DETERMINANTS OF ELIMINATION OF MOTHER TO CHILD TRANSMISSION OF HIV AMONG PATIENTS AT THE NAKURU COUNTY REFERRAL HOSPITAL, KENYA

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A RESEARCH THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF PUBLIC HEALTH (MONITORING AND EVALUATION) IN THE SCHOOL OF PUBLIC HEALTH AND APPLIED HUMAN SCIENCES OF KENYATTA UNIVERSITY

JUNE, 2022

DECLARATION

This thesis is my original work and has not been presented for a degree in any University

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ABBREVIATION AND ACRONYMS

ANC	Antenatal Care
AIDS	Acquired Immune Deficiency Syndrome
ART	Anti-Retroviral Therapy
EID	Early Infant Diagnosis
HIV	Human Immune deficiency Virus
KAIS	Kenya Aids Indicator Survey
KDHS	Kenya Demographic and Health Survey
KEPH	Kenya Essential Package For Health
MTCT	Mother to Child Transmission of HIV
NASCOP	National AIDS and STI Control Programme
PGH	Provincial General Hospital
PMTCT	Prevention of Mother to Child Transmission
STD	Sexually Transmitted Disease

DEFINITION OF TERMS

These are operational terms used in this study with their definitions as indicated below:

Mother to Child transmission	Refers to the HIV infected mother passing HIV virus to un born Child during pregnacy
Determinants of MTCT	are the factors that are likely to contribute to mother to child transmission of HIV
MTCT transmission rates	refers to the proportion of children infected to the pregnant women population
Stigma	is negative attitudes and beliefs about people with HIV
Discrimination	is the act of treating people living with HIV differently than those without HIV
Anti Retro viral Therapy	of treatment with drugs that inhibit the ability of the human immunodeficiency virus (HIV) or other types of retroviruses to multiply in the body.
Ceasarian Section	also known as C-section, or caesarean delivery, is the surgical procedure by which one or more babies are delivered through an incision in the mother's abdomen, often performed because vaginal delivery would put the baby or mother at risk

ABSTRACT

Globally, 37.6 million people living with HIV around the world, 67% live in sub-Saharan Africa. Out of the 200,000 new diagnoses of HIV in Africa in 2021, young women and adolescent girls aged 15-24 made up 27% of those new cases. The United Nations reported 1,000 new infections per week in this group. Regionally, out of the 20.7 million adults living with HIV in the region in 2018, 12 million were women: young women (aged 15–24 years) account for 26% of new HIV infections: In Kenya, tremendous progress in slowing down spread of HIV has been made with new infections declining by 68.4% between 2013 and 2021.Deaths attributed to HIV/AIDS had dipped by 67% from 58,446 people in 2013 to 19,486 in 2021.Increased number of people on life-saving antiretroviral treatment ;Rise by 83%, from 656,369 in 2013 to 1,199,101 in 2021 adults prevalence stands at 4.9%;Women at 6.6% twice that of men (3.1%) as per Kenya Population-based HIV Impact Assessment (KENPHIA) 2018 survey Mother to child transmission (MTCT) of HIV, is the main route of HIV infection among infants born by HIV positive mothers. An estimated 50,000 to 60,000 infants contract HIV infection annually in Kenya through their mothers **.**Kenya rolled out a countrywide Prevention of Mother to Child Transmission (PMTCT) programme to reduce the HIV infection in children because the main route for HIV transmission among children is through birth .In Kenya, an estimated 37,000 to 42,000 infants are infected with HIV annually due to MTCT.During pregnancy, about 5 to 8 percent of HIV-exposed babies become infected through transmission across the placenta. In Kenya, the national MTCT rate for the year 2021 was 3.2% while the rate in Nakuru County was reported to be 4..9% with the highest reported rate being in the month of march 2021 at 9.4%.Currently the MTCT rate reported in Nakuru county (4.9%) is much higher than the National rate (3.2%).The causes of this sustained high MTCT rate are not well documented hence this study at Nakuru County Referral Hospital to investigate these determinants. The Study objective was to investigate the determinants of eMTCT among patients at Nakuru county Level 6 Referral Hospital, Kenya. A cross sectional analytical research study was carried out with data collected from ANC mothers, key informants and FGD participants using structured questioners, key informant interview guides and FGD guides. The analysis of the data collected from the ANC clients revealed that nearly seventy percent of mothers had no knowledge of services provided to seropositive pregnant mothers to reduce the risk of transmission to unborn child. Further analysis revealed that low male involvement and participation, Stigma, and discrimination, peer pressure, social groups, religious sects, ceremonies (funerals), visiting sick people in the community were key social determinants that sustained high transmission rates in the county. Cultural beliefs, practices and taboos had a significant contribution to the high MTCT rates that were reported in the county. Low level of knowledge contributes significantly to the high MTCT rate reported in Nakuru Referral Hospital as were social cultural factors. It was recommended that Ministry of Health in collaboration with Health implementing partners and all health actors to develop promotional messages and information on eMTCT and disseminate them to all pregnant women attending ANC at all health facilities in the country. Socio mobilization and awareness on Prevention of Mother to Child Transmission program to be scaled up to empower women with knowledge on PMTCT. Community and political leaders to be enlightened by health implementing partners on good health practices to discourage pregnant women from their negative cultural beliefs and practices to promote health seeking behavior among these women. Health education and health talks to pregnant women to focus more on the importance of adherence to clinic appointments during their pregnancy life to benefit from services provided.

CHAPTER ONE: INTRODUCTION

1.1 Background information

Globally, 37.6 million people living with AIDS worldwide, 67% live in sub-Saharan Africa. In 2021, out of the 200,000 new HIV diagnoses in Africa, adolescent girls and young women 15-24 years old made up 27% of those new cases. 1,000 new infections were reported by the UN per week for this population. Regionally, in 2018, out of the 20.7 million adults with HIV, 12 million are women; young women (15–24 age bracket) account for 26% of new HIV infections: UNAIDS 2020

In Kenya, tremendous progress in reducing HIV spread; Between 2013 and 2021 there was a decline in new infections by 68.4%. Deaths resulting from HIV/AIDs had dropped by 67% to 19,486 in 2021 from 58,446 people in 2013. Number of persons on life-saving antiretroviral treatment went up by 83%, to 1,199,101 in 2021 from 656,369 in 2013. Prevalence stands at 4.9%; Women at 6.6% twice that of males (3.1%) as per Kenya Population-based HIV Impact Assessment (KENPHIA) 2018 survey

Interventions to reduce PMTCT in Kenya have been intergrated in other services provided at health facilities for instance maternal child health services, HIV testing during ANC attendance for identification of antenatal women with HIV/AIDS., infants and maternal clients on ARVs, infant feeding programs and contraception services meant to delay pregnancies (NACC, 2010). As it is well known, PMTCT program was launched in Kenya in the year 2000 and hasn since seen the expansion of the program in the initial 3 years as per NASCOP 2009 report. There has been tremendous scale up of the program since 2003 specifically in HIV testing services reports of 65% up from 32% (WHO, UNAIDS & UNICEF, 2007), of pregnant women who underwent HIV/AIDS test while attending Antenatal Clinic services (WHO, UNAIDS & UNICEF, 2009), “a rise from 32% in 2005 (WHO, UNAIDS & UNICEF, 2007); Similarly, in 2008, 56% of pregnant women living with HIV received ARV medication for PMTCT.”

The goal plan for eMTCT launched in 2010 recognizes the significant contribution of HIV to child and maternal mortality and the impact of maternal survival on child survival prioritizes MTCT of HIV elimination and to keep mothers alive. The Kenya Government has taken up the eMTCT initiative and believes that as a country, we can eliminate MTCT of HIV and keep mothers alive. Consequently, Kenya launched a campaign to ensure achievement of this goal by 2015. Its achievement would be an important milestone towards a HIV free generation in this country. In Kenya, since 2004, 32,000 child infections have been avoided through PMTCT initiatives. Despite the efforts made in the country, the transmission rate national MTCT rates are rated at 3.2% (2021 while in Nakuru County is 4.9% with the highest reported rate in the month of march 2021 at 9.4%) according to the MOH, National AIDS/STD Control Program (NASCOP) Early Infant Diagnosis database. Barier factors hindering the achievement of low eMTCT rates were not known and there is no study that has been conducted to identify them and this is what motivated me to conduct this study at Nakuru County Referral Hospital which is the main referral facility in the entire county of Nakuru.

1.2 Problem Statement

Kenya has a national Mother to Child transmission rate of 3.2% and strives to maintain this at < 5% as per the Global Initiative adopted. Annually, approximately 37,000 to 42,000 infants are infected with HIV through MTCT. 5-8% of HIV-exposed babies are infected during pregnancy, through transmission across the placenta. The National MTCT rates stands 3.2% (2021.while that of Nakuru County is 4.9% the same period where some months reported a higher MTCT rate of 9.4%. Nakuru County Referral Hospital which was the study area reported MTCT rates between the ranges of 1.8-5.3%. There was need to investigate the factors contributing to the high MTCT rates being reported at this facility since the determinants of the sustained high rate are not well documented. This study therefore sought to investigate determinants to the high MTCT rates reported in Nakuru referral hospital and came up with key findings and recommendations for implementation.

1.3 Justification

Despite the existence of eMTCT services in the health facilities, Nakuru County Referral Hospital still reports a high MTCT transmission rate between the ranges of 1.8-

5.3% of 2020.This is sustained by various determinants that had to be investigated. The study interrogated the possible determinants to establish the factors that influence the sustained high mother to child transmission rate

Determinants of the sustained high rate are not well documented therefore necessitating the need to carry out the study in Nakuru County referral Hospital in Nakuru County. The research was undertaken in Nakuru Level 6 Referral Hospital based on the trends of high MTCT rates (between 4.9% - 9.4%) that have been reported which are much higher than the National MTCT rates (3.2%).

Nakuru County was selected for this study due to higher rates that were reported as compared to the MTCT rates reported in neighboring counties as follows Nakuru (4.9), Kericho (0.6), Laikipia (1.1), Nyandoro(0.7), Samburu(0.0), Kiambu (2.4), Bomet (3.3), Baringo (1.3) hence study conducted to investigate the determinants of the sustained high rates in the county.

1.4 Null Hypotheses

1. Level of knowledge does not affect eMTCT rates among pregnant women attending Antenatal Clinic at Nakuru County Referral Hospital.
2. There is no relationship between social-cultural factors and high MTCT rates among pregnant women at attending ANC clinic at Nakuru County Referral Hospital.

1.5 Research questions

i) What is the level of knowledge on eMTCT among the respondents at Nakuru County Referral Hospital?
ii) What socio cultural determinants affect e MTCT among pregnant women at this facility?
iii) What are cultural beliefs and practices that contribute to high MTCT rates among pregnant women at this facility?
iv) What strategies could be deployed to lower high MTCT rates among pregnant women?

1.6 The Study Objectives

1.61 General Objective was;

To investigate the determinants of elimination of mother to child transmission of HIV among patients in Nakuru county referral hospital, Kenya

1.6.2 Specific Objectives were;

i) To determine knowledge level on eMTCT among patients at the facility.
ii) To establish the social and cultural determinants affecting eMTCT among pregnant women seen in Nakuru Referral Hospital.
iii) To identify cultural beliefs and practices that contribute to MTCT high rates among pregnant women at this facility
iv) To analyze various ways of lowering the high MTCT rates among pregnant women at this facility

1.7 Study significance

The study was beneficial to the pregnant women and the Health facility as it provided findings that led to recommendations to be implemented for improvement of health care delivery services not only in this particular facility but also in all other facilities in the country.

1.8 Study Limitations

The study was undertaken in one institution only – Nakuru Level 6 Referral Hospital which is a referral facility, hence limiting the generalization of the results to a similar health care setting. It focused on pregnant women who have specifically come for ANC services hence had limited opportunity for pregnant women visiting the facility for other health services to participate due to the scope of this study.

The conceptual framework Fig 1 illustrates that Elimination of Mother to Child Transmission of HIV is dependent to various factors such as Knowledge factors, social factors, cultural beliefs and practices.

