnormal progress in labour. Routine episiotomy is not recommended. This procedure should only be used where there are specific obstetric indications. Forceps deliveries and vacuum extractions do not necessarily require an episiotomy.

Approximately one third of infants who are infected through MTCT are infected through breast milk. Where alternatives such as replacement feeding exist, HIV positive mothers should avoid or limit breastfeeding their infants. For HIV-negative mothers, breastfeeding still remains the best option.

Where resources are limited, the option of using replacement feeding may be unavailable. Many communities do not have a safe water supply, have limited resources to provide sterile feeding equipment, and have no methods of refrigeration. Replacement feeding is also expensive and many families cannot afford this added expense. In addition, where breast feeding is the cultural norm, seeing a mother artificially feed her infant can lead people to suspect she has AIDS. One must also consider additional problems associated with gastro-intestinal infections, malnutrition, stigma and discrimination. Decisions about whether to breast feed or to provide replacement feeding must be made in light of the above considerations. If replacement feeding is an option, breast milk substitutes include: commercial infant formula, or home-prepared formulas which are made from animal milk, dried milk or evaporated milk with additional ingredients. Once the

decision has been made about whether or not to breast feed, then other considerations must be taken into account (UNAIDS, 2010)

2.4 WHO guidelines on delivery of HIV/AIDS positive mothers

	Pregnancy	Labour	After birth: Mother	After birth: infant
Recommendation A	AZT after 14 weeks (wk)	Single dose Nevirapine; AZT+3TC	AZT+3TC for 7 days	Daily NVP until 1 weeks after breast – feeding has finished
Recommendation B	Triple ARVS after 14 weeks	Triple ARVS	Triple ARVS until 1 wks breastfeeding has finished	6 wks of daily NVP

Table 2.1: Guideline for PMTCT drug regime (WHO, 2010)

2.5 Midwives knowledge of delivery care for HIV/AIDS positive mother

Midwives in Kenya are trained comprehensively at a diploma level as Registered Community Health Nurses (KRCHN). They work in different settings. According to the Nursing Council of Kenya Strategic Plan 2005 – 2010 (NCK, 2005) all nurses will have been upgraded to a diploma level by the year 2010 to improve their knowledge and skills and improve quality of care.

The irrational and often exaggerated fears associated with HIV/AIDS by nurses and midwives can be directly addressed through educational programmes based on sound medical, social and psychological knowledge. To be successful, such programmes must be sustained and supported over a period of time. Knowledge about HIV/AIDS is constantly expanding, and nurses and

caregivers must be continually updated through continuing education programmes and Fact Sheets. Thus they can take the important role of educating others. That is, they can advocate, not only for Universal Precautions but also for universal tolerance and knowledge about HIV/AIDS (Rahlenbeck, 2004).

Prevention strategies will continue to be compromised if fear, ignorance, intolerance and discrimination against HIV-infected persons persist. Nurses and midwives have a responsibility to help to “normalize” HIV; this will facilitate open dialogue about AIDS, modes of HIV transmission and prevention without the negative emotions and attitudes. Respect and compassion for others is a prerequisite for effective and dignified care. Looking inward to examine and challenge long-held beliefs, values, assumptions and attitudes will go a long way to providing compassionate and respectful care. Health care provided with knowledge and compassion, in a setting of dignity and respect, helps to provide comfort with less misery and isolation (Rahlenbeck, 2004).

The UNAIDS, (2010) reported that, the incidence of perinatal transmission varies from 13% and 48%, 13% to 32% for the developed world and 25% to 48% for developing countries. Transmission can take place antepartum, during delivery and postpartum by breastfeeding. Transmission during the first trimester may take place but current data suggest that a substantial proportion of perinatal HIV-1 transmissions take place rather late in pregnancy or during delivery. The apparent absence of viral genome from fetal tissue, presence of a normal immune system at birth, absence of neonatal morbidity and reports of differential viral transmission in twins are arguments in favour of late transmission. One of the greatest concerns for both women and their health care provider is the possibility that pregnancy may accelerate the onset of AIDS in mother. Pregnancy itself can be immunosuppressive and some investigators have hypothesized

that the cumulative immunosuppressive effect of HIV-1 infection and pregnancy may accelerate the course of HIV-1 infection in pregnant women.

Study by Grellier (2007), on midwives' knowledge of HIV virus and its implication for their attitude and practice revealed that, "though training may provide midwives with technical knowledge, it does not necessarily equip them to deal with many of the underlying issues, which in turn reflect on midwifery practice, It is important for practical knowledge to be placed within a broader context". On the other hand, a study carried out in Lagos State, Nigeria on attitudes of health care providers to persons living with HIV/AIDS by Adebajo, Bamgbala and Oyediran, revealed that "most of the respondents (96.3%) had moderate to good knowledge of HIV/AIDS but the attitude of the nurses towards people living with HIV/AIDS was poor"(Adebajo *et a*l, 2003). Also findings from a study carried out by Mbanga et al, (2001), to assess knowledge and practices of nurses with regards to HIV/AIDS revealed that 70.1% of the nurses who responded scored highly in the knowledge section compared to 50.5% in the attitude and practice section.

In the study of Knowledge, attitude and practice assessment of Health workers for HIV/AIDS in Sri Lanka by (Koji K., Yoshi O., Rossana A. *et al*., 2009) reported that, increasing the awareness of HIV/AIDS among Health workers would be valuable to minimize the risk of infection for keeping the nation's HIV prevalence at a minimum level. The workshop on HIV/AIDS conducted by an experienced NGO in July 2007 was effective in increasing the awareness and the knowledge of Health workers working in the southwestern part of Sri Lanka. Therefore, providing educational workshops organized by external professionals, such as local public health agencies for one to two hours or even for a half day would be one way to increase awareness on HIV/AIDS among health workers.

2.6 Attitude towards HIV/AIDS positive mothers delivering in labour wards

Currently HIV/AIDS high transmission rate has emerged much tensions and anxieties among the public and healthcare providers. In reality, the fear of being infected at workplaces has led to irrational and discriminatory treatment of people living with HIV/AIDS (Sivaram, 2004).

A cross sectional study conducted in Nigeria health care facilities aiming to characterize the nature and extent of discriminatory practices and attitudes in which fifty-four percent of the health-care professionals (550/1,021) were sampled from public tertiary care facilities indicated that, Nine percent of professionals reported refusing to care for an HIV/AIDS patient, and 9% indicated that they had refused an HIV/AIDS patient admission to a hospital. Fifty-nine percent agreed that people with HIV/AIDS should be on a separate ward, and 40% believed a person's HIV status could be determined by his or her appearance. Ninety-one percent agreed that staff and health-care professionals should be informed when a patient is HIV-positive so they can protect themselves. Forty percent believed that health-care professionals with HIV/AIDS should not be allowed to work in any area of health-care that requires patient contact. Twenty percent agreed that many with HIV/AIDS behaved immorally and deserve the disease. Basic materials needed for treatment and prevention of HIV were not adequately available. Twelve percent agreed that treatment of opportunistic infections in HIV/AIDS patient’s wastes resources, and 8% indicated that treating someone with HIV/AIDS is a waste of precious resources (Reis *et al* 2005).

Midwives and caregivers must examine their own beliefs, values, assumptions and attitudes toward HIV/AIDS. Recent documentation suggests that health care workers are some of the worst offenders in discriminating against, and refusing to care for people living with HIV (PLHA). Such behaviors are unacceptable. However, change will come about through examining

long-standing negative thoughts, feelings and behaviors. This can be done individually or with peer groups' support (Reis *et al*. 2005).

Humans with HIV suffer from discrimination all over the world. They often feel left out in society and may experience problems in their daily life. HIV infection should not undermine these peoples' right to food, housing, work, education and freedom from discrimination, and this should be followed and protected by governments around the world (Canadian HIV/AIDS legal network, 2006).

Many studies have documented nurses' attitudes and concerns regarding HIV/ AIDS, but little is known about Taiwanese nurses. We documented attitudes, concerns, gloving practices and practical HIV/ AIDS knowledge of 1090 nurses from one metropolitan hospital in Changhua City, Taiwan. The response rate was 80.9%. Both HIV and hepatitis contraction in the workplace was nurses' main concern. Two hundred and ten nurses (19.3%) were seriously considering leaving nursing because of fear of contracting HIV/ AIDS. Virtually all nurses considered it their right to be informed of the presence of HIV-positive patients in their direct work area and many believed that HIV testing of patients should be mandatory. Practical HIV/ AIDS knowledge was deficient. These Taiwanese nurses have concerns and fears that might be related to deficiencies in practical HIV/ AIDS knowledge. Continuous educational programmes are recommended to alleviate these nurses' attitudes and concerns regarding HIV/ AIDS (Juan, CW., Siebers, R. *et al*. 2004).

2.7 Practices of midwives related to delivery care in labour wards

Cultural, sexual, religious, and legal influences often make it difficult to freely discuss sexual practices, preferences, sexual desires, the number and type of sexual partners, and the use of

birth control. In addition there is often a “cloak of silence” related to sexual practices. Such subjects are often taboo and associated with embarrassment, shame, guilt and rejection. Midwives and other caregivers may also experience these feelings of embarrassment, shame, and guilt as they practice certain risk behaviours in their own personal lives (Reis *et al* 2005).

In some societies, the use of condoms is not sanctioned by the religious leaders, the cultural norms of silence regarding sexual practices, preferences and desires can be problematic. These sexual practices might include men having sex with men, sexual abuse, child abuse, and heterosexual intercourse. Thus many dimensions of culture challenge HIV/AIDS prevention and care. Moreover issues like fear of contracting HIV and becoming sick and dying from the disease. Nurses and midwives witness not only their patients, but also their friends and loved ones dying from AIDS, Nurses and midwives witness the fear, stigma, isolation, marginalization and discrimination that many PLHAs experience. Witnessing such attitudes leads some midwives to treat PLHAs in similar ways. Midwives who are infected with HIV may withhold this information from their colleagues for fear of discrimination, isolation and neglect. Many nurses and caregivers find it difficult to talk about sexuality, death, drug use, prejudices, morals and religious beliefs (Sivaram, 2004).

Because AIDS is a fatal illness, supportive care continues to be a crucial issue; this fact should also influence governments as they attempt to develop appropriate policies for addressing the special needs of HIV/AIDS positive patients within their health care systems (Vithayachockitikhun, 2006).

Supplies for infection prevention (universal precautions); Availability of supplies for preventing HIV infection among hospital staff and patients is essential, particularly for nursing or laboratory staff conducting HIV testing and maternity staff delivering pregnant women. Essential supplies

include clean gloves, sharps box, soap or other disinfectant, disposable needles and household bleach (FhI, 2009).

2.8 Summary of Literature Review

Extensively 37 literature review was cited to support my research, among them, WHO (2010) and Reis *et al* (2005) was widely used in my study to mention a few. Thus, literature review confirms that midwives who are knowledgeable about HIV/AIDS have more positive attitudes toward caring the HIV/AIDS positive mothers. Empowering the midwives will improve women's health and ultimately reduce discrimination behaviour towards HIV/AIDS positive mothers.

CHAPTER THREE

3.0 METHODOLOGY

3.1 Introduction

In this chapter, the process and methods used to conduct the study are explained. The following was covered: the procedure used in selecting the participants, study design, setting of the study, sampling design, study population, data collection and analysis and ethical consideration.

3.2 Study design

A cross-sectional qualitative and quantitative descriptive study was undertaken to assess knowledge, attitudes and practices of midwives toward HIV/AIDS positive mothers delivering at KNH, labour ward.

3.3 Study area

The study was carried out at the Kenyatta National Hospital, labour ward. Kenyatta National Hospital is a national referral hospital of the Republic of Kenya where the highest standards of care are expected including those toward HIV/AIDS positive mothers in labour ward. Evaluation of this care at KNH hopefully gave an insight of the level of care and in direct reflection of what is expected in the rest of the country. Details of the hospital are reflected in the background information. The study was conducted between June and September 2011.

3.4 Study population

The population under study included midwives who provide maternity services at Kenyatta National Hospital, labour ward at the time of study.