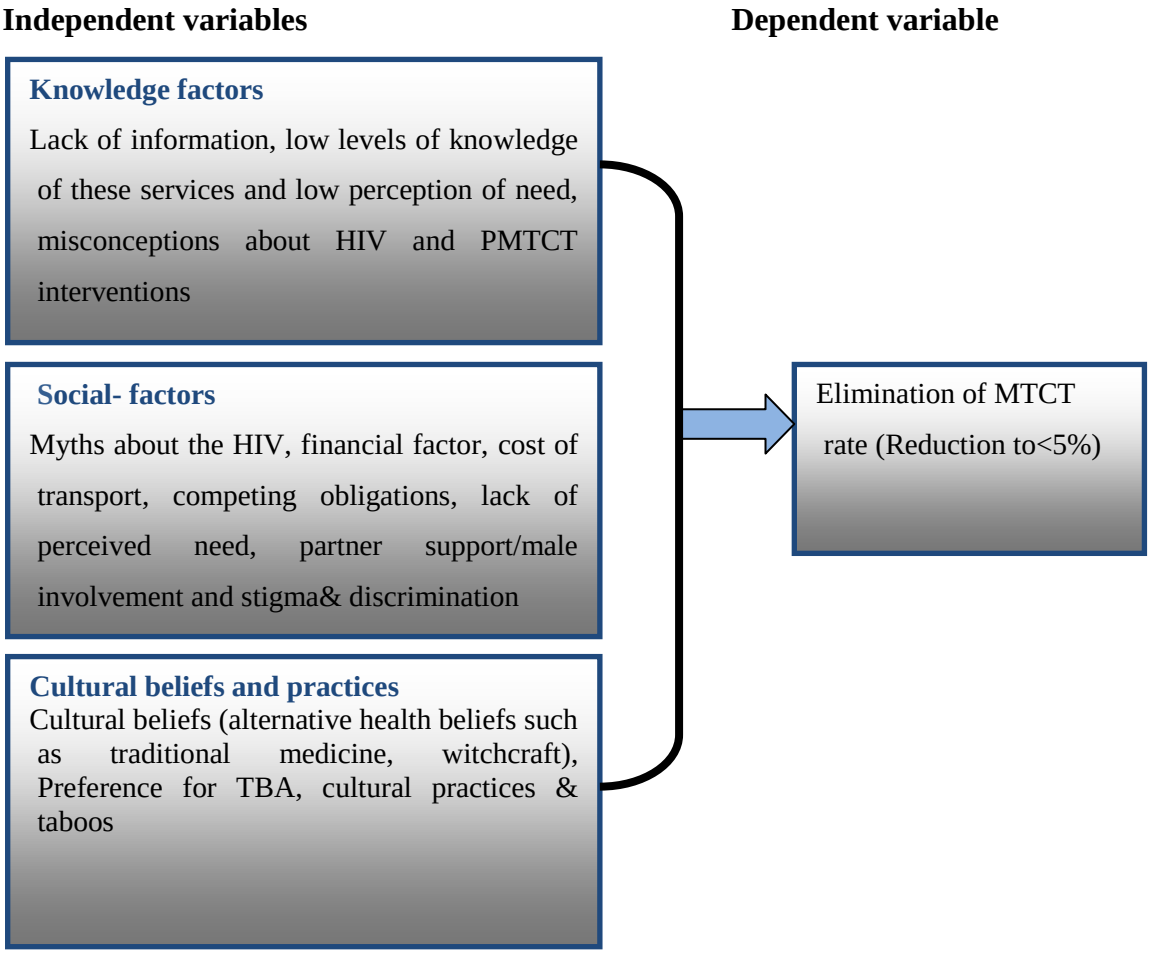


Figure 1.1: Conceptual framework for eMTCT

CHAPTER TWO: LITERATURE REVIEW

2.1 Global Modes of HIV Transmission

This chapter provides in-depth information on elimination of mother to child transmission of HIV and how the program helps to reduce the infection rates to their unborn child. It describes MTCT as the main route of infection providing comprehensive information on implementation globally, regionally and in various countries within the East, central and South Africa.

All age groups can be affected by HIV and AIDS which is the leading cause of child mortality and morbidity globally. Majority of Child infections in the ages of less than 15 years passed on to them via MTCT during delivery (MTCT of HIV is a major public health problem for countries in the sub-Saharan African region. In 21 priority countries including Ethiopia before the Global Plan launch in 2009, the overall mother-to-child HIV transmission rate was 28%, this has been reduced to 14% in 2014. Between 2010 and 2018, prevention of an estimated 1.4 million of children HIV infections were averted thanks to PMTCT programs.

AIDS epidemics Global summary in 2018 approximated about deaths close to 100,000 AIDS-related among children under 15 years and about half the number of those with HIV as probable as pregnant mothers to get treatment. There is urgent need to address such great disparities if not treated, fifty percent of children with HIV are likely to die before they are two years old. Among the most serious affected continent is Africa with HIV spreading being enhanced by various factors like health systems weakness, gender inequality and widespread poverty.

MTCT of HIV/AIDS plays a major role the reported number of new pediatric infections of children. Early infant diagnosis and subsequently treating the mothers is critical due to the risk of HIV MTCT which is higher among newly infected women females ye to be diagnosed and treated. Risks transmission from HIV mothers with no treatment to their unborm children is as high as 15–45%, heavily dependent on the duration and longevity of breast-feeding practices. Presence of appropriate implementation of PMTCT has the ability to reduce high MTCT rates hence reducing

final transmission rate to less than five percent among breastfeeding women and two percent or less in mothers who do not breastfeed as per reports of 2020.

According to national Strategic Plan for the Elimination of MTCT of HIV and Syphilis report low male partners' involvement, insufficient mother-baby pair tracking mechanisms after delivery and fear of stigma have been the cause of continued PMTCT in Ethiopia despite the increased coverage. Hence the increment of MTCT to 18.1% from 6% after stopping breastfeeding. It is worse in pastoralist communities.

MTCT of HIV, is the main cause of HIV infection that occurs infants born by HIV positive mothers. In Kenya, annually, an approximate of 50,000 to 60,000 infants contract HIV infection from mothers; Report on AIDS in Kenya, 2005. A countrywide MTCT programme was rolled out if Kenya with the aim of reducing infections to the young ones. in East and Southern Africa, 1.1 million children (0-14 years) had HIV in 2018 majorly transmitted through birth.

Globally, HIV is still a public health issue with 36.3 million people having succumbed to it and it cannot be cured. The disease is now a manageable chronic health condition since access to efficient care, treatment, diagnosis and prevention enables the HIV positive persons to lead a healthy and long life. By the end of 2020, 37.7 million persons were living with HIV with over 25.4 million being in WHO African regions.

In Kenya, approximately 37,000 to 42,000 children acquire HIV yearly through MTCT. 5-8% of HIV-exposed babies are infected during pregnancy, through transmission across the placenta. Evidence indicates that new children HIV infections may be prevented while mothers are kept alive as long as HIV positive pregnant mothers accessed ART for their health or as prophylaxis during their pregnancies , breastfeeding and during delivery periods. Child HIV infection reductions can be contributed to by ensuring that the HIV positive clients' unmet family planning needs.

2.2 Prevention of Mother to Child Transmission of HIV

Low utilization of PMTCT factors and maternal health services have been reported by researches that have explored determinant factors for MTCT services low utilization and reported several factors among them economic and socio-cultural factors. in South Africa, Eighteen PMTCT pilot programs evaluated reported that there was inability of meeting transportation costs for health services which was a major impediment to patients booking appointments for PMTCT services (Doherty et al., 2010). Gaillard and Melis, et al. (2002) reported that, stigma from public use of MTCT interventions like infant formula, relationship disruption and fear of domestic violence due to HIV positive status of women was reported by studies in Botswana as factors that preventing PMTCT programmes participation.

A study in Malawi by Bwirire et al. (2008) reported both socio-cultural factors (fear of household conflict and discrimination) and economic reasons (not able to cater for transportation costs to a health facility) as major issues to clients returning for PMTCT. Literature reviews and materials on limited utilization of maternal and child health services in Africa gives more insights in the engagement of women in maternal health services (WHO, 2008). According to Bazzano et al. (2008) though cultural factors like the linking of self-delivery with honor and courage and resource and structural barriers (inability to cater for delivery or transportation costs, distance to health care facility) are highly perceived as undermining utilization of maternity services, this result reports that delivery outside health care settings is contributed by perception. Mpembeni et al. (2007) cites that, there is evidence of linking delivery services and birth preparedness with child birth at a health care facility.

In the same case, compared to 2005 (20%) (WHO, UNAIDS & UNICEF, 2007), ARV medication for PMTCT were received by 56% of HIV pregnant females in 2008 (WHO, UNAIDS & UNICEF, 2009), compared to only 20% in 2005. The most key approach to make sure MTCT of HIV is avoided is the primary HIV infection prevention in young women by treating STDs, counseling and educating them within comprehensive multi-sectoral HIV AIDS control programmes scope.

When one compares the high rates of Transmission rates for the mother in the developing countries with low rates in the developed countries clearly demonstrates

the growing inequalities in global health. The rates in the developed nations are less than 2% since access is widespread for quality medical services, means to safely formula feed, planned caesarean sections (CS) and of anti-retroviral therapy (AJMWH, 2010).

In situations without interventions availed in reducing the risk, MTCT is 1 in 3 for HIV-infected women during the postnatal period, deliver, labour or pregnancy. This is to say out of one hundred infants born to HIV positive women, about 60-75 out of this will remain uninfected. A third of them will be infected thus 15 babies will be infected during childbirth, 5-10 babies infected during pregnancy, and about 5-15 of the children infected during breastfeeding due to their high dependency to breastfeeding practices and breastfeeding period.

As per the UNAIDS reports, in 2020, 85% of HIV pregnant females received ART for prevention of transmitting HIV to their babies at childbirth and pregnancy and in protecting their own health. Around the world, approximately 5,000 young women (15–24 years old) acquire HIV weekly. In 2020, of all new HIV infections, 63% were accounted for by girls and women in sub-Saharan Africa with the deaths reducing by 47% since 2010 and 64% since the peak in 2004. Compared to 1.3 million people who died in 2010 due to HIV-associated illnesses, 680,000 people died in 2020.

There are various interventions formulated specifically to respond to any occurring challenges and bottlenecks to mother to child HIV transmission in the country. Going by analytical view of the effective approaches needed to mitigate the risks of mother to child transmission, there exists modalities that negate more robust and efficacious care and treatment methods. Additionally, World Health Organization produced an up-to-date PMTCT guidance dependent on global evidence on how important it is to start ARVs early when pregnant and how effective postnatal ARVs are to baby and mother on MTCT reduction. In ensuring PMTCT programmes are successful in preventing MTCT, antenatal and PMTCT services should be accessible, efficient, and available; PMTCT programmes and antenatal services ought to be accessed early by mothers from the start to the end. The proportion of the public sector antenatal services providing PMTCT in the province has been increased to over 89 %. This

programme provides services charge free to all the pregnant women and its success in reducing MTCT of HIV relies on the participation of the pregnant women.

2.3 Implementation of PMTCT Program in Kenya

The program was implemented in 2000 in Kenya and has increase since 2003, with PMTCT interventions being offered by nearly 10,000 health facilities in 2012. 95.4% of females aged 15-54 years attended antenatal clinic (ANC) between 2008 and 2012, for a minimum of once within the pregnancy period, majority did their ANC first visit in their 4^{th} -6^{th} month of the pregnancy. Rates of testing HIV at ANC were high, they ranged to 94.4% among women who gave birth in 2021 from 89.2% in 2008. Of the women with HIV prior to or at ANC visit, 82.6% reported to have received maternal prophylaxis during breastfeeding, 67.1% during delivery and 71.2% during their pregnancy to prevent MTCT of HIV infection (Kenya AIDS Indicator Survey, 2012).

Kenya has approximately 40,000 to 50,000 HIV infected infants annually because of MTCT. This can occur through breast feeding practices, during delivery and in utero. Approximately 5 to 8% of HIV-exposed infants during pregnancy get infected via the placenta transmission. Delivery and labour pose a great transmission risk with 10 - 20 %t of exposed infants contracting the infection during this period.

Overally, the existence of the services uptake and PMTCT programmes given through the programmes that include ARV prophylaxis, HIV testing and counselling are very low. In the year 2006, it was reported that less than 82.6% of HIV-positive pregnant females got ARV treatment for HIV infection prevention to children from their positive mothers.

At the inception of the PMTCT programme in 2001, Nakuru County has slowly embarked on implementation of the programme in all its facilities among them the level 6 facility which is the Nakuru County Referral hospital. 16% of all new HIV infections are accounted for by young children and infants under 15 years due to MTCT. Most new infections are sexually transmitted among young people.

Kenya Aids Indicator Survey (KAIS 2012) reports that, almost half (46.5%) of adolescents and adults in Kenya were not aware that transmission of HIV can be through MTCT during pregnancy. 46.7% of individuals had a belief that a partner of

an HIV positive individual is always infected. 7 in 10 (68.8) women and 8 in 10 (80.9) believed to be at no or small risk of acquiring HIV infection themselves. HIV prevalence was ranging from2.1% to 3.5% among those who believed to be at no or small risk of being infected (Kenya Aids Indicator Survey 2012).

2.4 Prevention of mother-to-child transmission of HIV in Kenya and its importance

MTCT HIV prevention services are critically important in HIV prevention and treatment. MTCT of HIV is among the highest health issues in Kenya with approximately 37 000 - 40 000 babies infected yearly. The Joint United Nations Programme on HIV/AIDS indicated that, it is essential that PMTCT services be scaled up in eliminating MTCT by 2015. Certain challenges hindering the scale up are faced by the current PMTCT guidelines implementation. Even with some PMTCT service aspects like ART and counselling having achieved an improved coverage, attributes like disease staging have very limited coverage. PMTCT services are highly hindered by inconsistent guidelines implementation in low-income countries.

It is essential therefore to note that nearly 90 percent of women who delivered in health facilities in Kenya had attended ANC as per guidelines with only 10 percent not attending clinic for reasons not known. On the other hand, 57% of the pregnant women were tested and counseled for HIV while attending the antenatal care clinic meaning that 43 % declined to be counseled and tested for HIV at the clinic hence declining to accept PMTCT interventions at that entry point.

According to the Annual MOH ANC report 2013, Nakuru County Referral Hospital recorded a total number of attendances as 12,391. 15 % of who attended the clinic late. This leads to the question as to why the antenatal mothers would come for antenatal services at this facility as late attendees when they are expected to come as early as they become pregnant to start to be tested for HIV among other services to determine their HIV status and if tested positive to be enrolled to PMTC programme.
The HIV virus is passed to children by a significant portion of infected mothers during breastfeeding, delivery, labour or pregnancy. As indicated by current estimates, 90% of children infection is due to MTCT of HIV virus. Programme interventions focus shifted to more specific health services like PMTCT by national

response HIV and AIDS during the last two decades. The effort geared towards tackling economic, cultural and social factors putting women at risk of HIV transmission to newborns is little even though the government got current strategies geared towards reduction of MTCT after delivery by breastfeeding, labour and pregnancy and health improvement for HIV infected mothers. In Kenya, one realizes that HIV infection has had far reaching effects on child health services and child survival for the last couple of decades as the infection significantly contributed to pregnancy complications in several countries. In 2009, More than 370000 children globally were new HIV infections and most of them through MTCT with 260,000 children dying in the same year.

In 2009 An estimated 38.6 million population in Kenya it was reported that 1.55 million births were reported per annuum with a 6.3 percent HIV prevalence among pregnant mothers. and a total of 97,272 births who were exposed to HIV-infected women hence exposed to HIV Infection through MTCT. In this context, it is an assumption that 38,900 infants will be HIV infected with a 40 per cent transmission rate and there are no preventive interventions, there are various interventions responding to the emerging bottlenecks and challenges to MTCT countrywide. Analysis that has critically looked at various approaches' effectiveness are required in mitigating MTCT risk and proving insights necessitating adoption of treatment regimens and more efficacious care. Additionally, in 2009 World Health Organization produced an up-to-date PMTCT guidance dependent on global evidence on how important it is to start ARVs early when pregnant and how effective postnatal ARVs are to baby and mother on MTCT reduction.

It is noted that with proper interventions, MTCT can be reduced to below 5% and without interventions, the rates range from 15%-45%. The global community is committing itself to accelerating progress for MTCT prevention through an initiative with the goal of eliminating new pediatric HIV infections by 2015 and improvement child survival, newborn and maternal survival and health in HIV context.

2.5 Identified research gaps that this study has addressed

The study has not only identified the social cultural factors that have persistently influenced MTCT rates in the county particularly at the Nakuru level 6 County

referral hospital but also focused on the knowledge on MTCT of HIV/AIDS among pregnant women as a determinant of sustained MTCT rates. The study has indicated that pregnant women visiting health facilities with a knowledge level on MTCT HIV/AIDS prevention will embrace the Programme and most likely accept to be recruited into the Programme if they tested positive for HIV as a preventive intervention for HIV to their unborn child.

CHAPTER THREE: MATERIALS AND METHODS

3.1 Introduction

The study site was Nakuru County referral Hospital the main referral hospital in Nakuru County with a bed capacity of 600 beds. The hospital was elevated to a level 6 hospital from level 5 facility in 2019, this made it national referral hospital ranking the same as the Moi Teaching and Referral Hospital and Kenyatta National Hospital (KNH).

3.2 Study location

Study location was Nakuru Level 6 County Referral Hospital found in Nakuru County which a level 6 referral health facility is as categorized by the Kenya Essentials Package for Health (KEPH) within the health sector since 2019 .The hospital is a government owned facility with a 600-bed capacity and 68 cots. Services offered at this facility include curative outpatient services, curative in-patient services, comprehensive emergency obstetric care, maternal child health care services, antenatal, antiretroviral therapy, tuberculosis was selected for my study is because of high MTCT transmission rate of 4.9% with some months reporting as high as 9.4% and reasons for the high rate have not been investigated. Treatments, tuberculosis labs, tuberculosis diagnosis, radiology services (e.g. x-ray, ultra-scan), prevention of MTCT of HIV, HIV counseling and testing, integrated management of childhood illnesses, immunization services , growth monitoring and promotion, family planning among many others. The reason why this health facility

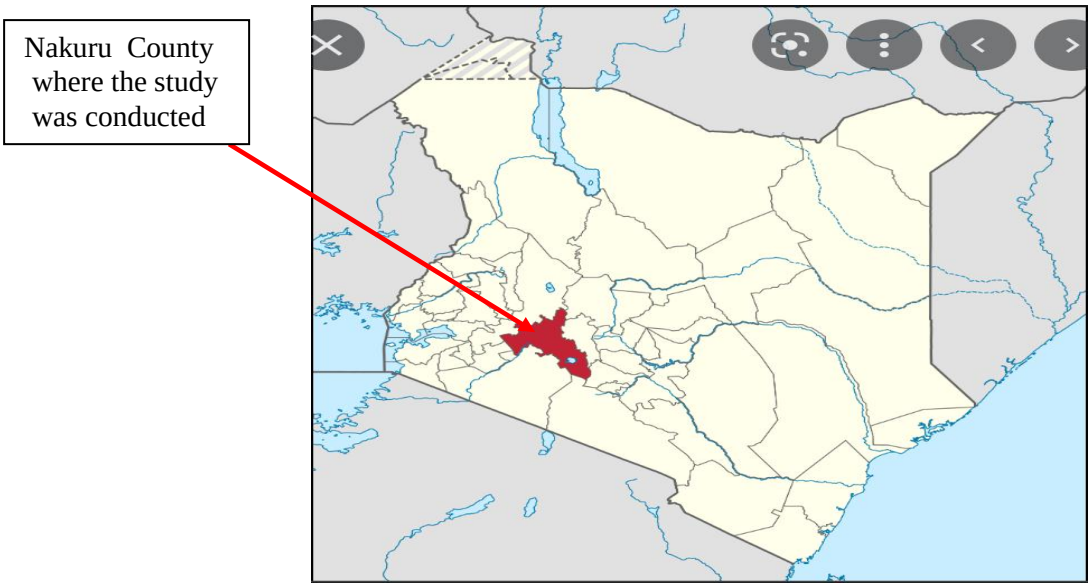


Figure 2 : The Kenyan map showing location of Nakuru county

This is a map showing Nakuru Level 6 County Referral Hospital in Nakuru County where the study was conducted.

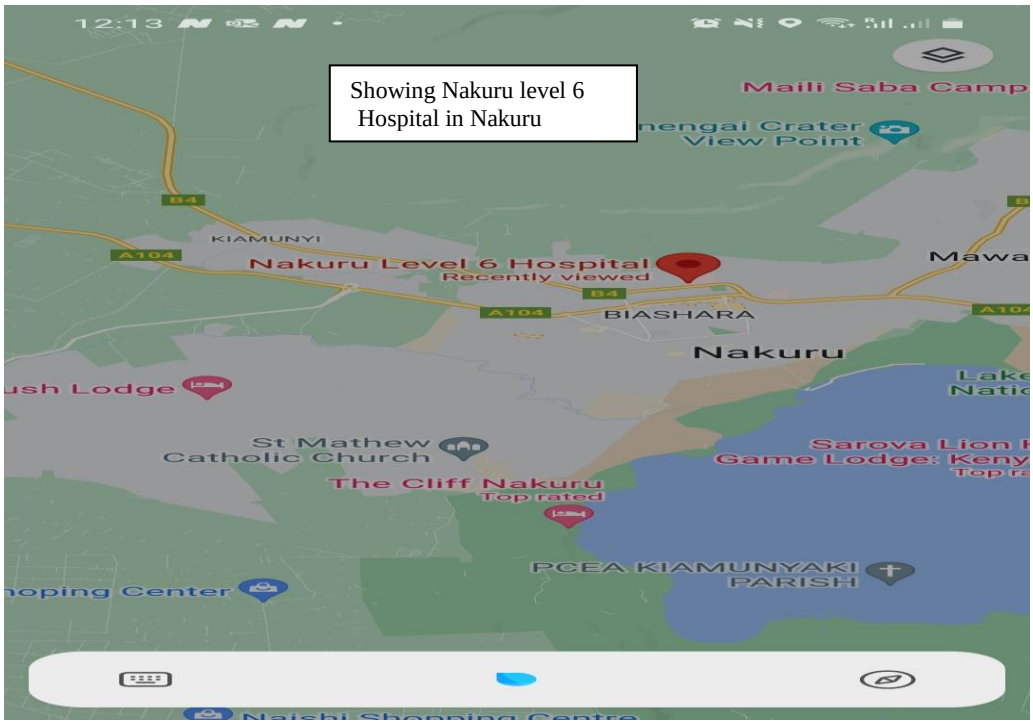


Figure 3 : Map of Nakuru level 6 Hospital in Nakuru County.

3.3 The Study Design

Cross sectional descriptive was used. Quantitative and qualitative methods were used to collect data. Three hundred and forty one pregnant women together with 54 key informants were selected for this study. Two FGDs were also conducted involving 16 participants.

3.4 Variables

Key dependent Variable–The dependent variable was elimination of MTCT of HIV. Key Independent Variable – The independent variables were Knowledge on eMTCT, social determinants, cultural beliefs and practices determinants to eMTCT among pregnant women.

3.5 The Study Population

Three hundred and Forty one (341) pregnant women of ages 15-49 years attending Ante Natal Clinic for their routine ANC checkups and fifty four (54) key informants (mainly ANC/PMTCT Staff) at the Nakuru Level 6 County Referral Hospital were selected as study participants. Two FGDs were conducted each group having 8 participants totaling to 16 participants for the two sessions.

3.5.1 Inclusion criteria

The respondents included in this study were;

i. Pregnant women who gave informed consent to take part in the study
ii. Those attending the ANC/PMTCT services at the health facility
iii. Those who have lived in the county for more than 6 months

3.5.2 Exclusion criteria

The respondents to be excluded in this study were

i. Not pregnant
ii. Refusal to consent to the study
iii. Pregnant women seeking other allied services other than ANC services at this facility

3.6 Sampling techniques and sample size determination

3.6.1 Sampling techniques

In selecting participants from the ANC clients, simple random sampling was used where all the pregnant women who visited the facility for services were randomly selected using the nth number rule where nth number is 2.Every second client coming in for ANC services was selected for the study. This ensured that all the selected pregnant women were the same characteristics and had an equal selection chance.

In selecting key informants respondent, purposive sampling was used to identify knowledgeable persons from the community who would provide needed information about the practices of the community such as community leaders, women social groups, women leaders, opinion leaders, community health leaders, village health extension workers, community strategy coordinators and all other relevant informants. Purposive sampling in identifying relevant and well informed respondents who provided reliable information during their participation in focused group discussions. The FGD respondents included clinic attendees, health facility staff, mid wives, doctors, nurses, clinical officers and other health personnel working at ANC department. Recruitment of respondents was done based on their willingness to take part. Consent was sought from those who participated. Health workers, (midwives, HIV counselors, nurses, etc.) were drawn from delivery and labor, antenatal care, HIV counseling and testing,

3.6.2 Sample size determination

A representative sample of all pregnant women attending ANC clinic (Sample frame) at Nakuru county referral hospital was used in this study and the rate of response was used in determining how findings were generalized to the population as a whole. For the results to be representative, the chosen sample was not only representative but also the respondents were to be representative as well.

The Fischer's et al 1991 formula) for population >10,000; below was used in calculating ANC clients' sample size participating in the research

$n = Z^2 P (1-P) / I 2$

Where: n = Sample size [where population> 10,000]

Z = Normal deviation at the desired confidence interval. In this case it will be taken at 95%, Z value at 95% is 1.96

P = Proportion of the population with the desired characteristic.

Q = Proportion of the population without the desired characteristic.

I 2 = Degree of precision; will be taken to be 5%.

Since the population proportion with the characteristic is unknown, then 50% will be used i.e.

$n = Z^2 P (1 - P) / I 2$

=1.96 2 × 0.5 [1 - 0.5] /[0.05][0.05] = 384.16

Since the ANC target population at Nakuru Level 6 County Referral Hospital is <10,000, the sample adjustment was done using the following formula. (Mugenda and Mugenda, 1999).

nf = n /1 + n/ N

Where: nf = The desired sample size for population <10,000

n = the calculated sample size

N = the total population.

nf = 384.16 /1 +(384.16/3000)

nf = 340.55= 341.

The desired sample size (nf) = 341

Therefore, three hundred and forty one (341) respondents participated in this study.

I gave an allowance of 10 percent of the population to cater for the non-respondents in the study which totaled to 376 respondents.

3.7 Construction of research instruments

Data collection instruments used were (i) a questionnaire with structured questions on socio-demographic characteristics, knowledge, attitude and socio-cultural beliefs/ practices administered to the pregnant women visiting the facility for antenatal care services (ii) Key Informant Interview-qualitative in-depth *interviews* were conducted to people who had a vast knowledge on health-related issues within the surrounding community of the health facility. The key *informant interviews* collected supplemental information from informers who included residents, professionals or

community leaders, women group leaders with first-hand knowledge about the community (iii) FGD-Focused group discussion sessions were conducted to collect information from health facility staff and clinic attendees. Each FGD was composed of 8 discussants making a total of 16 in total. Participants consented and willingly agreed to participate.