3.5 Inclusion criteria

- Midwives who were on duty providing maternity care services during period of study
- Midwives who have been working at KNH labour ward for at least 3 months before the period of study
- All consenting midwives were given a written informed consent

3.6 Exclusion criteria

- Midwives who were on leave as well as student nurses were excluded
- Midwives who have not worked at KNH labour ward for at least 3 months during the period of study
- All midwives who were not given written informed consent
- Midwives who were not working at KNH labour ward

The Research Assistants explained to the subjects the purpose and benefits of the study guided by a well structured consent form. Consent was then obtained freely without coercion.

3.7 Sample size Determination

The sample size determination according to Mugenda & Mugenda, (2003) was used:

$$n = \frac{Z^2 P (I - p)}{d^2}$$

Where:

n = the desired sample size (if the target population is > 10,000).

Z = the standard normal deviation at the required confidence interval

P = the proportion in the target population estimated to have characteristics being measured. Since no estimate was available, the recommended 50% by Fisher *et al* (2008) was used. No study in the past has been done to estimate the level of positive knowledge, attitudes and practices of midwives towards HIV/AIDS mothers in labour ward.

q = 1- p

d = the level of statistical significance set.

Thus: $N = (1.96)^2 \ (0.5) \ (0.5)/ \ (0.05)^2 \ = 384.16$

Since the total population of midwives working at KNH, labour ward is only 40, this is being less than 10,000, and the alternative formula was used as follows:

$nf = \underline{n:} \quad 1 + (n/N)$

Where: nf = the desired sample size (when the population is < 10,000).

n = the desired sample size (when the population is > 10,000).

N = the estimate total population size (Labour ward has a total of 40 who provide maternity service).

Therefore: nf = 384/ (1+384/40) = 36.226

The minimal sample population of midwives required in the study was 36, but 39 midwives were recruited for the study.

3.8 Sampling Interval

Sample interval (n) = $\frac{\text{Total number of Midwives at KNH labour ward}}{\text{Sample size}}$

Since labour ward had 40 midwives who were providing maternity services at Kenyatta National Hospital, the sampling interval was: n= 40/36 = 1.001

The estimated sample interval was approximately 1.0. All eligible midwives who consented were included in the study.

3.9 Sampling Procedure

Purposively sampling was used to obtain the desired sample size. Midwives who meet the inclusion criteria in the labour ward and agreed to participate were included in the study. Since sampling interval was one, all eligible midwives were included.

3.10 Study instrument

A pre coded self- administered semi structured questionnaire was used as the study instrument for collecting data, which was developed by the researcher from reviewed literature. The questionnaires included questions on demographic factors, knowledge, attitudes and practices and other factors as shown in operative frame work. According to strong and Brodt (2005),

questionnaire can be used to measure knowledge, attitudes and practice and provide an insight into an individual's behaviour. Uses of names were avoided for confidentiality and privacy. All eligible midwives who gave informed consent was given a questionnaire to complete and where necessary received assistance from the researcher assistants. The filled questionnaire was collected by research assistants and was handed over to the Principle Researcher for data analysis.

3.11 Pre testing of study instrument

The questionnaires was pre-tested and reviewed to ascertain the suitability of the tool before the actual administration. Pre-testing was done by administering the questionnaire to 4 midwives working at Pumwani Maternity Hospital were selected randomly to represent 10% of the actual population recommended for pre testing the questionnaire to ensure validity (Czaja & Blair, 2005). The findings were used to improve the questionnaire to ensure validity and reliability. This information did not form part of the study data.

3.12 Selection and training of research assistants

Two research assistants assisted in the collection of data, BScN level III students were identified from the school of Nursing Sciences, University of Nairobi. The researcher explained the purpose of the study, the objectives and trained them on the use of data collecting tool prior the commencement of data collection.

3.13 Data collection, cleaning and entry

Data was collected by the principal researcher and two researcher assistants for 4 weeks from June – July 2011. The self-administered questionnaires were given to only consenting eligible midwives after full explanation of the purposes and benefits of the study. After completion, the questionnaires were collected by the principal researcher or by the researcher assistants. The questionnaire was verified for accuracy and completeness. Data from properly completed questionnaire was entered into the SPSS program for analysis. There was no spoiled questionnaire.

3.14 Data analysis and presentation

The data was analyzed and results presented under each specific objectives in order to effectively answer the research questions (Brink and Wood 2001). Coding was used to ensure accuracy during data analysis. Quantitative data was analyzed using descriptive and inferential statistics. According to Denscombe (2006) descriptive statistics involves a process of transforming a mass of raw data into tables, charts, frequency diagrams, pie charts and bar diagrams. Data was analyzed using Statistical Package for Social Sciences (SPSS) version 16 program.

Descriptive analysis of each demographic variable was conducted by calculating mean (SD) for continuous variables like age and frequency distribution of categorical factors for example sex, and training. The main outcomes of knowledge, attitudes and practice were described and appropriate frequency distribution of responses presented using either figures or frequency tables. Next knowledge and attitude scores were calculated by adding up responses to 23 knowledge items to obtain a knowledge score and for attitude by adding up responses to 11 five point Likert scale items. ANOVA and t-test were used to compare mean knowledge and attitude scores among midwives with different demographic characteristics. All inferential statistical tests were considered significant at a cut off of 0.05.

3.15 Ethical considerations

Before commencement of the study permission was obtained from the following institutions and bodies:-

i. University of Nairobi and Kenyatta National Hospital Ethics and Research committee **(Ref. KNH/UON-ERC/A/128).**

ii. National Council for Science and Technology **(Ref. NCST/RR/12/1/MEDO11/97).**

iii. The midwives in participating hospital with whom full disclosure was made.

Confidentiality, privacy and dignity were also observed for the study subjects. None was coerced to participate in the study.

3.16 Protection of Human Subjects

The participants were fully informed of the implications of the study and their rights to withdraw from the study explained in an information sheet attached to the questionnaire. The information sheet also gave details of the purposes of the study and expected benefits. The completion and return of the questionnaire by participants was part of the consent for inclusion in the study.

CHAPTER FOUR

4.0 RESULTS

This chapter presents the findings of the study on knowledge, attitude and practices of midwives towards HIV/ AIDS positive mothers delivering at KNH. The findings are organized into sections representing the specific study objectives.

SECTION A: DEMOGRAPHIC FACTORS

4.1 Demographic characteristics of midwives

The KAP questionnaire was administered to a total of 39 midwives working at KNH. The findings from the descriptive analysis of the midwives' social and demographic characteristics were as follows:

4.1.1 Respondents' Gender Distribution. N = 39

Figure 4.1 shows that most 32 (82%) of the midwives were female. There were at least four female midwives for each male midwife in this study, male-to-female ratio 1: 4.6.

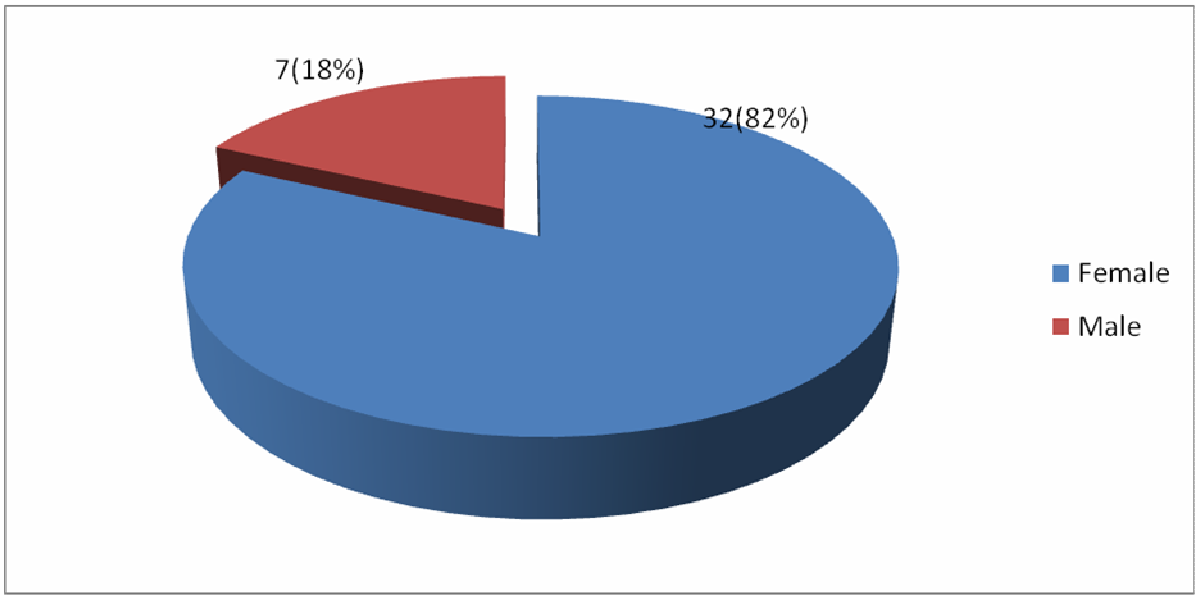

Figure 4.1: Gender of 39 midwives working at KNH recruited in the study

4.1.2 Age Distribution of Respondents

Figure 4.2 shows the age distribution of midwives in KNH. The mean age of the midwives was 35.6 (SD = 7.6) years and age range was 20 to 50 years. Most of the midwives were in the ages between 36 and 40 years 10 (25.6%) and 41 to 45 years 10 (25.6%). This was followed by midwives in the age group 31 to 35 years. Fifteen percent of the nurses were aged 20-25 years and less than ten percent were found in each of the two remaining age groups 26-30 years and 46-50 years.

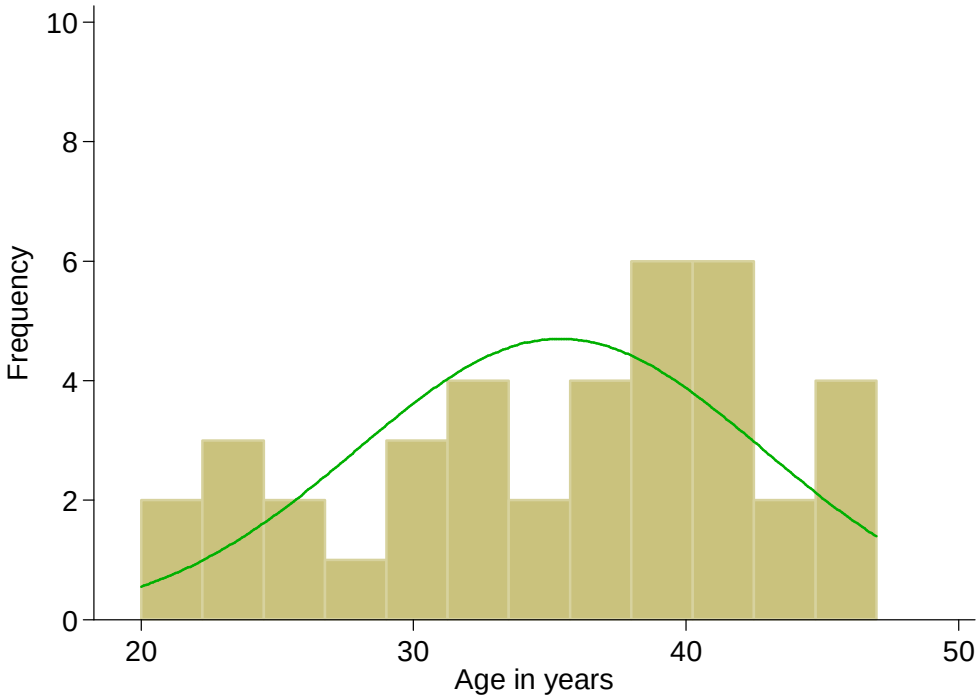

Figure 4.2: Histogram of midwives' age distribution at KNH labour ward

4.1.3 Marital status of the respondents

The marital status reported by midwives in the study is presented in Table 4.1. Out of the 39 midwives 25 (64.1%) indicated that they were married. The remaining 14 (35.9%) of the participants were single.