The tools were pretested in Nakuru North Sub county hospital-Bahati and the findings were used to provide clarity on the questions administered. 3 Health care workers who had participated in previous studies and four (4) research assistants were recruited based on their experience in conducting National surveys and studies, trained and eventually allowed to participate in piloting of the tools so as to make necessary adjustments to the tools ahead of field data collection. I made sure that security and confidentiality were upheld by use of password protected databases during data entry and use of external storage backups introduced to ensure maximum security of the data.

3.8 Pilot study and pre-testing of research instruments

Piloting of the tools was conducted on a small-scale sample population of pregnant women prior to conducting the main study. Nakuru North sub county hospital-Bahati was purposely sampled due to high number of ANC clients visiting this facility. The purpose of piloting and pretesting of the tools was to guarantee quality information was collected from the respondents, tools were well structured and questions were logically constructed. Some questions had to be rephrased in the questionnaires, Key informant interview tool and FGD tools to provide more clarity so as to collect quality information for the study.3 health workers who had participated in previous research studies and 4 research assistants to assist me the principle investigator to collect for this study.

3.9 Validity and reliability of research instruments

This was guaranteed through pre-testing of the tools by research assistants conducted in Bahati Hospital of Nakuru North Sub County. The findings of the pretest were used to modify the questions for ease of understanding of the respondents. This ensured that the tools were able to collect reliable responses from the participants.

3.10 Data Collection techniques

Qualitative and Quantitative data were collected. Questionnaire were administered to three hundred and forty one (376) respondents and their responses were recorded. Key informant interviews were conducted to key informers and all the responses were recorded and multiple data entry was done to ensure no variables were left out and errors were identified during data entry process. Data cleaning and verification was done using the hard copy questionnaires and clarification sought where data variables were not clearly understood. A data base was developed using a statistical package EpInfo version 7.0 that hosted the datasets ready for analysis

3.11 Data management and Analysis

Data was entered, validated and analysis done using Epi Info 7.0 software and SPSS software version 17.0. Chi-square and where applicable Fisher's exact probability was utilized for categorical variables. Data quality validation commands generated any errors introduced to the data, a feature that guaranteed the quality that the data collected. Qualitative data was transcribed (sourced from socio demographic data like age, no of respondents, sex etc) was analyzed by applying all the measures of central tendency e.g. Mean score of respondents, calculation of individual scores, responses percentage and response frequency. Content analysis was deployed in evaluating qualitative data (mainly explanatory responses) through identifying common themes frequency counts of similar answers to specific questions.

3.12 Logistical and Ethical considerations

The research was conducted after necessary approvals first and foremost approved by Kenyatta University Ethical Review Committee (ERC) and NACOSTI prior to commencement of the study. The researcher obtained a County level approval from the County Chief of Health of County Government of Nakuru as per the County protocol prior to conducting the study in Nakuru level 6 Referral hospital. Further authorization was obtained from the Chief Medical Superintendent of Nakuru Level 6 County Referral Hospital to allow this study to be conducted at this facility. Participants provided written informed consent to take part. This was done using a standard consent form for all the participants before administering the questionnaires to them.

Antenatal clients were included in the exercise after giving a written consent voluntarily and afterwards the Principal Investigator with the assistance of the research assistants administered the questionnaire. The patients withdrew freely from the study at any time if they wanted to. Various rooms were selecting for the conduction of interviews to avoid interfering with routine service delivery and to ensure that all the information was confidential. Before the exercise, sensitization meetings were held with the ANC service providers and the objective of the study well explained to them. Confidentiality of patient information was held and only the researcher accesses the database with their information. Storage of data was done in electronic format and printed copies kept in cabinets that were lockable and access restricted. The community was informed about this study through all county ANC facilities and chief Barazas.

CHAPTER FOUR: RESULTS

4.1 Introduction

The study investigated the determinants of elimination of MTCT among patients seen at Nakuru level 6 County Referral Hospital, Kenya. Results, discussion and interpretation of the study findings are presented in this section. Results presentation is both quantitatively and qualitatively. Respondents' responses were analyzed using EPiNfo, SPSS version 22 for windows, Stata version 14 and Ms Excel version 2016 packages. Multiple data entry was conducted to ensure all the data components were captured. The study was conducted between June to August 2020. A total of 376 pregnant women and 54 key informants mainly community leaders, women group members, Community Health extension workers participated as respondents in this study. Two Focused Group Discussions each with eight participants (Totaling to 16 respondents) were conducted. All the respondents participated in the study making 100.0% response rate. This high response rate was achieved by having a manageable representative sample, a rigorous field data collection activity conducted by the experienced and trained research assistants, cooperative respondents, user friendly data collection tools and follow up of respondents.

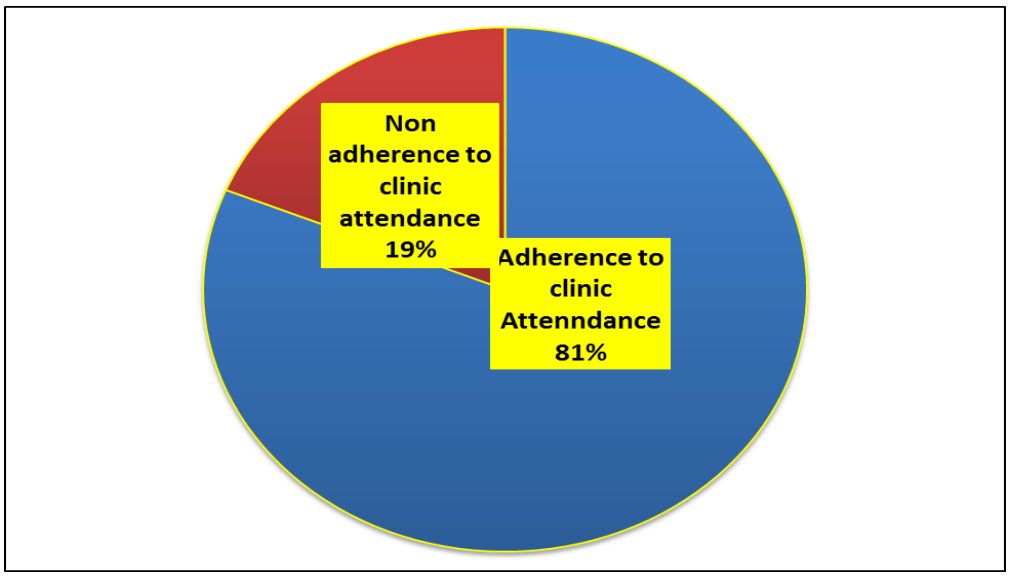


Figure 4.1 Adherence to clinic Attendance at the Health Facility

Those clients who adhered to clinic appointments were 81% whereas those who did not comply were 19%.

4.2 Respondents' Socio Demographic Characteristics

The subjects for the study comprised pregnant women of ages 15-49 years attending Ante Natal Clinic (ANC) for their routine checkups/antenatal profile and key informants (mainly ANC/PMTCT Staff) at the Nakuru Level 6 County Referral Hospital. Data on participants' personal attribute was collected. It entailed marital status, the age, residence, educational level and occupation.

4.2.1 Age

Majority (62.0%) were aged 14 - 29 years. About 35.2% were 30 - 39 years old. There were very few respondents aged 40 - 49 years (2.9%) as shown in Table 4.1.

Table 4.1: Age of respondent in (years)

Age bracket	Frequency	Percent	Cumulative Percent
14 – 29 years	212	62.2	62.0
30 – 39 years	125	36.6	98.6
40 – 49 years	4	1.2	100.0
Total	341	100.0	

Minimum = 14.0 years; Maximum = 49.0 years; Mean = 28.3; Std. Deviation = 5.4 years

The respondents' mean age was 28.3 with a 5.4 years s.d. A cumulative percentage of 98.6% of the respondents were aged between 14 – 39 years. Age have an influence on ability to make informed choices such as attendance to Antenatal Clinic (ANC) for their routine checkups. Hence, compared to 17% for Rift valley and 18% national figures, the structure had few teenage pregnancies (KDHS, 2009).

Frequencies of ages 14-29 and that 30-39 were tested and results indicated that the mean of the ages were not statistically significant.

Due to higher risks that they are exposed to, younger women are more probable of seeking antenatal services than their older counterparts. In his study, Bonitra (2007) noted that a great risk unknown by the mothers are carried by first pregnant women especially in adolescents.

4.2.2 Marital Status

Majority (85.7%) of the pregnant women were married. Figure 4.2. shows the results:

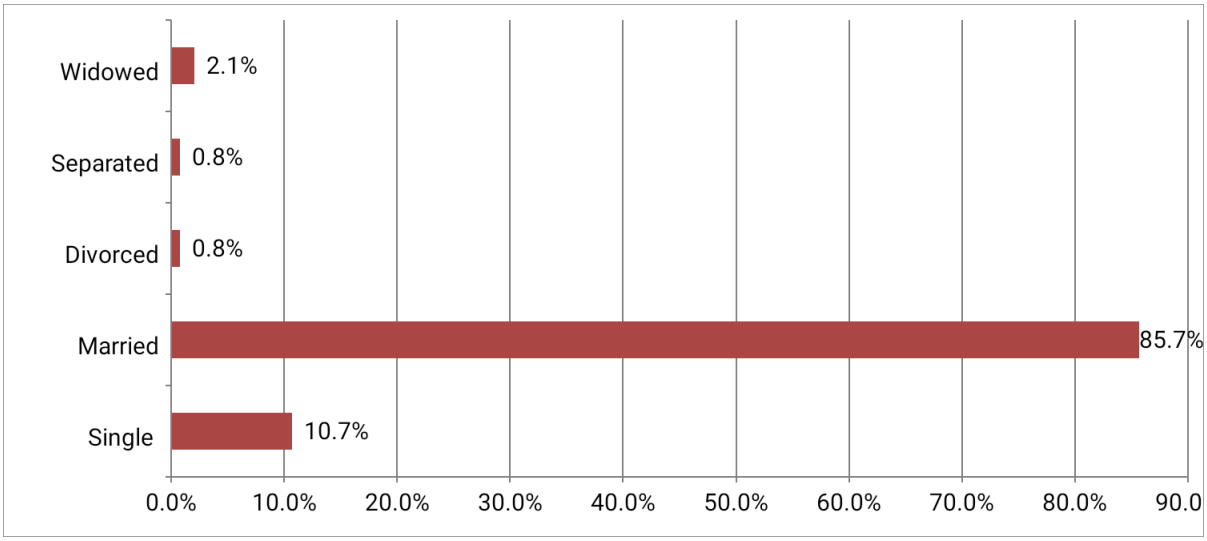


Figure 4.2. *R*espondents' Marital Status

Some of the respondents separated (0.8%), a few were windowed (2.1%), were single (10.7%) and divorced (0.8%).

4.2.3 Residence

Respondents in this study resided from a variety of backgrounds. Majority of the respondents resided in the urban setup (76.6%) as depicted in Figure 4.3