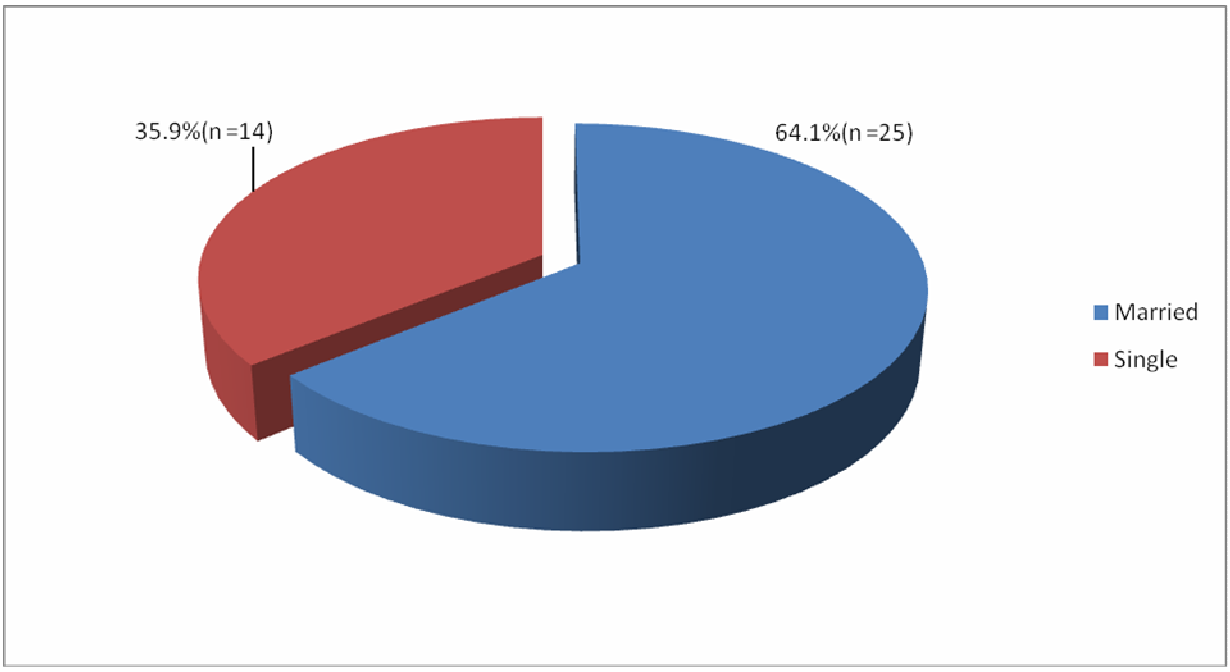

Figure 4.3: Marital status of midwives at KNH

4.1.4 Education level of the respondents

Most 36 (92.3%) of the midwives reported that they had nursing diploma qualifications (Table 4.1). The remaining three reported that they held university undergraduate degrees in nursing (5.1%, n = 2) or nursing certificates (2.6%, n = 1).

Table 4.1: Education level of midwives at KNH

	Frequency (%)
Education level	
Undergraduate nursing degree	2 (5.1)
Nursing diploma	36 (92.3)
Nursing certificate	1 (2.6)

4.1.5 Professional qualifications

The professional qualifications of midwives recruited in the study are shown in Table 4.2 below. Most 33 (84.6%) of the participants in this study were registered community health nurses (KRCHN). There were four participants who held midwifery qualifications (KEM/ KRM) and were enrolled 2 (5.1%) or registered 2 (5.1%) as midwives.

Table 4.2: Professional qualification of midwives at KNH

Profession	Frequency (N)	Percent
KRCHN	33	84.6
KEM	2	5.1
KECHN	2	5.1
KRM	2	5.1
Total	**39**	**100**

4.1.6 Midwifery experience in years

The mean duration of midwifery experience was 2.8 (SD = 2.6) years with a range from less than a year to 15 years. Figure 4.4 show that most 22 (56.4%) midwives had practiced midwifery for a period of between 1 to 5 years. One-third of midwives had been in practice for less than one year and approximately 4 (10%) had practiced midwifery for at least six years.

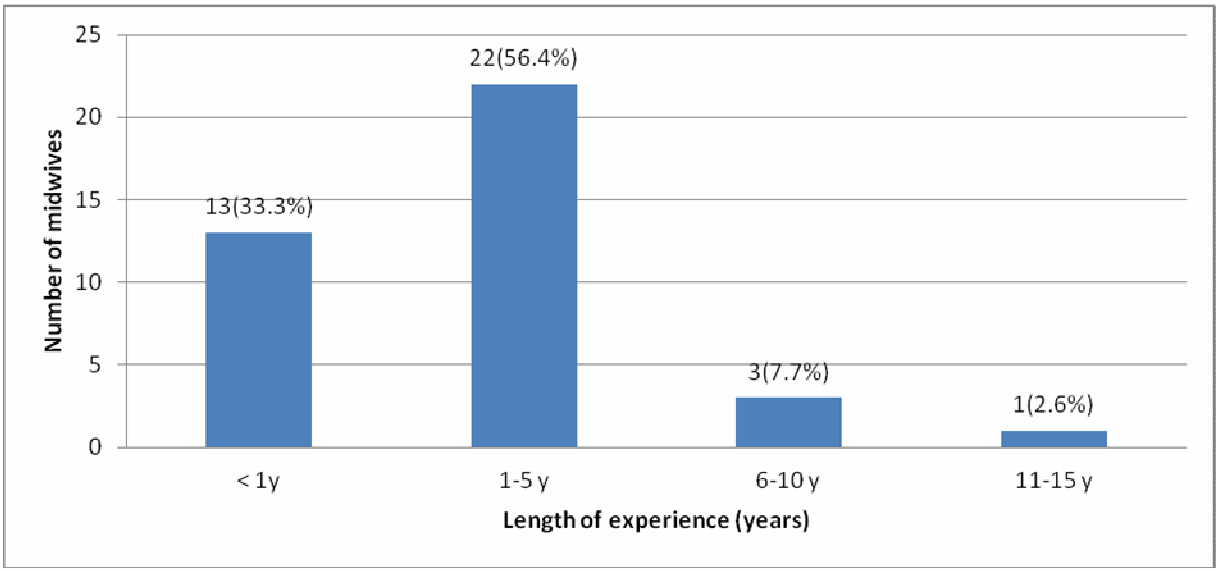

Figure 4.4: Duration of midwifery experience among participants in KAP study at KNH

SECTION B: MIDWIFERY ROLE FACTORS

Midwives, roles were investigated under three main domains namely delivery care, counseling and infection control.

4.2 Midwifery roles

4.2.1 Delivery care

Out of the 39 nurses, 38 (97.4%) disagreed with the statement that women should receive ARVs during delivery even when they have not been tested for HIV.

As shown in figure 4.5, most nurses agreed 17 (43.6%) or strongly agreed 10 (25.6%) that they got a sense of satisfaction from caring for pregnant women with HIV/ AIDS.

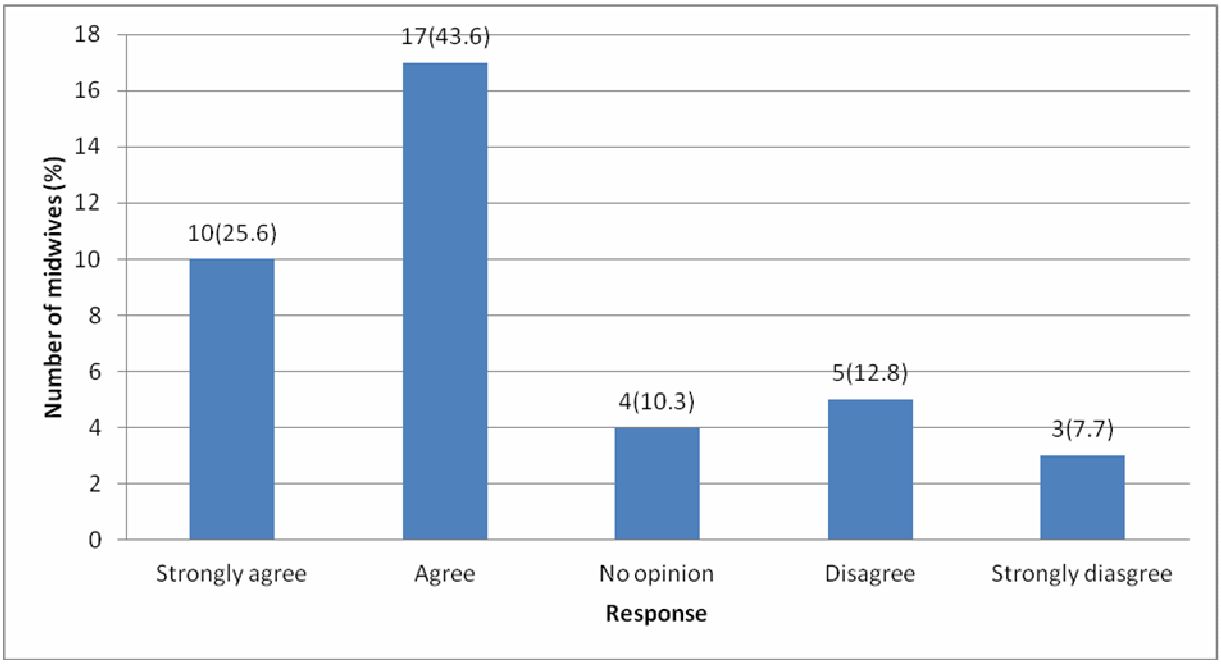

Figure 4.5: Satisfaction from caring for pregnant women with HIV/ AIDS

Figure 4.6 below shows that most midwives responded agree 14 (36.8%) or strongly agree 13 (34.2%) when asked whether they usually spend same time dealing with AIDS patients as with other patients.

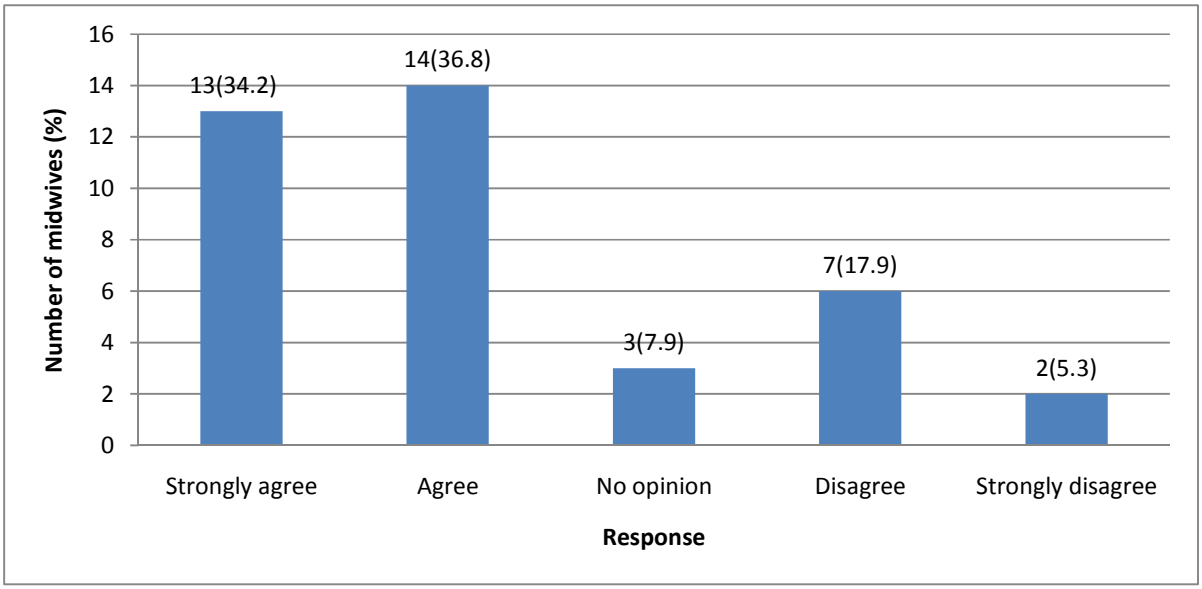

Figure 4.6: Midwives spending same time dealing with HIV patients as other patients

4.2.2 Counseling

The midwives' responses to the two items related to counseling of pregnant mothers revealed a good understanding of midwifery counseling roles. Most of the midwives (89.7%, n = 35) strongly agreed that all pregnant women should be tested for HIV. The majority of midwives (53.9%, n = 21) reported that they routinely teach women on how to prevent HIV while 17 (14.6%) did not routinely teach HIV prevention.