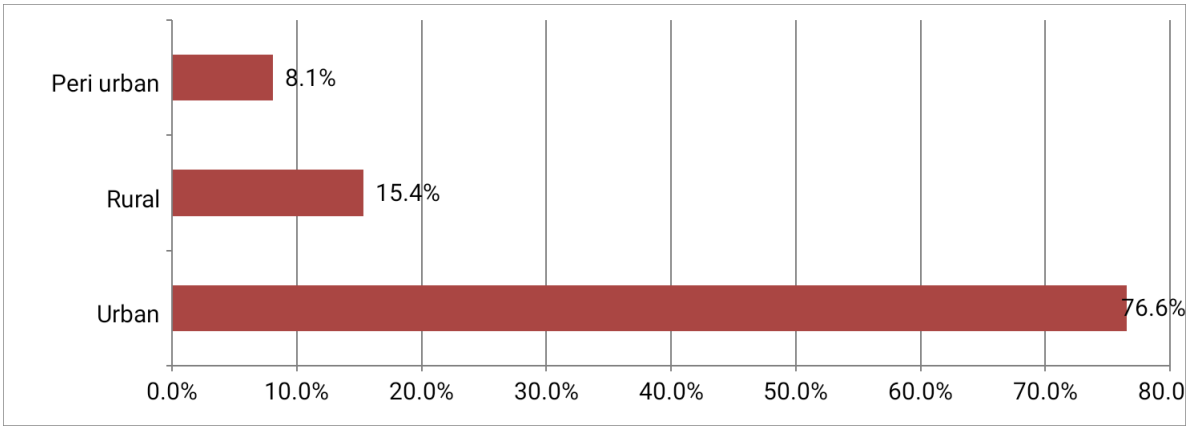


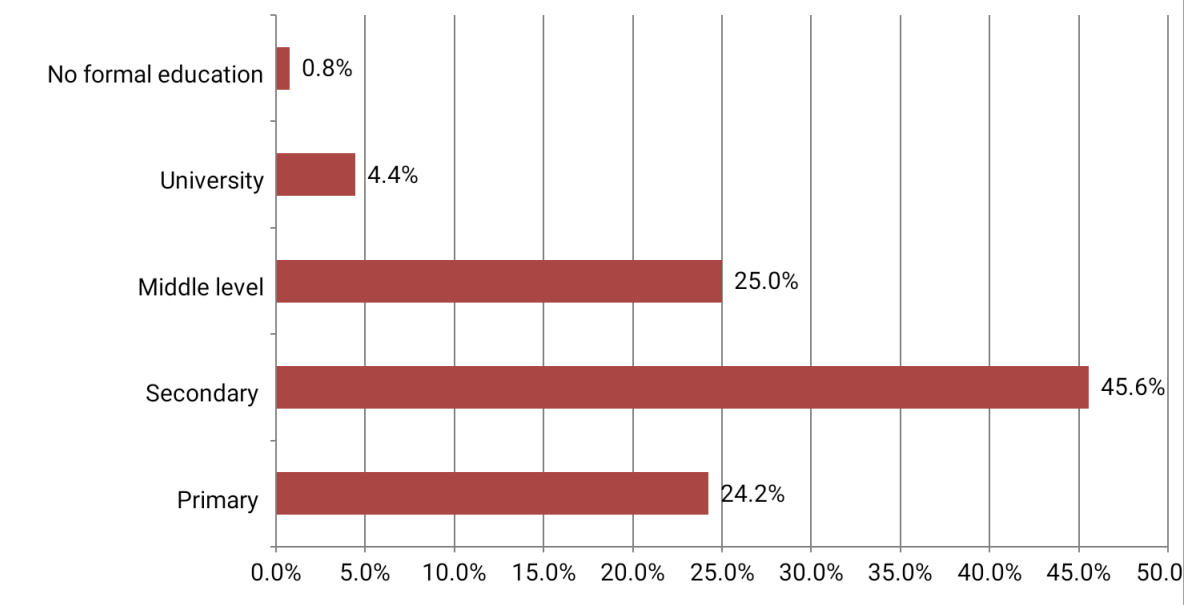
Figure 4.3: Respondent's residence (%)

Majority of the respondents who visit this facility were from urban dwelling represented by 77% while 15% resided in rural areas leaving 8% resided in peri-urban areas. Respondents visiting Nakuru Level 6 County Referral Hospital were mainly from the urban settlement which is attributed to the fact that the facility is a county

referral situated at the heart of Nakuru Central Business District and receives clients from a wider catchment area.

4.2.4 Education level

Most of the respondents had less than tertiary education level as shown in Figure 4.4

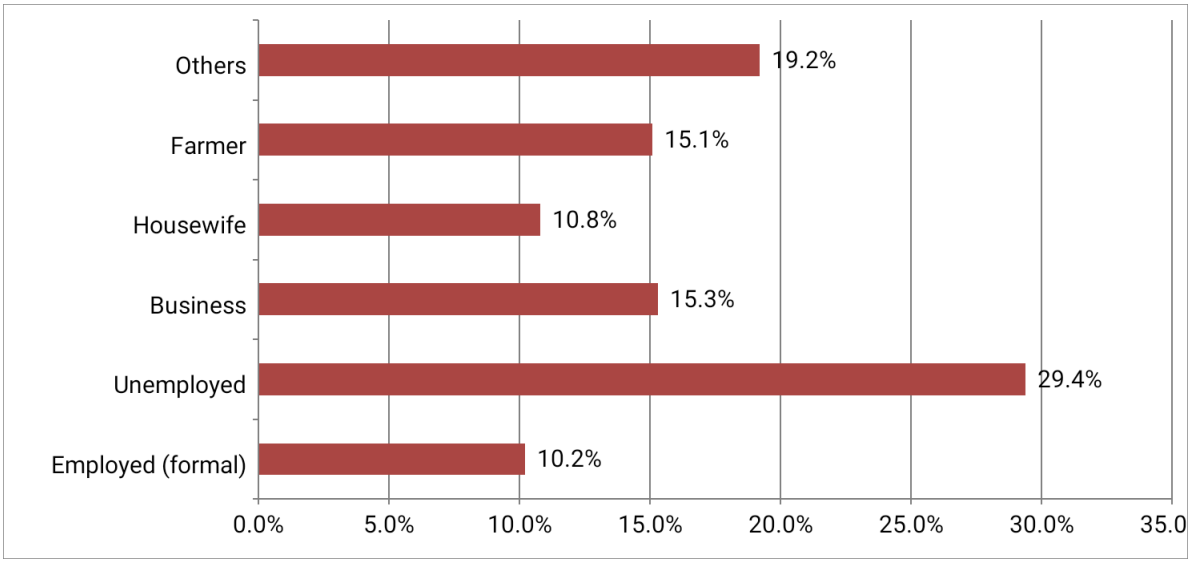


Proportions expressed as %

Figure 4.4: Education level for respondents as a %

The study reported that 4% of the participants had university education. A big proportion of pregnant women had attained secondary level of education (45.6%) while a quarter (25.0%) of the pregnant women had attended middle level colleges for their education. 24% of these participants had achieved primary education whereas the rest had attained low level of education informally represented by 1%.

The interviewed respondents were engaged in a variety of occupations as depicted in Figure 4.5



Proportions expressed as %

Figure 4.5: Occupation

Majority of the respondents were unemployed (29.4%). Some of the respondents were engaged in businesses (15.3%). About 10.8% of the respondents were housewives. About 15.1% cited their occupation as farming while 10.2% were formally employed. Other types of occupations accounted about 19.2% of the total responses which include casual labourers and others. More than 40% of the women can be assumed to lack formal forms of income. However, they still went for antenatal care service.

The table below summarizes the elimination of MTCT of HIV among pregnant women through their attendance to ANC clinics.

Table 4.2 Summary of social demographic characteristics of ANC patients at Health Facility n=376 with proportions expressed as a %

Age (yrs)	%	Marital status		Education status	
14-24	211 (62)	Widowed	7 (2.1)	No Formal Education	3 (0.8)
25-34	119 (35.2)	Separated	3 (0.8)	Primary	83 (24.2)
45-54	10 (2.9)	Divorced	3 (0.8)	Secondary	155 (45.6)
55 +	0 (0)	Married	293 (85.7)	Middle Level	85 (25)
		Single	38 (10.7)	University	15 (4.4)
Occupation Status		Residence			
Others	65 (19.2)	Periurban	95 (28)		
Farmer	51 (15.1)	Urban	198 (58)		
Housewife	38(10.8)	Rural	48 (14)		
Business	52 (15.3)				
Unemployed	100 (29.4)				
Employed (Formal)	35 (10.2)				

Figures in parenthesis represent % proportions

Table 4.3: Elimination of MTCT of HIV among pregnant women

eMTCT	Attendance	Freq.	Proportion expressed as %
Yes	Adherence to Clinic appointment	282	82.7
No	Non adherence to clinic appointment	59	17.3
Total		341	100.0

The results in Table 4.2 show that 82.7% adhered to the clinic appointment of antenatal clinic visits. However, 17.3% of the pregnant women did not adhere to their clinic appointments

4.3 Influence of level of knowledge of MTCT services among pregnant women attending ANC on elimination of HIV Transmission from mother to child

The first study objective sought to investigate the influence of knowledge level of MTCT services among pregnant women attending ANC on elimination of MTCT of HIV. In order to analyze this objective, a null hypothesis, "H_{02}: Level of knowledge of MTCT services among pregnant women attending ANC does not influence

elimination of MTCT of HIV" was formulated. This hypothesis was analyzed using regression analysis whose results are well indicated in table 4.4 below.

4.3.1 Level of knowledge of eMTCT

The level of knowledge here was measured using a questionnaire where different services of the PMTCT package were listed and respondents asked whether they have any knowledge of whether these services are provided ANC clinic or not. Those who had knowledge indicated Yes whereas those who did not have the knowledge indicated NO. The results were reported as indicated in the table below.

Table 4.4: Influence of Knowledge on eMTCT among pregnant women

Answers of respondents who claimed to have knowledge on eMTCT services provided (n=376) proportions expressed as %		
Services	Knowledge	No knowledge
PMTCT enrolment	87 (25.5)	254 (75.5)
Testing and Counselling	110 (35.2)	231(67.7)
Medicine given for prevention	92 (27.0)	249 (73.0)
Nutrition counselling	115 (33.7)	226(66.3)
Pyscho-Social Support	102 (29.9)	239 (70.1)

The results in Table 4.4 illustrate that majority of the pregnant women attending ANC clinic at Nakuru County Referral Hospital had no knowledge on all the eMTCT range of services provided at the health facility. The services included PMTCT enrolment (75.5%), Counselling and testing (67.7%), Medicine given for prevention (73.0%), Nutrition counselling (66.3%) and psychosocial support (70.1%)

4.3.2 Test of Hypothesis H_{O2} –(Level of knowledge)

The second hypothesis stated, "Ho_2: MTCT services knowledge level among pregnant women attending ANC does not influence elimination of MTCT of HIV. The hypothesis was tested using binary logistic regression. Table 4.5 shows the influence of knowledge on MTCT services among women who are pregnant and are attending ANC clinic at Nakuru County Referral Hospital.

Table 4.5: Influence of level of knowledge of eMTCT services among pregnant women attending ANC on eMTCT (PMTCT enrolment)

eMTCT	Odds Ratio	Std. Err.	z	P>z	[95% Conf.	Interval]
Knowledge of MTCT services	2.011	0.505	2.78	0.005	1.229	3.291
_cons	1.028	0.120	0.23	0.815	0.817	1.293

n=384; LR chi2 (4) = 8.04; Prob > chi2 = 0.005; Log likelihood = -260.5; Pseudo R2 = 0.22

The results in Table 4.5 reveal that the log likelihood for the fitted model of -260.5 and the log likelihood chi-squared value of = 8.04 (Prob> χ^2 = 0.005) indicate that the knowledge of MTCT services and eMTCT among pregnant women attending ANC clinic parameters are significant jointly at 5%. Pseudo R^2 of 0.22 also met the 20% statistical threshold that confirms that the eMTCT was well linked to the independent variables considered in the model (knowledge of MTCT services by pregnant women attending ANC clinic).

4.4 Social-cultural determinants of eMTCT among pregnant women

The second study objective sought to establish social-cultural determinants affecting eMTCT among pregnant females who attended ANC clinic at Nakuru County Referral Hospital. In order to analyze this objective, a null hypothesis was used to indicate social-cultural factors and high MTCT rates among pregnant women at attending ANC clinic at Nakuru County Referral Hospital had no association and tested using the statistical logic regression model whose results are indicated below in table 4.10 below.

4.4.1 Social and cultural factors relating to pregnancy, childbirth and new motherhood

Respondents indicated whether they received financial or any other support towards clinic attendance from their partners, spouses or care takers. The results are summarized in Table 4.6.

Table 4.6: Respondents receipt of financial and other support from their partners, spouses or care takers

Receipt of financial and other support	Frequency	Proportions expressed as %
Yes	292	85.6
No	49	14.4
Total	341	100.0

The results show that majority (85.6%) received support from their partners, spouses or care takers in form of finance or any other kind. However, 14.4% did not receive any support.

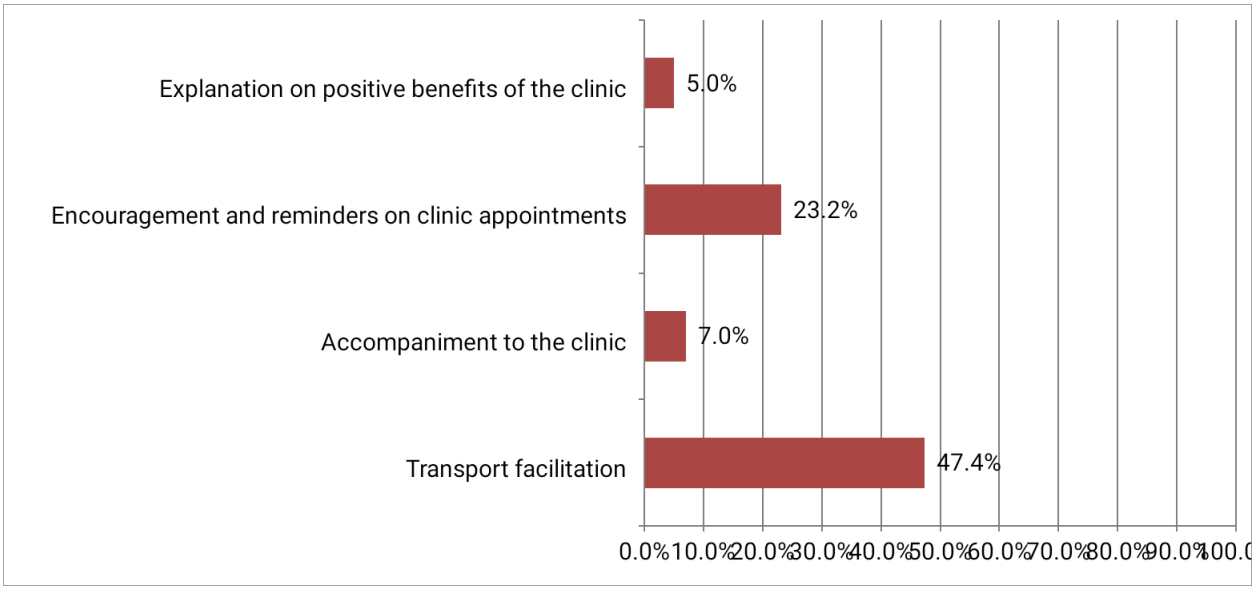


Figure 4.6: Social Factors (financial support, partner support) and others with proportions expressed as %

A number of support services was available to the pregnant women who attended ANC. The results in Figure 4.6 shows that about 47.4% of the respondents received transport facilitation. Others (23.2%) received encouragement and reminders on clinic appointments while 7.0% were accompanied by their partners, spouses or care takers to the clinic with 5.0% receiving explanation on positive benefits of the clinic.