4.2.3 Infection control

Figure 4.7 shows a similar number of midwives either strongly agreed 13 (34.2%) or strongly disagreed 13 (34.2%) that they thought they were at risk of getting HIV because of their daily work in labour ward.

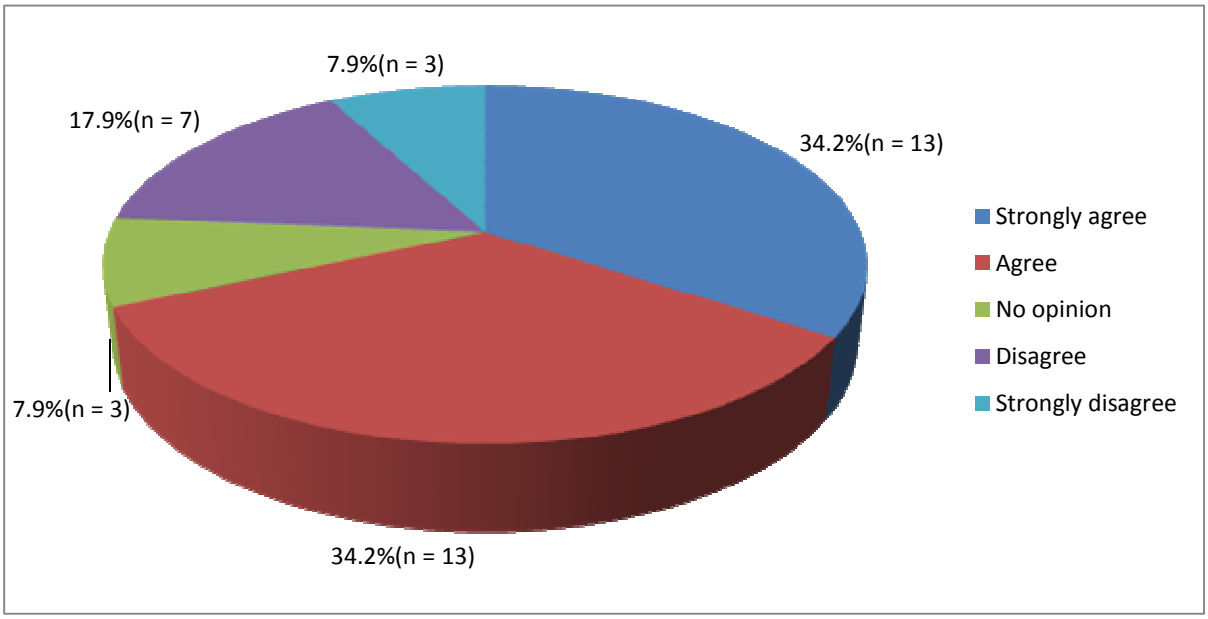

Figure 4.7: Perceived risk of contracting HIV because of daily work in the labour ward

SECTION C: INSTITUTIONAL FACTORS

The institutional factors examined in the study included funding and availability of essential equipment for providing delivery care.

4.3.1 Funding

Approximately three-quarters (76.9%, n = 30) of midwives in the study strongly agreed that the government should spend or pay more into research to develop vaccine against AIDS. Seven (18%) midwives agreed with this statement, while one (2.6%) disagreed and one (2.6%) strongly disagreed.

4.3.2 Equipment

As shown in figure 4.8, 28 (71.8%) of midwives reported regular supplies and adequate stocks 30 (76.9%) of essential equipment required for providing obstetric care. However, only 14 (35.9%) of midwives reported that they always used appropriately fitting gloves.

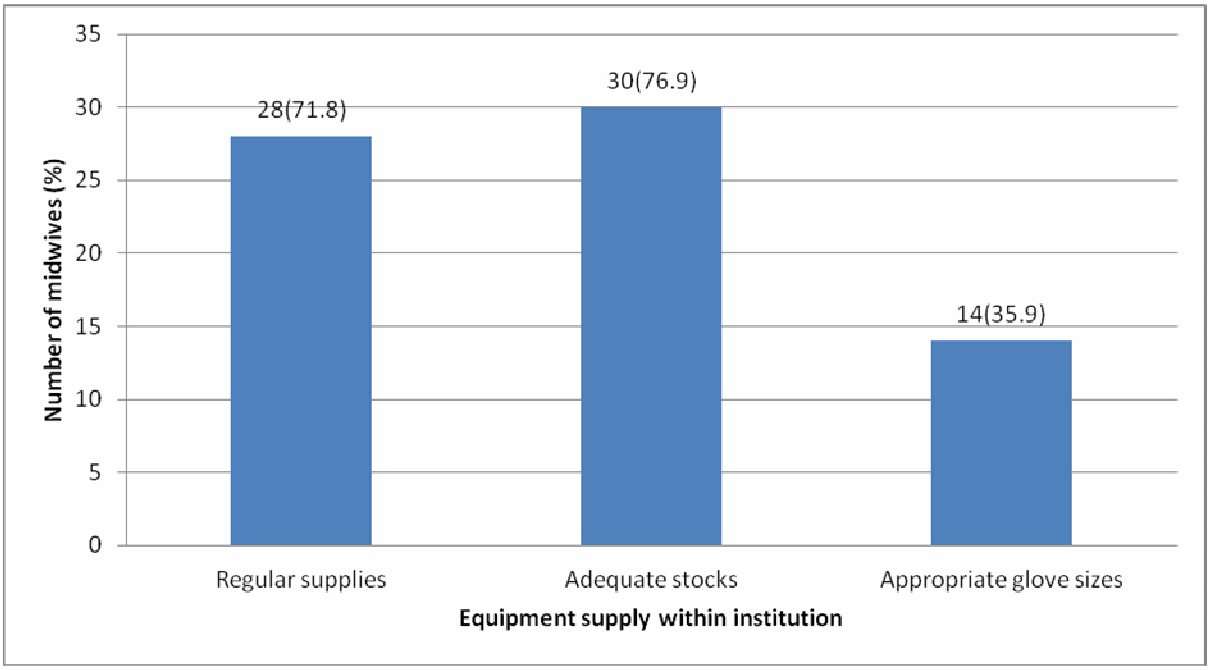

Figure 4.8: Availability of essential equipment for providing delivery care

SECTION D: MATERNAL FACTORS

4.4.1 HIV/ AIDS status

All the 39 midwives who responded disagreed with the statement that HIV-positive mothers should not get pregnant.

4.4.2 Awareness

Most midwives (87.1%, n = 34) felt that HIV positive mothers had a right to decide who should know about their HIV status. Figure 4.9 shows that 32 (82.1%) of midwives strongly agreed that the midwife should be informed if the mother they were attending to was HIV positive.

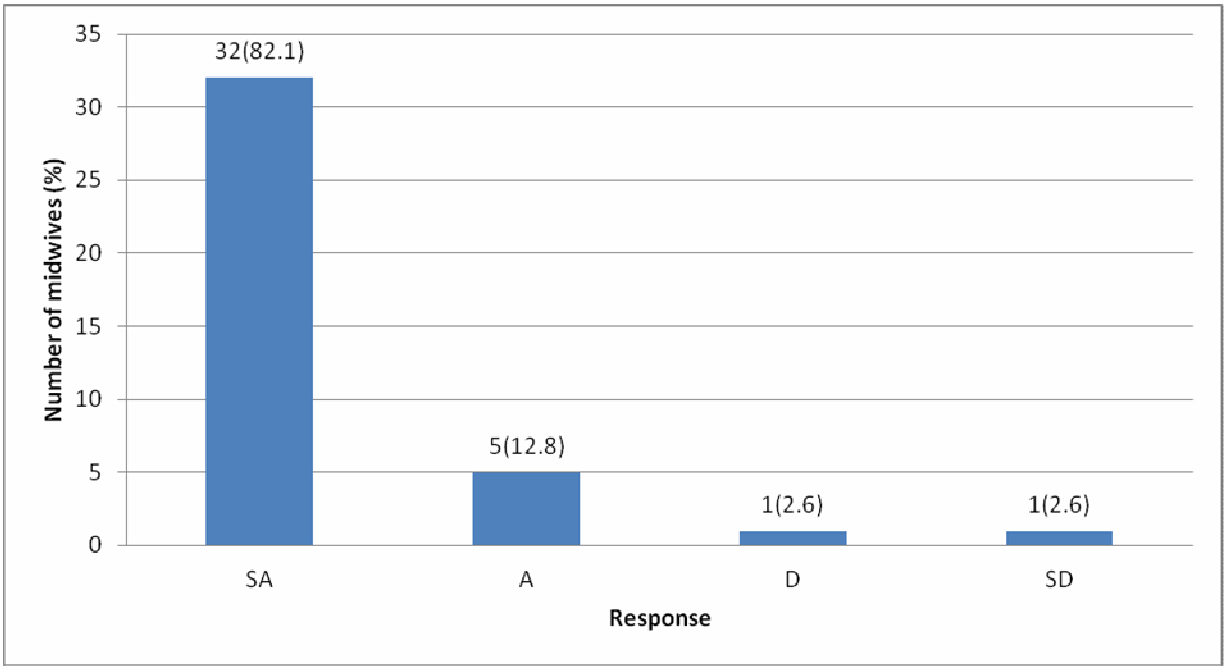

Figure 4.9: Midwives should be informed about HIV status of clients attended

SECTION E: MIDWIVES KNOWLEDGE

To assess knowledge on HIV/ AIDS, its transmission and management during pregnancy midwives were required to respond to 23 items. On average, the midwives responded correctly to approximately 16 out of the 23 items (mean = 15.97, SD = 2.43). The lowest scoring midwife responded correctly to 11 out of the 23 items and the highest scorer responded correctly to 22 out of the 23 items.

4.5.1 HIV/ AIDS transmission knowledge

The responses on HIV transmission are shown in Table 4.3. Most 37 (94.8%) midwives were aware that it is possible for a newborn to be HIV negative when the mother or father is positive. Ninety-four percent of the midwives were also aware that open genital sores do not necessarily have to develop following recent HIV infection.

Other areas in which most midwives frequently gave correct responses included: discordance among couples 36 (92.3%), and inability of a positive HIV test to predict the future illness severity 36 (92.3%). Only one-third (34.2%) of midwives correctly identified that retrovirus can cause HIV in pregnancy.

Table 4.3: Midwives knowledge on HIV/ AIDS transmission among midwives at KNH labor ward

Knowledge item	Mean scores			P value*
	Correct	Incorrect	Don't Know	
Human Papilloma Virus (HPV) can cause HIV (**F**)	83.8	13.5	2.7	< 0.001
Soon after infection with HIV a person develops open sores on his or her genitals (**F**)	94.7	5.3	0	< 0.001
If a woman tests positive for HIV the test can tell how sick the person will become (**F**)	92.3	7.7	0	< 0.001
There is a vaccine available to prevent women from getting HIV (**F**)	82.0	7.7	10.3	< 0.001
HPV is caused by the same virus that causes HIV (**F**)	65.8	10.5	23.7	< 0.001
It is easier to get HIV if a person has another STD (**T**)	84.6	15.4	0	< 0.001
Genital herpes is caused by the same virus as HIV (**F**)	84.2	10.5	5.3	< 0.001
Retrovirus can cause HIV in pregnancy (**T**)	34.2	39.5	26.3	0.63

It is possible that when the mother or father is positive, their newborn can be negative (**T**)	94.8	2.6	2.6	< 0.001
If a pregnant woman is HIV positive it means that her spouse/husband is HIV positive (**F**)	92.3	7.7	0	< 0.001
Blood and semen are the only body fluids known to transmit HIV (**F**)	84.6	15.4	0	< 0.001
Even outside the body, HIV is very hard to kill (**F**)	60.5	29.0	10.5	0.006

*P value comparing percentage of correct and incorrect responses

4.5.2 PMTCT knowledge

The midwives' responses reflected moderate knowledge on PMTCT and ART treatment with between 24 (60.5%) and 35 (89.5%) of respondents responding correctly to items in these two areas (Table 4.4).

Table 4.4: Midwives' knowledge on PMTCT

Knowledge item	Mean scores			P value*
	Correct	Incorrect	Don't Know	
Women with HIV can transmit it to their babies while they are pregnant (**T**)	71.8	28.2	0	0.0001
Artificial rupture of membranes is preferable in MTCT (**F**)	89.5	5.3	5.3	< 0.001
A triple drug ART regimen is used in MTCT (**T**)	76.9	7.7	15.4	< 0.001
Would you encourage breastfeeding for more than 6 months to a mother you know is HIV/AIDS positive (**F**)	60.5	39.5	0	0.066

*P value comparing percentage of correct and incorrect responses

4.5.3 Treatment knowledge and progression of HIV

Midwives displayed least knowledge when asked about antibody responses to HIV infection. Only 12 (30.8%) of the midwives gave a correct response when asked the duration between HIV infection and antibody response. The other areas in which at least 50% of midwives were unable to give a correct response were HIV encephalopathy as an indication of antiretroviral treatment (43.6%, n = 17 correct responses), and recurrent vaginal yeast infections or cervical cancer as possible signs of HIV infection (46.2%, n = 18 correct responses).

Table 4.5: Midwives' knowledge on treatment and progression of HIV

Knowledge item	Mean scores			P value*
	Correct	Incorrect	Don't Know	
The normal CD4 count is 500-1200 cells/ mm (**T**)	76.3	10.5	13.2	< 0.001
There is an effective treatment of HIV/AIDS positive mothers (**F**)	54.1	45.9	0	0.486
Persons infected with HIV will likely develop antibodies within 6 months (**F**)	30.8	41.0	28.2	0.345
HIV positive newborns sometimes revert to HIV negative status (**T**)	59.0	30.8	10.2	0.012
Recurrent vaginal yeast infections or cervical cancer may indicate HIV infection in women (**T**)	46.2	51.3	2.5	0.65
HIV encephalopathy is an indication of antiretroviral treatment (**T**)	43.6	41.0	15.4	0.82

*P value comparing percentage of correct and incorrect responses

4.5.4 Knowledge and midwives demographic characteristics

The knowledge scores for nurses with different demographic characteristics are compared in Table 4.6. There were no statistically significant differences in the level of knowledge among male and female midwives. On average, male midwives scored 16.42 compared to a mean score of 15.9 among female midwives, difference = 0.55, 95% CI -1.52 to 2.63 (t = 0.54, p = 0.59).

Midwives with longer experiences in midwifery appeared to be more knowledgeable on HIV (mean = 16.5) but the association between experience and knowledge was not statistically significant (ANOVA F = 0.11, p = 0.89).

Midwives' marital status (t = 1.04, p = 0.30) and age (ANOVA F = 0.98, p = 0.45) were both not significantly associated with their knowledge on HIV/ AIDS (Table 4.6).

Table 4.6: Level of knowledge and demographic characteristics of midwives at KNH labor ward

	Mean knowledge score [out of 23 (maximum)]	**t-test/ ANOVA**
Gender		**P value**
Male	16.42	0.59
Female	15.9	
Age		
20-25 years	15.33	0.45
26-30 years	16.67	
31-35 years	15.75	
36-40 years	16.1	
41 years and above	16.8	
Marital status		
Married	16.28	0.30
Single	15.42	
Midwifery experience		
< 1 year	16	0.89
1-5 years	15.86	
6 years and above	16.5	
Professional training		
KRCHN	16.15	0.29
Other (KEM/ KRM/ KECHN)	15	

4.5.5 Knowledge and midwife roles

There was a statistically significant association between knowledge among midwives and their perception of the risk of getting AIDS because of their daily work in labour ward (p = 0.018, Table 4.7). The midwives who strongly disagreed with this statement had a higher knowledge on HIV AIDS compared to those who agreed with the statement.

Table 4.7: Knowledge and midwife roles reported by midwives in KNH labor ward

	Mean knowledge score [out of 23 (maximum)]	**Mann Whitney test**
		P value
Satisfaction from caring for HIV positive clients		
Strongly agree/ Agree	16.2	0.31
Strongly disagree/ Disagree	15.5	
Spend same time dealing with HIV patients as other patients		
Strongly agree/ Agree	15.9	0.59
Strongly disagree/ Disagree	16.6	
At risk of getting AIDS because of work in labour ward		
Strongly agree/ Agree	15.7	0.018
Strongly disagree/ Disagree	17.2	

4.5.6 Knowledge and institutional factors

Midwives knowledge did not show a significant association with any of the institutional factors examined in the study including essential supplies (p = 0.76), and adequate stocks of in maternity wing (p = 0.69, Table 4.8).

Table 4.8: Knowledge and institutional factors reported by midwives at KNH labor ward

	Mean knowledge score [out of 23 (maximum)]	**Mann Whitney test**
		P value
Government should spend or pay more money into vaccine research		
Strongly agree/ Agree	16.02	0.44
Strongly disagree/ Disagree	15.0	
Regular supply of gloves, apron, masks		
Yes	16.0	0.76
No	15.91	
Adequate stocks of sterile gloves in maternity wing		
Yes	16.0	0.69
No	15.9	
Always have gloves appropriate for hand size		
Yes	15.7	0.65
No	16.1	

4.5.7 Knowledge and maternal factors

The correlation between midwives knowledge and their responses on maternal factors are shown in Table 4.9. Maternal factors like midwives' response on whether they should be informed of the HIV status of mothers they attended did not show significant associations with midwives' knowledge (p = 0.27).

Table 4.9: Knowledge and maternal factors

	Mean knowledge score [out of 23 (maximum)]	**Mann Whitney test**
		P value
Pregnant HIV positive women have right to decide who should know about it		
Yes	15.9	0.29
No	17.5	
Midwife should be informed when attending a HIV positive client		
Strongly agree/ Agree	16.2	0.27
Strongly disagree/ Disagree	15	

SECTION F: MIDWIVES ATTITUDES

4.6.1 Caring, respectful and empathetic attitude

Most midwives had a positive attitude toward HIV positive mothers because 59% of midwives strongly disagreed with the statement that HIV positive mother had themselves to blame (Figure 4.10).

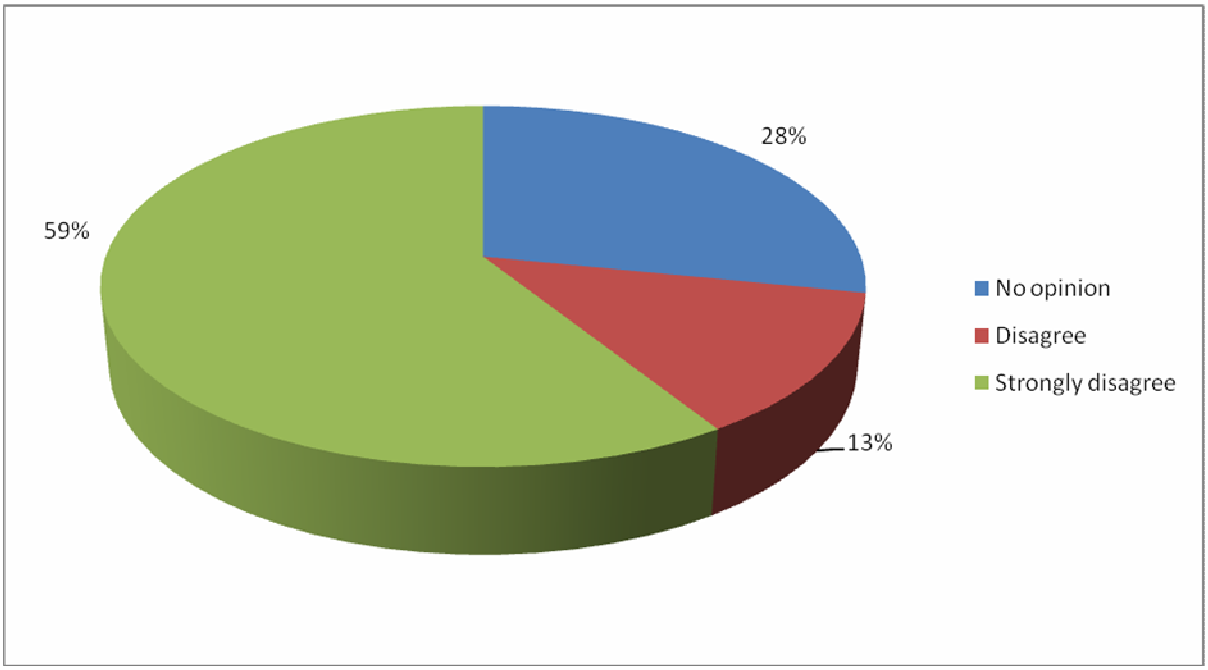

Figure 4.10: Midwives responses on whether HIV positive mother have themselves to blame

In addition most midwives did not have strong preference against caring for HIV positive mothers with 12 (30.8%) midwives disagreeing and 21 (53.9%) strongly disagreeing when asked whether they would prefer not to care for HIV positive women.

Ten percent (n =4) midwives reported that awareness of HIV/ AIDS has made them fearful about caring for pregnant mothers with HIV and 41% (n =16) of midwives indicated that they were scared that they might get infected while working as a midwife. Twenty-four (61.5%) midwives felt that a midwife who is HIV positive should help in delivery of women while 12 (30.8%) felt that they should not.

In table 4.10 shows that the two midwives preferring not to care for HIV positive women both had experience between 1 to 5 years and those reporting fear had experience of between 1 to 5 years (13.6%, n =5) or 6 years and above (25%, n = 10).

Table 4.10: Training, midwifery experience and midwives attitudes *

		Training		P	Midwifery experience			P
Attitude item	Total N (%)	KRCHN (%)	Other (%)		<1 y (%)	1-5 y (%)	≥6 y (%)	
I would prefer not to care for HIV positive mothers	2 (5.7)	3.4	16.7	0.32	0	10.5	0	0.62
HIV awareness has made me fearful about caring for positive women	4 (10.3)	9.1	16.7	0.5	0	13.6	25.0	0.14
I am scared I might get infected while working as a midwife	16 (41)	39.4	50.0	0.67	30.7	50.0	25.0	0.5
HIV positive midwives should assist in conducting deliveries	24 (66.7)	73.3	33.3	0.15	50.0	80.0	50.0	0.13

*No statistically significant associations; Fisher's exact tests

4.6.2 Attitude and midwife roles

Table 4.11 shows that the responses to attitude items did not show a statistically significant association with midwife roles. None of the midwives who disagreed that they spent similar time with HIV patients as with other patients reported that they would not prefer to care for HIV positive mothers.

Table 4.11: Midwives attitudes and midwife roles*

		Satisfaction derived from caring		P	Time spent with patients		P	Perceived risk of infection		P
Attitude item	Total N (%)	A/ SA (%)	D/ SD (%)		A/ SA (%)	D/ SD (%)		A/ SA (%)	D/ SD (%)	
I would prefer not to care for HIV positive mothers	2 (5.7)	3.9	14.3	0.38	8.0	0	0.99	8.7	0	0.99
HIV awareness has made me fearful about caring for positive women	4 (10.3)	7.4	12.5	0.55	7.4	25	0.22	7.7	11.1	0.99
I am scared I might get infected while working as a midwife	16 (41)	37	62.5	0.25	37	62.5	0.25	50.0	33.0	0.46
HIV positive midwives should assist in conducting deliveries	24 (66.7)	57.7	85.7	0.22	60	100	0.07	69.6	77.8	0.99

*No statistically significant associations; Fischer's exact test

4.6.3 Attitude and institutional factors

As shown in Table 4.12, midwives responses to attitude items did not show significant associations with any of the three institutional factors examined. Most midwives regardless of their responses on institutional factors agreed that HIV positive midwives should conduct deliveries. Similarly only few midwives regardless of their responses to institutional factors indicated that they would not prefer to care for HIV positive mothers or that they were fearful.