4.4.2 Responses from key informants administered to investigate on social cultural factors as determinants of eMTCT among pregnant women.

Complementary tools were used to collect additional information for the study. Key informant schedules were used to record responses from 9 knowledgeable informants at the facility. included 2 doctors,3 nurses,2 community health workers,1 women group leader and 1 Community Health Extension worker. The responses were recorded using an interview schedule which had questions administered to the respondents as summarized below;

1. Socio factors as determinants of eMTCT –Pregnant women attending ANC clinic.

- Partner support
- Financial
- Advice from friends
- Church/religious sects
- Peer pressure

2. Social Cultural factors hindering women from attending ANC.

- Fear of being seen by neighbors and those who know them
- Mixing traditional medicine with ARVs
- Religion : plays a key role in hindering mothers to come to the clinic
- Disclosure of HIV sero status of clients by HCW
- Preference for TBA
- Male HCW examining female clients is culturally not acceptable
- Peer pressure

4.4.3 Test of Hypothesis H_{O1} - (Social-Cultural factors)

The second hypothesis stated, "Ho_1: Social-cultural factors do not influence eMTCT among pregnant females that attended ANC clinic at Nakuru County Referral Hospital". The hypothesis was tested using binary logistic regression.

Table 4.7 shows the influence of social-cultural factors on eMTCT among pregnant females who attended ANC clinic at Nakuru County Referral Hospital.

Table 4.7: Influence of social-cultural factors on eMTCT among pregnant women attending ANC clinic

eMTCT	OR (Odds Ratio)	Std. Err.	z	P>|z|	[95% Conf. Interval]	
Lack of financial or other support	1.078	0.162	0.50	0.617	0.803	1.447
Influence of cultural beliefs	0.641	0.282	-2.88	0.004	1.172	2.298
Influence of taboos	0.596	0.091	-3.37	0.001	0.442	0.806
Influence of traditions	0.368	0.620	-3.29	0.001	1.417	3.957
_cons	0.426	0.153	2.38	0.018	0.210	0.861

n=384; LR chi2 (4) = 20.37; Prob > chi2 = 0.000; Log likelihood = -254.3; Pseudo R2 = 0.38

The results in Table 4.10 reveal that the log likelihood for the fitted model of -254.3 and the log likelihood chi-squared value of = 20.37 (Prob> χ^2 = 0.000) indicate that the social-cultural factors and eMTCT among pregnant women attending ANC clinic parameters are significant jointly at 5%. Pseudo R^2 of 0.38 also meet the20% statistical threshold which confirms that the eMTCT area was well attributed to the independent variables considered in the model thus pointing at social-cultural factors to have an influence on eMTCT among pregnant women visiting ANC clinic for services.

4.4.4 Summary of key informant interview responses

Specific questions	Responses
Socio factors as determinants of eMTCT of pregnant women attending ANC clinic	Partner support (8%) , Lack of Financial (41%), Advice from friends (11%), Church/religious sects (7%), Peer pressure (11%) lack of partner support (8%)
Social Cultural factors hindering women from attending ANC:	Fear of being seen by neighbors and those who know them (13%) Mixing traditional medicine with ARVs (7%),Religion (7%) ,Preference for TBA (41%)
Negative cultural beliefs and practices among pregnant women	Miscarriage due to frequent visits to the clinic (37%),Portrays weakness (23%),
Taboos and beliefs	Preferred not to be seen while pregnant (36%),Not to be palpated by male Health workers (23%)
Strategies of lowering high MTCT rates	Availability of PMTCT services to all (41%),Providing PMTCT information (34%),Regulate religious sects (16%),Partner support (9%)

4.4.5 : Two Focused Group Discussions were conducted at the health facility

Two focused group discussions were held on separate days at the health facility which was attended by 8 identified individuals per each group totaling to 16 participants. The participants who participated in the FGD were pregnant women, Health service providers, Community health workers, care takers/partners accompanying the clients.1 male partner also attended. The discussions and recommendations were summarized as follows;

Discussion points	Recommended solutions
Knowledge of pregnant women on PMTCT services provided	Ministry of Health and Health partners to increase awareness and avail information on PMTCT services provided at health facilities
Stigma and discrimination were very common with discussions around HIV infected persons	Support to HIV infected women and all PLWHIV through mentor mother program and other programs so as to reduce discrimination and stigma related to HIV/AIDS
Low male participation observed was identified as one of the major factors influencing low attendance to clinic	Male partners to provide necessary support to pregnant women to uptake eMTCT services provided at health facilities
Negative cultural beliefs and practices were practiced by most women and this was a major setback to the program	Community negative beliefs and practices to be discouraged
Taboos and beliefs were also practiced by most women in the some of the communities in the rural dwellings and these affected women vising health facilities for their regular check ups	Community engagement and involvement in health talks to demystify taboos and beliefs that influence high MTCT rates

4.5 Cultural beliefs and practices that contributed to high MTCT rates among pregnant women at this facility.

Among the respondents, 31.1% stated that cultural beliefs and practices such as women who visit held facilities are believed to be weak in the society and therefore are not considered to be healthy. Others believed that when one is attended to by a traditional birth attendant, her child not only enjoys a healthy life but also considered to have received preventive treatment against common ailments in the community whereas some were categorical that using herbal medicine is a solution to issues pregnant women may be diagnosed with at the ANC Clinic. Other women were reported to have a strong believe in running around particular trees whenever one was sick so as to get cured. These beliefs were an impediment to participation on HIV/AIDS awareness programs,

Table 4.8: Influence of cultural believes and practices contributing to high MTCT rates among pregnant women attending ANC clinic

Influence of cultural believes	Frequency	Proportions expressed as %
Yes	118	31.1
No	253	68.9
Total	371	100.0

The results in table 4.7 above indicated that women at this facility represented by 31 percent agreed to the fact that cultural beliefs and practices contribute to high MTCT rates reported at the county referral hospital even with 69 percent of the women were of the opinion that the high MTCT rates were contributed to by other factors not related to beliefs and practices.

It was noted that though majority (68.6%) did not believe in taboos that relate to pregnancy, childbirth and new motherhood, a sizeable proportion (31.4%) upheld the taboos. Table 4.8 below illustrates this

Table 4.9: Influence of taboos that relate to pregnancy, childbirth and new motherhood

Believe in taboos	Frequency	Proportions expressed as %
Yes	117	31.4
No	244	68.6
Totals	361	100.0

A total of 117 (31.4%) reported to have been influenced by taboos that relate to pregnancy, child birth and new motherhood. Table 4.7 below summarizes various taboos that were reported by the ANC patients at the facility.

This study further investigated the influence of traditional health beliefs on the pregnant women visiting the facility for ANC services. The results of the respondents who had influence of traditional health believes are presented in Table 4.9 below

Table 4.10: Influence of traditional health beliefs

Influence of traditional health beliefs	Frequency	Proportions expressed as %
Yes	67	17.6
No	291	82.4
Totals	358	100.0

Table 4.10 above presents various traditional health beliefs reported by 60 (17.6%) of the respondents who had a strong believe in traditional health beliefs.

Majority of the respondents did not have influence on tradition health believes as represented by 82.4% of the total responses. It was just 17.6% of the total responses who had influence on traditional health beliefs.

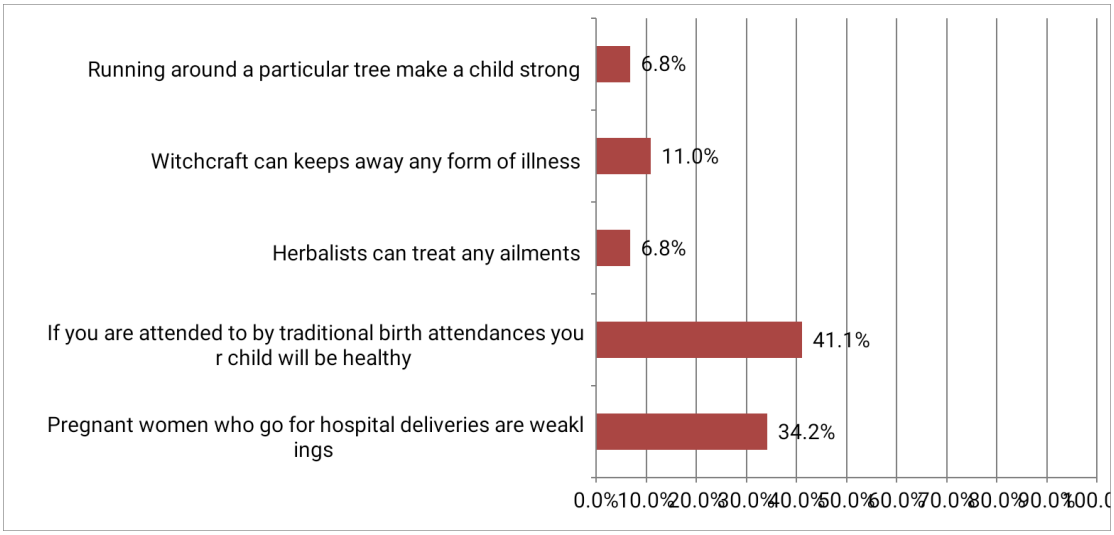


Figure 4.7. Some traditional health beliefs that contribute to missing of clinic visits with proportions expressed as %

Most of the respondents with influence on traditional health believes cited those services by traditional birth attendants makes the child healthy as displayed by 41% of the total responses. Around 34.2% of the participants believed that pregnant women who go for hospital deliveries are weaklings while others believed on issues such as: witchcraft can keep away any form of illness (11.0%), running around a

particular tree makes a child strong (6.8%) and herbalists can treat any ailment (6.8%).

4.6 Strategies of lowering the high MTCT rates among pregnant women at this facility

Key interventions to be employed in lowering the high MTCT rates were identified by the focused group discussions where the participants pointed out on availability of PMTCT services as key intervention to lower MTCT rates.

Focused Group Discussions suggested making available PMTCT services, providing PMTCT information, partner support, demystifying cultural beliefs & practices, discouraging women from taboos as major ways of lowering high MTCT rates in this facility.

Religious institutions and faith-based organizations have had a share of contribution to elimination of MTCT of HIV/AIDS in the county. Nakuru County has extensive penetration of religious sects and faith-based institutions that play a significant role in the social life of the residents of the county. Religious institutions' ubiguity in the nation and high participation of faith-based institutions in HIV prevention give a unique opportunity of employing, and evaluating congregation-based approaches' effect on MTCT of HIV/AIDs among pregnant women attending Antenatal clinics in health facilities. The study revealed that some of religious sects were providing misleading information to persons with HIV/AIDS among them who were pregnant women that it is only divine intervention that heals all ailments including HIV.Some of the patients on ART have had to stop adhering to treatment/medication due to misinformation. The study revealed that seven percent of the participants were in favor of the religious sects being regulated in their activities so as to avoid providing contrary information to health education messages.

CHAPTER FIVE: DISCUSSION

5.1 Introduction

In order to achieve Sustainable Development Goals (MDGs), there is need to concert all efforts in reducing the mother to child transmission rate 5% or less, enhancing PMTCT practice and creating awareness that is a crucial to in reducing maternal and child mortality and morbidity that has impacted a given country's socio-economic development. This study examined existing determinants to elimination of MTCT of HIV/AIDS among women who were pregnant at the Nakuru level 6 County Referral Hospital in Nakuru County.

The findings of the study are in line with the key deliverables of WHO which revealed that antenatal and PMTCT services are not easily accessible to pregnant females in low- and middle-income nations. Many reside far away from health facilities where transport costs to these facilities are unbearable. In African Region, Eastern Mediterranean Region and WHO South-East Asia Region, a third of women who are pregnant did not go for ANC in the year 2005 and 2011due to reasons associated with transport costs. Women visit health facilities for their antenatal care only once during pregnancy which has highly reduced the number of females enrolling on PMTCT program (WHO, 2012).

It is important that clinics put in place improvement measures and remain as accessible as possible in order to increase attendance such improvements include arrangements for patient travel or clinic operation hours. Even though HIV positive women are encouraged to go to the clinics when giving birth to reduce MTCT and maternal risk, it is impossible because of the distance between their location of residences and health facilities. In some clinics, waiting mothers' well clinics/observation units are provided to accommodate women who are due to deliver to ensure they delivery under skilled birth health care (WHO, 2012).

Findings of this study therefore focus on three study objectives as indicated below;

5.2 Socio-demographic characteristics of the study subjects

Age

The respondents' mean age was 28.3 with a 5.4 years s.d. A cumulative percentage of 98.6% of the respondents were aged between 14 – 39 years. Age have an influence on ability to make informed choices such as attendance to Antenatal Clinic (ANC) for their routine checkups. Hence, compared to 17% for Rift valley and 18% national figures, the structure had few teenage pregnancies (KDHS, 2009).

Frequencies of ages 14-29 and that 30-39 were tested and results indicated that the mean of the ages were not statistically significant.

Due to higher risks that they are exposed to, younger women are more probable of seeking antenatal services than their older counterparts. In his study, Bonitra (2007) noted that a great risk unknown by the mothers are carried by first pregnant women especially in adolescents.

Residence

Majority of the respondents who visit this facility were from urban dwelling represented by 77% while 15% resided in rural areas leaving 8% resided in peri-urban areas. Respondents visiting Nakuru Level 6 County Referral Hospital were mainly from the urban settlement which is attributed to the fact that the facility is a county referral situated at the heart of Nakuru Central Business District and receives clients from a wider catchment area.

According to WHO (2009), pregnant women who reside in urban areas are more likely to seek health care services such as antenatal care from hospitals as compared to those who reside in the rural setup. Various barriers prevent women from the rural setup from access to antenatal health services and they include: service provider attitudes, lack of information, poor infrastructure, distance and cost. Further, in developing countries, mostly the rural areas, there is also shortage of medical personnel

According to UNFPA (2008) globally, more than 60 million mothers give birth at home with no skilled health care most of whom reside in rural area. A study by Anitah and Azedah (2011) assessed women's knowledge on health risks in pregnancy discovered that in rural areas, more than ¼ of the women were unable to name any

health risk. KDHS (2009) reported that the women attending less than 4 antenatal visits high in rural than urban and peri-urban areas.

Occupation

Majority of the respondents were unemployed (29.4%). Some of the respondents were engaged in businesses (15.3%). About 10.8% of the respondents were housewives. About 15.1% cited their occupation as farming while 10.2% were formally employed. Other types of occupations accounted about 19.2% of the total responses which include casual labourers and others. More than 40% of the women can be assumed to lack formal forms of income. However, they still went for antenatal care service. The uptake of antenatal services cannot be held by occupation and other socio economic factors' effect. Antenatal service uptake difference may be because of the intervention given more than social economic factors.

Being unemployed and housewife is associated with low income earning and by extension, dependency. According to KDHS (2009), no antenatal care is received on 1 in 7 women with lowest wealth quartile.

Women without occupation that guarantee stable income are less likely to uptake health services in hospitals.

Education

The revealed that 4% of the respondents had attained university education. Majority of pregnant women had attained secondary level of education (45.6%) while a quarter (25.0%) of the pregnant women had attended middle level colleges for their education 24% of the participants had primary education while the rest had attained low level of education informally represented by 1%.

Kenya Demographic and Health Survey (2008) reports that increased antenatal coverage is associated with education of women, receipt of ANC from health service providers is likely for those with highest education than the ones without any form of education. Women with low education may lack the knowledge of the services that are available at ANC clinic hence lead to a missed opportunity for these women to access PMCT services. In addition to this, more educated women are likely to make better decisions as well as quickly adopt to new information about antenatal services offered at health facilities as compared to their less educated counterparts.

Kenya AIDS Indicator Survey (2012) stated that the level of education is positively correlated with the pregnant women awareness of MTCT of HIV during pregnancy. Due to the low levels of education, most female adults and adolescents are unaware that during pregnancy HIV can be transmitted from mother-to-child. Similarly, majority of the illiterate women believe that a partner of a HIV infected person is always infected.

5.3 Influence of Knowledge on eMTCT among pregnant women at the facility

The results showed that majority of the women who attended antenatal had very limited knowledge of prevention of MTCT of HIV/AIDS which is critical for the success of the programme in eliminating HIV transmission from pregnant women to their unborn child during delivery. All pregnant women are required to have full information and knowledge about prevention of HIV/AIDS as well as knowing their HIV infection status during their pregnancy period. This is the only way the women together with their partners can make decisions on preventive measures of the infection to their unborn baby as well as health care workers making appropriate health care management recommendations as per PMTCT guidelines. The study showed that the majority (70%) had low knowledge level of HIV/AIDS transmission of mother to Child during pregnancy as well as programe on prevention of MTCT of HIV/AIDS. According to this study, low level of knowledge was a major contributor of the high MTCT rates that were reported at Nakuru Level 6 County Referral hospital in Kenya. Other studies that were done to ascertain if HIV status and knowledge of MTCT of HIV and ANC use in Ethiopia were related reported a lower proportion of female knowledge on MTCT was 59.9%.This compares with the levels of knowledge that were reported in facility–based researches in Nigeria at 74.5%, facility based study in Tanzania at 60% and facility –based survey conducted in Uganda that reported over 50% of pregnant women with low level knowledge on PMTCT interventions that are provided at health facilities in the country.

The results reveal that the odds ratio for the influence of knowledge of MTCT services (2.011) was statistically significant at <5 [95% conf]. This odd ratio is positive and tells us that pregnant women with knowledge of MTCT services are 2.011 times more probable of contributing to eMTCT compared to the ones who possess no knowledge of MTCT services hence I reject the null hypothesis as the

level of knowledge of pregnant women indeed affects the MTCT rates as per these results.

The results agree with a research done in Ethiopia on Knowledge about MTCT of HIV, how to prevent it and related factors among Ethiopian women indicating that place of residence, education level, religion and occupation remained associated strongly with women's correct MTCT knowledge and HIV PMTCT and that women's MTCT knowledge and PMTCT were statistically significant. Logistic regression evaluation reported that the respondents who had higher knowledge on PMTCT and MTCT of HIV had higher education and wealth. Females exposed to mass media, belonged to Christian faith, had formal work, married and lived in urban areas had a high likelihood of having correct PMTCT and MTCT knowledge (*Tegene et al*, 2017)

5.4 Influence of Social cultural determinants on eMTCT

The results show sociocultural factors as key determinants to high rates of MTCT of HIV/AIDS as well as a key barrier to the success of PMTCT program in the country. The socio-cultural factors are comprised of many small issues like gender inequality, family disruption, religious beliefs, perception, taboos, stigma and discrimination, low hospital delivery services utilization and unskilled birth delivery. The most socio-cultural problem facing MTCT being discrimination and stigma. This demonstrated why females in PMTCT programmes did not reveal their HIV status to the family and spouses and in other circumstances prevented females from enrolling in the programmes. Research reports that violent reactions and physical abuse from families of females in PMTCT programme that resulted to refusal of adhering to PMTCT therapies, marriage disruptions or/and dropping from the program.

Other social factors such as limited male involvement, being seen at hospital, imagination of a major health ailment, stigmatization, peer pressure, social groups, religious sects, ceremonies (funerals),sick people in the community were some of the cultural beliefs and practices as determinants to MTCT among pregnant women majority of the women (37.0%) believed in miscarriage after paying their hospital

visits to the clinic for fear of palpation or any form of examination by health workers ,22.7% portrays weakness of a women in the society.

Secondly, socio-economic factors are also identified as another barrier contributing to high MTCT rates in the county. Codes under this theme includes: poverty, lack of knowledge, poor awareness and poor accessibility to PMTCT programmes. Poverty cuts across other codes and themes, where it can be seen as an underlying factor. It is identified as the reason why pregnant women failed to attend antenatal clinics hence access PMTCT services, as most of them live far away from the hospitals and cannot afford to transport themselves to the hospital for delivery thereby being unable to access not only skilled delivery but also PMTCT interventions and services.

Taboos, traditional health beliefs and practices relating to pregnancy, child birth and motherhood 36% pregnant women preferred not to be seen while pregnant;26% they never wanted to be seen by evil eyed women,23% stated it is a taboo to be palpated by male health workers.

It was revealed that lack of financial resources to visit health facilities was the primary reasons for preference to TBA assisted deliveries. Many reside far away from health facilities where transport costs to these facilities are unbearable. Respondents stated the necessity of extending the PMTCT to places where people live, otherwise people close to health centers and those in urban areas would receive the services. Even though participants were of the view that individuals wish to reside close to health facilities, they further had a feeling that cultural beliefs and norms is a hindrance for them to visit the facilities. They indicated that communities are properly accustomed to the traditional methods of surviving and for majority, deliveries have been conducted by midwives for long and both mother and child survive as those done in clinics and hospitals. It becomes a challenge to convince them of the safety and advantages of delivering in a hospital and that they should avoid Traditional birth attendants assisted home deliveries.

Findings on preference for traditional birth attendants concur with studies done in Pakistan by Shah, et al (2007) who reported that the major reasons of the preference of traditional birth attendants were: inaccessibility to hospital services/ maternity, insufficient time to get to the hospital, lack of affordability to enter hospital. A

research in Malawi by Kasenga (2007) reported that, the major reasons for preferring to deliver by the help of traditional birth attendants include being ill, distance to the health facility and lack of money

The study further revealed that low income or limited financial resources (41%), attending to social ceremonies (17%) and visiting the sick in hospitals (16%). Religious sects discourage especially young religious groups, revival churches;
Low male involvement and participation were some of the reasons given by the FGD and key informant interviews that contribute to women not accessing PMTCT Services

Focused Group Discussions revealed that determinants to MTCT include Taboos and myths (should not cross ropes), male service provider to examine female, Fear of meeting with evil eyed women various ways of lowering the high MTCT rates among pregnant women

Focused Group Discussions suggested making available PMTCT services, providing PMTCT information, partner support, demystifying cultural beliefs & practices, discouraging women from taboos as major ways of lowering high MTCT rates in this facility.

Religious institutions and faith-based organizations have had a share of contribution to elimination of mother to child transmission of HIV/AIDS in the county. Nakuru County has extensive penetration of religious sects and faith-based institutions that play a significant role in the social life of the residents of the county. The ubiquity of religious institutions in the County and the growing involvement of faith-based organizations in HIV prevention present a unique opportunity to employ, and evaluate the effect of congregation-based approaches on mother to child transmission of HIV/AIDs among pregnant women attending Antenatal clinics in health facilities. The study revealed that some of religious sects were providing misleading information to people living with HIV/AIDS among them who were pregnant women that it is only divine intervention that heals all ailments including HIV.Some of the patients on ART have had to stop adhering to treatment/medication due to misinformation. The study revealed that seven percent of the participants were

in favor of the religious sects being regulated in their activities so as to avoid providing contrary information to health education messages.

The results reveal that the odds ratio for the influence of social-cultural factors that hinder attendance of clinic (0.641) was statistically significant at 5%. This odds ratio tells us that pregnant women with influence of cultural believes are 0.641 times less likely to contribute to eMTCT than those who never had no influence of cultural believes. These results clearly demonstrate that social cultural beliefs and practices have an influence on sustaining high MTCT rates among pregnant women hence I reject the null hypothes that there is no relationship between social-cultural factors and high MTCT rates among pregnant women at attending ANC clinic at Nakuru County Referral Hospital.

It is important to note that these results agree with Boniphace (2010) in his study on "willingness and participation toward prevention of mother to child transmission in Kilimanjaro-Tanzania". He noted that the reason for poor involvement in PMTCT programs were; cultural reasons [21.4%] among others. Hinderance to women is reported to be due to cultural settings in the community that pose negative perceptions toward the programs.

The odds ratio for the influence of taboos that relate to pregnancy, childbirth and new motherhood (0.596) was statistically significant at 5%. This implies that pregnant women with influence of taboos that relate to pregnancy, childbirth and new motherhood are 0.596 times less likely to contribute to eMTCT than those who had no influence of taboos that relate to pregnancy, childbirth and new motherhood.

These results disagree with Munda et al., (2017) on their study on male partner involvement in the prevention of mother to child transmission of HIV infection. They noted that factors such as socio-cultural norms, which have been shown by other studies as determinants of male involvement in PMTCT were not found to be significant in their study. People can acquire knew knowledge easily and fast, and this facilitates changes in taboos. These results agree with Lundkvist and Staflin (2011) who observed that cultural taboos in some communities is a major challenge to PMTCT interventions and associated counseling since in some cultures women are

powerless, depend on their partners in many things and talking about sex related issues, pregnancy and HIV can be taboo. Some mothers are afraid of being hit, left or blamed by their partners which also frightens some mothers for disclosure of partner status.

The odds ratio for the influence of traditions that resulted to missing of clinic visits at the facility (0.368) was statistically significant at <5 (95% CI). This implies that pregnant women with influence of traditions that resulted to missing of clinic visits at the facility are 0.368 times less likely to contribute to eMTCT than those who had no influence of traditions that resulted to missing of clinic visits at the facility.

The results reveal that the odds ratio for the lack of provision of financial or other support towards clinic attendance (1.078) was not statistically significant at 5%.