Table 4.12: Midwives attitudes and institutional factors*

		Gloves supply*		P	Adequate stocks*		P	Gloves size*		P
Attitude item	Total N (%)	True (%)	False (%)		True (%)	False (%)		True (%)	False (%)	
I would prefer not to care for HIV positive mothers	2 (5.7)	3.7	12.5	0.41	3.9	11.1	0.45	7.1	4.8	0.99
HIV awareness has made me fearful about caring for positive women	4 (10.3)	3.6	27.3	0.06	10	11.1	0.99	14.3	8.0	0.61
I am scared I might get infected while working as a midwife	16 (41)	42.9	36.4	0.99	46.7	22.2	0.26	35.7	44	0.74
HIV positive midwives should assist in conducting deliveries	24 (66.7)	61.5	80.0	0.44	63	77.8	0.69	71.4	63.6	0.73

*No statistically significant associations; Fisher's exact test

4.6.4 Attitude and maternal factors

Table 4.13 shows that the two midwives who would prefer not to care for HIV positive mothers agreed or strongly agreed that midwives need to be informed about the HIV status of pregnant mothers they were attending. The four midwives who were fearful about caring for HIV positive mothers also said that midwives need to be informed about the HIV status of pregnant mothers they were attending. No significant associations were found between attitude and maternal factors.

Table 4.13: Midwives attitudes and maternal factors*

		Midwife be informed on clients HIV status		P value
Attitude item	Total N (%)	A/ SA (%)	D/ SD (%)	
I would prefer not to care for HIV positive mothers	2 (5.7)	5.7	0	0.99
HIV awareness has made me fearful about caring for positive women	4 (10.3)	10.3	0	0.99
I am scared I might get infected while working as a midwife	16 (41)	40.5	50.0	0.99
HIV positive midwives should assist in conducting deliveries	24 (66.7)	37.5	41.7	0.54

*No statistically significant associations; Fisher's exact test

SECTION G: MIDWIVES PRACTICE

4.7.1 Model of delivery and labour monitoring

Approximately half (53.9%, n = 21) of midwife in the study reported that they always use double gloves when delivering a baby and 18 (46.1%) reported that they did not always use double gloves. As shown in figure 4.11 below most midwives strongly disagreed that midwives should be allowed to refuse delivery for mothers with HIV/ AIDS.

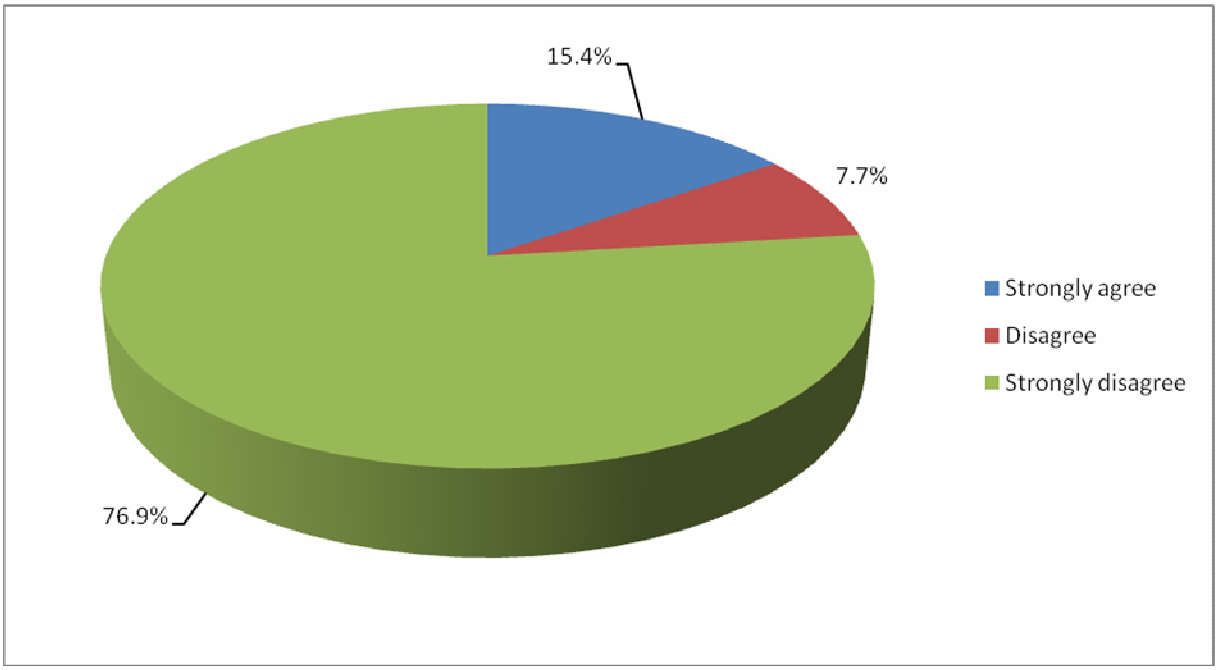

Figure 4.11: Midwives' responses on refusal to deliver HIV positive mothers

Further, 10 (25.6%) midwives disagreed and 17 (43.6%) strongly disagreed that it is dangerous for midwives to care for HIV positive mothers.

4.7.2 Practice and midwives demographic characteristics

As shown in table 4.14 there was no significant association between midwifery practice and gender or marital status of participating midwives.

Table 4.14: Midwifery practice according to sex and marital status

		Sex		P	Marital status		P
Practice item	Total N (%)	Female (%)	Male (%)		Married (%)	Single (%)	
It is dangerous for midwives to care for HIV positive mothers	7 (20.6)	21.3	16.7	0.99	14.3	30.8	0.39
Midwives should be allowed to refuse to deliver mothers with HIV/ AIDS	6 (15.7)	15.6	14.3	0.99	12	21.4	0.68

Table 4.15 shows that the practice of midwives did not show significant association with their training or length of midwifery experience. Approximately 18% of KRCHN thought it was dangerous to care for HIV positive mothers compared to 33.3% of nurses with other training. Fifteen percent of KRCHN felt midwives should be allowed to reuse to deliver mothers with HIV and 16.7% of nurse with other training expressed the same opinion.

Table 4.15: Midwifery practice according to training and experience

		Training		P	Midwifery experience			P
Practice item	Total N (%)	KRCHN (%)	Other (%)		<1 y (%)	1-5 y (%)	≥6 y (%)	
It is dangerous for midwives to care for HIV positive mothers	7 (20.6)	17.9	33.3	0.58	25	15.8	33.3	0.56
Midwives should be allowed to refuse to deliver mothers with HIV/ AIDS	6 (15.7)	15.5	16.7	0.99	30.8	9.1	0	0.24

4.7.3 Practice and midwife roles

Table 4.16 show that there was a significant association between satisfaction with providing care to HIV positive mothers and perception on the danger of caring for HIV positive mothers. Fifty percent of midwives who said it were dangerous to care for HIV positive mothers disagreed or strongly disagreed that they got satisfaction from caring for HIV positive mothers compared to 12% of midwives who did not think it was dangerous to care for HIV positive mothers.

Table 4.16: Midwifery practice according to midwifery roles

		Satisfaction derived from caring		P	Time spent with patients		P	Perceived risk of infection		P
Attitude item	Total N (%)	A/ SA (%)	D/ SD (%)		A/ SA (%)	D/ SD (%)		A/ SA (%)	D/ SD (%)	
It is dangerous for midwives to care for HIV positive mothers	7 (20.6)	12	50†	0.03	16	20	0.99	23.8	22.2	0.99
Midwives should be allowed to refuse to deliver mothers with HIV/ AIDS	6 (15.7)	11	25	0.57	18.5	0	0.32	19.2	0	0.30

†statistically significant $p < 0.05$

4.7.4 Discrimination of HIV/AIDS positive mothers

The midwives reported discrimination of HIV/AIDS positive mothers in the labour ward. Midwives suggested several approaches to prevent this discrimination. Out of the 39 midwives, 19 (48.7%) proposed that educational means can be employed to reduce discrimination. Among the proposed methods of nurse education were attending seminars, PMCTC training and other HIV/ AIDS training. The next most common suggestion made by 9 (23.1%) nurses was that discrimination could be reduced by raising awareness among midwives on the management of HIV/ AIDS during pregnancy. The suggested focus on the awareness campaigns was on transmission of HIV/ AIDS and how midwives could protect themselves from HIV.

Other approaches which were less common focused on the patient with suggestions that if the patients were put on ART and properly managed then they would not be discriminated during pregnancy. Two midwives suggested that the patients should be accepted and treated like HIV negative mothers and this would reduce discrimination.

4.8 Summary of the findings

In summary, the mean knowledge score was 15.97 (SD = 2.43) out of a maximum score of 23 representing moderately high level of HIV/ AIDS knowledge. Knowledge on antibody response to HIV infection and retroviral cause of HIV was low. There was a statistically significant association between knowledge among midwives and their midwifery roles (p = 0.018). Midwives' demographic characteristics, institutional factors and maternal factors did not show significant associations with knowledge, attitude and practice.

The study revealed that the midwives had adequate HIV knowledge but, still had gaps in certain areas. In addition they showed a positive attitude. There is need for improved knowledge through structured educational intervention on the care of HIV/AIDS positive mothers.

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.0 INTRODUCTION

This chapter presents the discussion of study findings. Conclusions are also drawn and recommendations made based on these findings. The discussion is organised in the following sections: Participants demographic information, Knowledge on HIV/AIDS among midwives, Attitudes on HIV/AIDS among midwives, Respectful attitude towards HIV positive mothers, Midwifery practices and Discrimination of HIV positive mothers

5.1 DISCUSSION

The study was conducted at KNH, an urban tertiary teaching and referral hospital and aimed to assess the knowledge, attitudes, and practices of midwives towards HIV/AIDS positive mothers delivering in the maternity unit.

5.1.1 Participants Demographic Information

The demographic profile of the studied midwives including age, gender and midwifery training corresponded to expected distribution based on existing national reports of midwifery training and workforce characteristics. The recently concluded Human Resource for Health mapping exercise conducted within the Kenyan Health sector reported that over one-third of health workers are aged between 41-50 years (James, 2006). This finding is confirmed by the age distribution in this study which reflects an aging midwifery workforce with 30.7% of participants above 41 years. Considering gender, there was a disproportionate representation of female midwives among respondents with a male-to-female ratio of 1: 4.6. Riley (2007) reported that out of an estimated workforce of 39,280 nurses and midwives registered in Kenya between 1965

and 2005, 30,546 (77.1%) were female partly explaining the dominance of females (82%) in this study. This gender distribution may be attributed to the fact that the midwifery as a profession started as a purely female professional worldwide. James (2006) noted that for many reasons, some to do with the fact that most midwives are female, there has been gross underinvestment in building a cadre of professional midwives, and midwives lack status and respect.

Approximately 85% of midwives were KRCHN. This is higher than the reports in the national nurses' database where enrolled nurses were at least twice as many as registered nurses in 2005 by Riley (2007). The high number of midwives who are registered community health nurses (KRCHN) may be explained by two factors. First, being a national referral hospital, KNH workforce is highly qualified and enrolled nurses are likely to be found at lower levels of the healthcare system. Secondly, with the recent focus on upgrading professional nursing in Kenya through eliminating the enrolled nursing cadre most enrolled nurses have been upgrading from enrolled to registered nurses as required by then Nursing Council of Kenya's 2005 – 2010 Strategic Plans.

5.1.2 Knowledge on HIV/AIDS among midwives

The level of knowledge on HIV/ AIDS among nurses in this study was moderately high (mean = 15.97 out of 23). However, there existed many gaps in the knowledge of HIV as over 69.2% of respondents could not correctly answer the items on the duration between HIV infection and antibody response and 50% on issues related to opportunistic infections and its complications. In line with this finding, Adebajo et al (2003), noted from a study of nurses in Lagos State, that "significant proportion (96.5%) of the respondents had appreciable knowledge (moderate to

high) scores, however, in spite of this, there are some many gaps in their knowledge of HIV, they had many misconceptions regarding how HIV/AIDS can be transmitted". The result is consistent with the study carried out by Mbanga et al (2001), to assess knowledge and practice of nurses in regard to HIV/AIDS in Cameroon which revealed that 70% of the nurses scored highly on the knowledge of HIV.

One of the researcher's assumptions was that midwives would have some knowledge regarding the prevention of HIV/AIDS infection from the mother to the baby. Interestingly, most of the midwives demonstrated knowledge of strategies for prevention of HIV/AIDS as they agreed on the use of triple - antiretroviral drugs (76.9%), exclusive breastfeeding for six months (60.5%), avoiding artificial rupture of membrane (89.5%), and delivery through caesarean section (51.9%). The midwives (88.4%) also agreed that universal precautions should be used with all the patients, at all times regardless of diagnosis. This is consistent with UNAIDS (2010) recommendation that delivery among HIV-positive women can be conducted through Cesarean-section at 38 weeks. Additional recommendations include proper use of antiviral drugs, avoiding use of any birthing instruments and safe use of breast-milk substitutes.

Regarding mother-to-child HIV transmission, the study revealed that only 60.5% of the participants knew that HIV can be transmitted through breastfeeding, which is consistent with Armstrong (2006) findings that only half of the nurses knew that HIV can be transmitted through breastfeeding. The WHO (2010) recommended that mothers with HIV /AIDS should exclusively breast feed their babies for six months if unable to afford infant formula. However, one has to weigh the benefits of breast feeding a baby and the consequences of not breastfeeding especially in developing countries, where breast feeding is common practice. In low income settings where many families are unable to afford infant formula milk, exclusive breast feeding is recommended.

5.1.3 Attitudes on HIV/AIDS among midwives

On assessing attitude, the responses of all the three attitude dimensions about caring, respect and empathy- were considered. The relatively high mean attitude score (40.53 out of 55) indicates that in general midwives have a positive attitude toward HIV/ AIDS positive mothers. The study results confirmed the researchers' assumption that the midwives would have positive attitudes in caring of HIV/AIDS positive mothers but discrimination behaviour were also found among them.

In this study, 69.2% of midwives reported deriving satisfaction from caring for pregnant women with HIV/AIDS. The explanation for a significant percentage (30.8%) of midwives not agreeing could be their focus on HIV/AIDS as a terminal illness, while they would rather see these mothers recovers from the disease. Two-thirds of midwives expressed concern about the risk of contracting HIV infection in the course of their work. Similarly, Juan, Siebers, Wu et al. (2004) study indicated that, out of hundred and ten nurses (19%) were seriously considering leaving their job because of fear of acquiring HIV/AIDS during their work.

Midwives in this study were generally conscious of issues surrounding patient confidentiality and disclosure of HIV status. Thirty four (87.2%) midwives said that pregnant women with HIV have a right to decide who should know about their illness and 35 (89.7%) of the participants indicated that women with HIV have a right to decide on whether to conceive. In contrast, however, Reis, Heisler, Amowitz et al. (2005) results showed that, Fifty seven percent of participants believed that relatives and sexual partners of patients with HIV/AIDS should be notified of the patient's status even without the patient's consent.

Despite the generally positive findings on midwives' attitudes, negative attitude still exists among midwives. Eighty nine percent of midwives indicated that they were fearful about caring for HIV/AIDS positive mothers. Reis, Heisler, Amowitz et al. (2005) reported a similar finding in their study where it was noted that 90% of the health care professional refused to care for patients with HIV/AIDS and 9% had refused hospital admission for patients with HIV/AIDS. Also the findings was supported by Sivaram (2004) who reported that, with currently HIV/AIDS high transmission rate has emerged much tensions and anxieties among the public and healthcare providers. In reality, the fear of being infected at workplaces has led to irrational and discriminatory treatment of people living with HIV/AIDS.

Furthermore, 95% of participating midwives felt that they should be informed if they were attending a HIV positive mother so that they can protect themselves. This is consistent with Reis, Heisler, Amowitz et al. (2005) findings, where 91% of professionals agreed that staff and health-care professionals should be informed when a patient is HIV-positive.

5.1.4 Respectful attitude towards HIV positive mothers

Only ten (25.6%) of the midwives in this study said that HIV/AIDS spreads due to immoral behavior, indicating that they had a judgmental attitude. In the study by Reis, Heisler, Amowitz *et al*. (2005) it was reported that 20% of the respondents agreed that many of those who have HIV/AIDS behaved immorally and deserve the disease. This could be due to the fact that many people think that the disease is transmitted heterosexually which is perceived to be more common among prostitutes. Also the midwives could have a strong tradition belief that sex outside wedlock is against the law of God. This finding contrast to Rahlenbeck (2004) in which it was reported that, health care providers should look inward to examine and challenge long-

held beliefs, values, assumptions and attitudes will go a long way as the midwives provide compassionate and respectful care to the people with HIV/AIDS. Health care provided with knowledge and compassion, in a setting of dignity and respect, helps to provide comfort with less misery and isolation.

5.1.5 Availability of supplies in maternity

The availability of essential resources for providing delivery care in the maternity unit was satisfactory. Thirty (76.9%) out of the 39 midwives reported that the labour ward received regular supplies of gloves, aprons and masks. In contrast to the study by Gumodoka (2004) when doing a brief situation analysis of facilities in district, reported that, gloves and aprons were inadequate in 60% of the facilities. It is established that all health workers including the midwives prior to contact with blood and other body fluids from any patient should wear gloves, and that gloves should be changed after each contact. This is not possible if gloves are inadequate in the labour ward. Apart from the regular supply, nurses were asked whether there was always an adequate stock of sterile gloves on the maternity wing. Twenty-eight (71.8) midwives reported that there was always an adequate stock of sterile gloves for the maternity wing.

5.1.6 Midwifery practices

The study reports widespread practice of double gloving during delivery. In addition approximately one-fifth of all nurses felt it was dangerous to attend HIV/AIDS positive mothers and that midwives should be allowed to choose whether to assist in such deliveries (Fig. 4.10). This was supported by the study of Hentget *et al* (2006) who reported that 79% of health care believed that they were at risk of acquiring AIDS, mainly through occupational exposure.

5.1.7 Discrimination of HIV positive mothers

In this study the majority of the midwives suggested several approaches to prevent discrimination to the HIV/AIDS positive mothers. Out of the 39 midwives, 19 (48.7%) proposed additional training on universal precautions. Among the proposed methods of midwives education were attending seminars, PMCTC training and other HIV/ AIDS training. This result is supported by previous studies that demonstrated positive effect of education about HIV/AIDS on nurses and other health care providers (Reis, Heisler, Amowitz *et al*., 2005; Deb, 2004 and Peate, Suominen, Valimaki *et al*., 2002).

The next most common suggestion made by midwives was that discrimination could be reduced by raising awareness among midwives on the management of HIV/ AIDS during pregnancy. The suggested focus on the awareness campaigns was on transmission of HIV/ AIDS and how midwives could protect themselves from HIV. These suggestions are supported by Koji K., Yoshi O., Rossana A. *et al.* (2009) who reported that, increasing the awareness of HIV/AIDS among Health workers would be valuable to minimize the risk of infection for keeping the nation's HIV prevalence at a minimum level.

5.2 Limitation

Compared to other KAP studies on HIV/ AIDS the sample of this study is limited. Reasons for failure to recruit a large sample include restrictions in the target population size since only 40 midwives provide maternity care at the study site. As a result of the inclusion of all midwives in KNH the findings of this study can be directly generalized to KNH but attempts to generalize these findings to other settings should be done cautiously.

5.3 Conclusion

The study revealed that midwives were significantly knowledgeable about HIV/AIDS and there was no significant difference in the knowledge of HIV/AIDS and that demographic factors did not significantly impact on midwives knowledge. However, midwives with longer experiences in midwifery appeared to be more knowledgeable on HIV/AIDS but the association between experience and knowledge was not statistically significant. Also, the midwives had relatively positive attitudes towards HIV/AIDS mothers. Most midwives expressed a caring, respectful and empathetic approach towards HIV positive mothers, and no significant differences were found in the attitude of male midwives and female midwives towards HIV/AIDS positive mothers.

5.4 Recommendations

Based on the findings that emanated from this study, the following recommendations are made:

- There is the need to develop educational training programmes on HIV Infection and AIDS as a way of improving knowledge, attitudes and skills of midwives
- Primary training and continuing education for midwives which will alter prejudicial attitudes and provide factual and current information on HIV/AIDS are required.
- Kenyatta National Hospital (KNH) needs to plan and intensify efforts to hold counseling courses and lectures on HIV/AIDS for midwives working in labour ward, and they should be encouraged to change their attitudes to be more positive when attending for HIV/AIDS positive mothers in order to reduce the stigma displayed by them in this study.

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LIST OF APPENDICES

Appendix I: Consent Information Sheet and Form

TITLE: KNOWLEDGE, ATTITUDES AND PRACTICES OF MIDWIVES TOWARD HIV/AIDS POSITIVE WOMENS DELIVERING AT KENYATTA NATIONAL HOSPITAL, LABOUR WARD.

Principal Investigator: Mfalamagoha Johari

School of Nursing Sciences

University of Nairobi

Phone: 0714976773

I am Mfalamagoha Johari, level II masters' student at the University of Nairobi, College of Health Sciences, and School of Nursing Science. I am conducting research on "**Knowledge, Attitudes and Practices of midwives toward HIV/AIDS positive women's delivering at Kenyatta National Hospital, labour ward".**

I respectfully request your participation in this study. Your participation will require the completion of a questionnaire and will be considered as informed consent. No names are necessary on questionnaire. A code will be given to maintain anonymity and confidentiality.

There are no perceived risks for your participation. Your participation is voluntary. You are free to decline or withdraw from the study at any time and refusal to take part will not attract any penalty. You retain the right to withdraw without risking any consequence from any authority. Participation or non – participation does not come with any financial costs. Equally, no

compensation will be provided for participation in the study. You are free to ask questions and seek clarifications about the study now any time.

The information from this study will establish baseline data for nursing education and in service to meet the learning needs effectively and ultimately become a means of improving the care of the pregnant women with HIV/AIDS in the labour wards.

This study is part of a course requirement and the researcher has no competing interests.

I expect to hold meetings with the study hospital to share the findings from the research, the findings of this study will be published in national and International scientific journals and your identity will be kept confidential.

CONSENT FORM:

This study has been explained to me by Researcher/Researcher Assistants. All my questions about the study have been answered. I agree to participate in this study.

……. …… …….. …….

Informant Date Researcher Date

Appendix II: Research Questionnaire to the Midwives

Questionnaire No:.....Date: Day:…… Month:…….. Year:……

Section 1: Demographic characteristic of participating midwives

Please indicate by ticking the correct box regarding personal information in the following statements:

S/N	Questions and filters	Coding categories	Tick box
1.	What is Your gender in sex?	Female……1	
		Male……2	
2.	What is Your age in years?	20 - 25 Yrs……..1	
		26 – 30 Yrs…… 2	
		31 – 35 Yrs……..3	
		36 - 40 Yrs…….4	
		41 – 45 Yrs……..5	
		46 – 50 Yrs……..6	
		Over 50 Yrs……..7	
3.	What is your marital status now?	Single ……..…….1	
		Married ……..……2	
		Widowed ……..…….3	
		Divorced ……..…….4	
		Separated ……5	
		No response……...…….6	
4.	What is the highest level of school you attended?	‘O’ Level ……...…..……1	
		‘A” Level……..…..……2	
		College ……..……..3	
		University…….……..4	
5.	What is Your professional Qualification?	KEM 1	
		KECHN 2	
		KRM 3	
		KRCHN …….……....4	
		Other (please specify)……5	
6.	What is your midwifery experience in labour ward?	Less than 1Yr…….1	
		1 – 5 Yrs……...……..2	
		6 – 10 Yrs……...3	
		11 – 15 Yrs…….……4	
		16 – 20 Yrs…….…….....5	
		21 – 25 Yrs…….……6	

SECTION II (A): MIDWIVES ROLE FACTORS

Please rate each item on a scale the extent in which you agree or disagree. Indicate by Ticking in appropriate space based on the following scale: Strongly Agree [SA]; Agree [A]; No Opinion [NO]; Disagree [D] and Strongly Disagree [SD]

	Items/ Statements	**SA**	**A**	**NO**	**D**	**SD**
7.	I get a sense of satistifaction from caring for pregnant women with HIV/AIDS					
		1	2	3	4	5
8.	I think I am at risk of getting HIV because of my daily work in the labour ward					
		1	2	3	4	5
9.	All pregnant women should be tested for HIV/AIDS	1	2	3	4	5
10.	I usually spend same time dealing with AIDS patients as with other patients					
		1	2	3	4	5

SECTION II (B): MIDWIVES ROLE FACTORS

For each statement below, please circle true (T), false (F), or I don't know (DK). If you don't know, please do not guess; instead, please circle DK.

	Statements	**True**	**False**	**Don't know**
11.	Do you routinely teach pregnant woman on how to prevent HIV/AIDS	T	F	DK
		1	2	3
12.	Should women receive anti-retroviral (ARVs) during delivery even when they have not tested for HIV	T	F	DK
		1	2	3

SECTION III (A): INSTITUTION FACTORS

For each statement below, please circle true (T), false (F), or I don't know (DK). If you don't know, please do not guess; instead, please circle DK.

	Statements	**True**	**False**	**Don't know**
13.	Do you receive regular supply of gloves, aprons and masks in labour ward	T	F	DK
		1	2	3
14.	Do you always have adequate stocks of sterile gloves for the maternity wing	T	F	DK
		1	2	3
15.	Do you always have gloves appropriate for your size of hands	T	F	DK

SECTION I11 (B): INSTITUTION FACTORS

Please rate each item on a scale the extent in which you agree or disagree. Indicate by Ticking in appropriate space based on the following scale: Strongly Agree [SA]; Agree [A]; No Opinion [NO]; Disagree [D] and Strongly Disagree [SD]

	Items/ statements	**SA**	**A**	**NO**	**D**	**SD**
16.	Government should spend or pay more money into research to develop vaccine against AIDS					
		1	2	3	4	5

SECTION IV (A): MATERNAL FACTORS

For each statement below, please circle true (T), false (F), or I don't know (DK). If you don't know, please do not guess; instead, please circle DK.

	Statements	**True**	**False**	**Don't know**
17.	Pregnant women with HIV/AIDS have a right to decide who should know about it	T	F	DK
		1	2	3
18.	HIV-positive women should not get pregnant	T	F	DK

SECTION IV (B): MATERNAL FACTORS

Please rate each item on a scale the extent in which you agree or disagree. Indicate by Ticking in appropriate space based on the following scale: Strongly Agree [SA]; Agree [A]; No Opinion [NO]; Disagree [D] and Strongly Disagree [SD]

	Items/ Statements	**SA**	**A**	**NO**	**D**	**SD**
19.	I think I should be informed when the pregnant women I attend to has HIV/AIDS					
		1	2	3	4	5

SECTION V (A): KNOWLEDGE ON HIV/AIDS AMONG PARTICIPATING MIDWIVES

For each statement below, please circle true (T), false (F), or I don't know (DK). If you don't know, please do not guess; instead, please circle DK.

	Statements	**True**	**False**	**Don't know**
20.	Human Papillomavirus (HPV) can cause HIV	T	F	DK
		1	2	3
21.	Soon after infection with HIV a person develops open sores on his or her genitals (penis or vagina).	T	F	DK
		1	2	3
22.	If a women tests positive for HIV the test can tell how sick the person will become	T	F	DK
		1	2	3
23.	There is a vaccine available to prevent women from getting HIV/AIDS	T	F	DK
		1	2	3
24.	Human Papillomavirus (HPV) is caused by the same virus that causes HIV	T	F	DK
		1	2	3
25.	It is easier to get HIV if a person has another Sexually Transmitted Disease	T	F	DK
		1	2	3
26.	Genital Herpes is caused by the same virus as HIV	T	F	DK
		1	2	3
27.	Women with HIV can transmit it to their baby while they are pregnant	T	F	DK
		1	2	3
28.	Retrovirus can cause HIV in pregnancy	T	F	DK
		1	2	3
29.	The normal CD4 count is 500 – 1200 cells/mm	T	F	DK

30.	Artificial rupture of the membranes is preferable in MTCT	T	F	DK
		1	2	3
31.	A triple- drug antiretroviral regime is used in PMTCT	T	F	DK
		1	2	3
32.	Caesarean section is preferably model of delivery to the HIV/AIDS positive mothers	T	F	DK
		1	2	3
33.	There is a effective treatment of HIV/AIDS positive mothers	T	F	DK
		1	2	3
34.	Is it possible that when the mother or the father is HIV positive, their newborn can be HIV negative	T	F	DK
		1	2	3
35.	Would you encourage breastfeeding for more than 6 months to a woman you know is HIV/AIDS positive	T	F	DK
		1	2	3
36.	A pregnant woman who is HIV positive it means that her spouse/husband is also HIV positive	T	F	DK
		1	2	3
37.	Persons infected with HIV will likely develop antibodies within 6 months	T	F	DK
		1	2	3
38.	HIV-positive newborns sometimes revert to HIV-negative status	T	F	DK
		1	2	3
39.	Blood and semen are the only bodily fluids to transmit HIV	T	F	DK
		1	2	3
40.	Even outside the body, HIV is very hard to kill	T	F	DK
		1	2	3
41.	Recurrent vaginal yeast infections or cervical cancer may indicate HIV infection in women	T	F	DK
		1	2	3
42.	HIV encephalopathy is an indication for anti-viral treatment	T	F	DK

SECTION V (B): KNOWLEDGE ON HIV/AIDS AMONG PARTICIPATING MIDWIVES

Please rate each item on a scale the extent in which you agree or disagree. Indicate by Ticking in appropriate space based on the following scale: Strongly Agree [SA]; Agree [A]; No Opinion [NO]; Disagree [D] and Strongly Disagree [SD]

	Items/ Statements	**SA**	**A**	**NO**	**D**	**SD**
43.	HIV/AIDS spreads due to immoral behaviour	1	2	3	4	5

SECTION VI (A): ATTITUDES ON HIV/AIDS AMONG PARTICIPATING MIDWIVES

Please rate each item on a scale the extent in which you agree or disagree. Indicate by Ticking in appropriate space based on the following scale: Strongly Agree [SA]; Agree [A]; No Opinion [NO]; Disagree [D] and Strongly Disagree [SD]

	Items/ Statements	**SA**	**A**	**NO**	**D**	**SD**
44.	Do you think that HIV – positive mothers have themselves to blame	1	2	3	4	5
45.	I would prefer not to care for HIV/AIDS positive mothers	1	2	3	4	5

SECTION VI (B): ATTITUDES ON HIV/AIDS AMONG PARTICIPATING MIDWIVES

For each statement below, please circle true (T), false (F), or I don't know (DK). If you don't know, please do not guess; instead, please circle DK.

	Statements	**True**	**False**	**Don't know**
46.	Am scared that I might get infected by HIV while working as midwife	T	F	DK
		1	2	3
47.	Midwives who is HIV positive should assist in the delivery of women	T	F	DK
		1	2	3
48.	My awareness of HIV/AIDS has made me fearful about caring for pregnant women with HIV/AIDS	T	F	DK
		1	2	3

SECTION VII (A): PRACTICES ON HIV/AIDS AMONG PARTICIPATING MIDWIVES

For each statement below, please circle true (T), false (F), or I don't know (DK). If you don't know, please do not guess; instead, please circle DK.

	Statements	**True**	**False**	**Don't know**
49.	As a midwife delivering a baby I always use double gloves	T	F	DK
		1	2	3

SECTION VII (B): PRACTICES ON HIV/AIDS AMONG PARTICIPATING MIDWIVES

Please rate each item on a scale the extent in which you agree or disagree. Indicate by Ticking in appropriate space based on the following scale: Strongly Agree [SA]; Agree [A]; No Opinion [NO]; Disagree [D] and Strongly Disagree [SD]

	Items/ statements	**SA**	**A**	**NO**	**D**	**SD**
50.	It is dangerous for the midwives to care for HIV/AIDS positive mothers	1	2	3	4	5
51.	Midwifes should be allowed to refuse to delivery for mothers with HIV/AIDS	1	2	3	4	5

52. (52) what should be done to prevent discrimination against HIV/AIDS positive mothers by the midwives…….

……

APPENDIX III: LETTER OF APPROVAL FROM KNH ETHICS REVIEW COMMITTEE

KENYATTA NATIONAL HOSPITAL
Hospital Rd. along, Ngong Rd.
P.O. Box 20723, Nairobi.
Tel: 726300-9
Fax: 725272
Telegrams: MEDSUP", Nairobi.
Email: KNHplan@Ken.Healthnet.org

Ref: KNH-ERC/ A/128

9th June 2011

Mfalamagoha Johari
School of Nursing Sciences
College of Health Sciences
University of Nairobi

Dear Mr. Johari

RESEARCH PROPOSAL: "ASSESSING KNOWLEDGE, ATTITUDES AND PRACTICES OF MIDWIVES TOWARDS HIV/AIDS POSITIVE MOTHERS DELIVERING IN K.N.H,LABOUR WARD." (P133/04/2011)

This is to inform you that the KNH/UON-Ethics & Research Committee has reviewed and **approved** your above revised research proposal . The approval periods are 9th June 2011 8th June 2012.

You will be required to request for a renewal of the approval if you intend to continue with the study beyond the deadline given. Clearance for export of biological specimens must also be obtained from KNH/UON-Ethics & Research Committee for each batch.

On behalf of the Committee, I wish you a fruitful research and look forward to receiving a summary of the research findings upon completion of the study.

This information will form part of the data base that will be consulted in future when processing related research study so as to minimize chances of study duplication.

Yours sincerely,

PROF A N GUANTAI
SECRETARY, KNH/UON-ERC

c.c. The Deputy Director CS, KNH
The Dean, School of Nursing Sciences, UON
The HOD, Records, KNH
Supervisors: Dr. Jennifer Oyieke, School of Nursing Sciences, UON
Dr. Blasio Omuga, School of Nursing Sciences, UON
Dr. Grace Omoni, School of Nursing Sciences, UON

APPENDIX IV: LETTER OF APPROVAL FROM NATIONAL COUNCIL OF SCIENCE AND TECHNOLOGY

REPUBLIC OF KENYA

NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY

Telegrams: "SCIENCETECH", Nairobi
Telephone: 254-020-241349, 2213102
254-020-310571, 2213123,
Fax: 254-020-2213215, 318245, 318249
When replying please quote

P.O. Box 30623-00100
NAIROBI-KENYA
Website: www.ncst.go.ke

Our Ref: NCST/RRI/12/1/MED011/97

Date: 20th July, 2011

Mfalamagoha Johari
University of Nairobi
P.O BOX 30197
NAIROBI

Dear Sir,

RE:RESEARCH AUTHORIZATION

Following your application for authority to carry out research on **"Assessing knowledge, attitudes and practices of midwives towards HIV/AIDS positive mothers delivering in Kenyatta National Hospital, Labour ward".** I am pleased to inform you that you have been authorized to undertake research in **Nairobi KNH,** Kenya for a period ending **30th March , 2012**

You are advised to report to **The Director Kenyatta National Hospital** before embarking on the research project.

DR. M.K. RUGUTT,PhD,HSC
DEPUTY COUNCIL SECRETARY
Copy to:

The Director
Kenyatta National Hospital
P.O BOX 20723, NAIROBI

APPENDIX V: MAP OF KENYATTA NATIONAL HOSPITAL