5.5 Cultural beliefs and practices contributing to high MTCT rates among pregnant women at health facility

Cultural beliefs and practices such as women who visit health facilities were believed to be weak in the society and therefore are not considered to be healthy. There were others who believed that when one is attended to by a traditional birth attendant, her child not only enjoys a healthy life but also considered to have received preventive treatment against common ailments in the community whereas some were categorical that using herbal medicine is a solution to issues pregnant women may be diagnosed with at the ANC Clinic. Other women were reported to have a strong believe in running around particular trees whenever one was sick so as to get cured.

Taboos, traditional health beliefs and practices relating to pregnancy, child birth and motherhood 36% pregnant women preferred not to be seen while pregnant. Other women never wanted to be seen by evil eyed women whereas others stated it was a taboo to be palpated by male health workers.

As it was noted earlier, traditional birth attendants were the most preferred health care providers among pregnant women in the community. One of the main reasons for preference to TBA assisted deliveries was a lack of financial resources to visit health

facilities. Many reside far away from health facilities where transport costs to these facilities are unbearable.

Participants indicated whether they had influence of any cultural believes that can hinder pregnant women from attending the clinic. Most of the subjects sighted transport facilitation (47%) was one of the key causes of low attendance of ANC.

This agrees with Cowan et al in a study that followed up all PMTCT patients who had dropped out of care at a large ANC clinic in Malawi due to challenges with travel or transport money (54%),*Cowan et al., 2015; Marcos et al., 2012; Tweya et al., 2014*

5.6 Establishing strategies of lowering high MTCT rates among pregnant women

Key interventions to be employed in lowering the high MTCT rates were identified by the two focused group discussions that were conducted.

In these discussions, there were various ways that were suggested as interventions to be employed with an aim of lowering the reported high MTCT rates in the facility the main one being provision of prevention of MTCT of HIV/AIDS services to all ANC clients vising the health facility for Antenatal profiles. Most of the respondents (41%) indicated that availability of PMTCT services in health facilities provides an opportunity for the pregnant women to be enrolled into the program hence to benefit from the services provided under this program. The other ways are provision of information on PMTCT program to the pregnant women also played a crucial role in equipping them with necessary information hence uptake of the services. Thirty four percent of the respondents indicated that availability of PMTCT information was an enabler to the women to be well informed of the benefits of PMTCT program which eventually contributes to the reduction of the MTCT rates in the health facility. Other strategies included regulation of religious sects that provide falsehood information about patients who heal without adhering to their medications represented by 16% and advocacy for partner support and involvement (represented by 9%) which is an important strategy that ensures that pregnant women are socially , morally and financially supported as they attend their antenatal clinics.

Male participation in eMTCT services was lower, the same was reported in Uganda where the participation of males at 16%. This demonstrated why females in PMTCT

programmes did not reveal their HIV status to the family and spouses and in other circumstances prevented females from enrolling in the programmes. Research reports that violent reactions and physical abuse from families of females in PMTCT programme that resulted to refusal of adhering to PMTCT therapies, marriage disruptions or/and dropping from the program

In Focused group discussions, respondents reported that male involvement in PMTCT services made the results better with the reason that the males were illiterate and lacked knowledge; men did not see the importance of escorting them to the clinic. More reasons mentioned for noninvolvement of males were: clinics/hospitals not being friendly to them during ANC visits, stigma, spending a lot of time at the clinics waiting for services, being extremely busy at work, working long distances from home. The findings agree with UNAIDS (2012) that reported that male involvement in PMTCT programme led to favourable outcomes. The social workers can test, talk and counsel partners jointly and later adhere to various ways to protect their infant from contracting HIV.

Other interventions included provision of PMTCT information in health facilities which correlates with a study conducted in Tanzania Trazier et al 2017 study on factors associated with PMTCT services which stated that availability of PMTCT services in health facilities contributes to more women attending ANC clinic in the respective facilities.

CHAPTER SIX: SUMMARY OF CONLUSSIONS AND RECOMMENDATIONS

6.1 Introduction

This chapter provides a summary of conclusions and recommendations of the study and highlights other areas recommended for further studies that were not covered by the study and remain very critical for service provision for pregnant women in health facilities in the country.

In conclusion the study found that level of knowledge; socio-cultural factors play an important role as determinants to elimination of mother to child transmission of HIV/AIDS and in lowering the MTCT rates.

6.2 Summary of study cconclusions

In conclusion, the study shows that high rates of Mother to Child Transmission of HIV/AIDs are determined by level of knowledge, social factors and cultural practices in Nakuru County. Socio-cultural, taboos, cultural practices and knowledge factors prove to be the most important barriers to the successful implementation of eMTCT of HIV services in the country.

1. To be more specific ,the study found out that low level of knowledge and social-cultural factors and cultural beliefs and practices are still major determinants of high MTCT rates in Nakuru Level 6 Referral Hospital, Nakuru County and as a consequence high HIV infant infections
2. There was a low level of Knowledge on elimination of mother to child transmission of HIV/AIDS among pregnant women attending ANC clinic at Nakuru Level 6 County especially referral hospital
3. Social cultural factors were a major determining factor for he high MTCT rates at the Nakuru County referral hospital as was revealed by most pregnant women who indicated that they preferred traditional birth attendants for their delivery ;Social factors as well as taboos are major contributing factors to high MTCT rates reported . Most important ways of lowering the high MTCT rates among pregnant women at Nakuru County referral hospital are availability of PMTCT services, PMTCT information, partner support and

regulation of religious sects that were a hindrance to patient adherence to treatment

4. Cultural beliefs and practices were identified to be a contributor to high MTCT rates among pregnant women seeking health services at Nakuru Level 6 referral hospital.

6.3 Programmatic recommendations of the study

- County Health programs in collaboration with partners should strengthen advocacy and awareness activities aimed at increasing the level of knowledge on eMTCT among pregnant women in Nakuru County which is key in reducing high MTCT rates
- Ministry of Health in collaboration with county health departments and health facilities to work closely with TBAs and community health workers to encourage women to deliver their babies under skilled Health care personnel and avoid socio cultural beliefs as well as traditional practices that discourage them from attending Antenatal clinic.
- Ministry of Health to intensify efforts in ensuring that PMTCT services are available to all the pregnant women visiting Antenatal clinics in all health facilities as it is a key intervention of lowering Mother to Child transmission of HIV among these women.
- National Ministry of Health in close collaboration with County Health Departments to develop and roll out specific programs to change the community mindset on cultural beliefs and practices with an aim of lowering MTCT rates in health facilities in all counties in the country.

6.4 Recommendation for Further Research

- There were critical areas that were related to the study hence will need further research and investigation. These came up during the focused group discussions and key informant interviews
- Influence of Male participation and involvement in MTCT services towards elimination of mother to child transmission of HIV among pregnant women
- Health system factors as a determinant to elimination of mother to child transmission of HIV among pregnant women attending ANC

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APPENDICES

Appendix I: Research Instruments

The research instruments that will be used in this study will be i) A Well-structured questionnaire that will be administered to pregnant women visiting the facility for ANC services and ii) Key informant interview was administered to post-test club leaders, Mentor mothers, Women group leaders, Community leaders and HIV Desk in-charges at the facility iii) Focused group discussion was administered to Health care service providers that included doctors ,nurses, clinical officers, counsellors, nutritionists, Intern Nurses and volunteers at this unit.

A. Structured Questionnaire

Respondent Instructions:

1. Below are a set of questions administered to you in relation to the above study
2. Do no fill in your name
3. Complete all the applicable questions in this questionnaire
4. Please fill or cycle appropriately

Demographic Data

1. Age of respondent in Yrs ……..
2. Marital status of the respondent i. single ii. Married iii. Divorced iv. Separated v. Widowed
3. Residence of the respondent i. Urban ii. Rural iii. Peri-Urban
4. Educational level of the respondent i. Primary ii. Secondary iii. Middle- level college iv. University
5. Occupation of the respondent i. Employed iii. Not employed iii. Business iv. Housewife v. Others specify…….

Social and cultural factors

1. Does your partner, spouse or care taker provide you with financial or other support towards your clinic attendance? i. Yes ii. No

2.If Yes, what kind of support I. Transport costs to the health facility ii. accompanies me to the clinic iii. encourages/reminds me to go for my clinic appointments iv. Explains positive benefits of the clinic v. Others specify…….

3. Has the cost of transport to this facility made you miss your ANC appointment? i. Yes ii. No

4. Have you ever had an experience with stigmatization? i. Yes ii. No

5. If Yes, explain ……. it affect them? i. A friend was discriminated ii. All friends new about HIV positive status iii. Being discussed by Health Care workers iv. Being rejected by friends v. Other ….. Explain

6. Are you aware of any cultural beliefs that can hinder pregnant women from attending the clinic? I. Yes ii. No

7. If Yes, Which ones? (i)Clinic will dilute the pregnancy (ii).Pregnancy might come out iii. Portrays some weakness of women (iv).Speculation that you are sick (v) Others specify….

8. Are there any taboos that relate to pregnancy, child birth and new motherhood? (i)Yes (ii) No (iii) don't know.

9. If yes, which taboo hinders women from attending ANC clinic? (i) Being palpated by male service providers will make child resemble the man (ii) Not to be seen while pregnant (iii) Fear of meeting evil eyed women (iv) Fear of meeting relative who is also pregnant which causes miscarriage (v) Meeting with a mad man will make the child mad (v) Jumping a rope while pregnant makes one deliver a mentally retarded child (vi) Others specify….

10. Are there any traditional health beliefs that made you miss your clinic visits at this facility? i. Yes ii. No

11. If Yes, Which ones are they? i. Pregnant women who go for hospital deliveries are weaklings ii. If you are attended to by traditional birth attendances your child will be healthy ii. Herbalists who treat any ailments iii. witch craft that keeps away any form of illness iv. Run around a particular tree for child to be strong (v) Others specify…….

Knowledge of HIV services provided during ANC clinics.

1. Do you know the services provided under ANC clinic? i. Yes ii. No

2. If Yes, What are the services ? (i)Treatment of a sick mother (ii). Treatment of a child (iii). Prevention of pregnancy/Family planning (iv) Prevention of HIV from mother to Child (v).HIV Testing and Counselling (vi) Others specify……

3. What do you think will happen to you if you don't come to the clinic? (i).will get disease (ii) Give birth to abnormal baby (iii) will have problems during delivery (iv) Child will be infected by HIV if am positive (v) Do not know

4.Why is it important to be provided with HIV services during ANC? i)To know my HIV status ii) To tell others my HIV status iii) To know how many people have HIV iv) To separate me from other healthy patients

5.What is your understanding about HIV and PMTCT interventions i) PMTCT will never work ii) HIV has no cure hence no waste of time iii) PMTCT works iv) Don't Know v) Others specify..…

B. Key Informant Interview Schedule

1. Do all the pregnant mothers attend ANC in this facility? (i) Yes (ii) No (iii) don't Know

2. If No, what are the reasons for the mothers not attending ANC clinic (i) Don't remember date of appointment (ii) No knowledge when to come (iii).No permission to come from partner iv. specify……

3. How does this affect eMTCT? (i) Affects uptake of eMTCT (ii) Affects knowledge of PMTCT among mothers (iii) endangers the health of baby and mother (iv) Dont know

4. How can the attendance of mothers be improved? (i)Through Health talks (ii) Using women groups (iii) Churches and public functions (iv) Media (v) Home visits

C. Focused Group Discussion guide.

1. Discuss the benefits of PMTCT to a pregnant woman and her unborn child?
2. Do all pregnant women attend their ANC visits at this facility Yes ☐ No ☐
3. What are the cultural reasons for women failing to come for ANC visits at this facility?
4. What are the social reasons for women failing to come for ANC visits at this facility?
5. Are there any taboos that hinder women from attending ANC clinic?

Yes ☐
No ☐

6. If yes which ones are they?
7. What are the other reasons not mentioned above that hinder women from attending ANC clinic?
8. What recommendations would you make to help all the mothers come for all their visits as required?

Appendix II: Informed consent Form

My name is Boniface Ambani isindu (Kenyatta University a Master student from Kenyatta University). I am conducting a study titled "Determinants of elimination of mother to child transmission of HIV/AIDS among patients at the Nakuru level 6 County Referral Hospital, Kenya

Steps to be followed

The information will be used to develop strategies of lowering MTCT rates in Nakuru County. Participation in this study will require that I ask you some questions. I will record the information you provide in a questionnaire.

Voluntary participation

You have the right to decline to participate in this study. You are entitled to same services and care whether you participate in the study or not and your decision not to participate will not affect the care you will receive. Please remember the participation in this study is voluntarily. You may ask questions related to the study at any time.

Importance

If you participate in this study you will help us to provide effective services that can improve at ANC Clinic at Nakuru Level 6 Referral Hospital. Your name will not be recorded on the questionnaire. The questionnaires will be kept in a locked cabinet for safe keeping at Kenyatta University.

Participant declaration

The above information regarding my participation in the study is clear to me. The study has been explained to me and I have been given a chance to ask questions and my questions have been answered to my satisfaction.

Name of Participant…… …… Signature or Thumbprint……..

Researcher declaration

Researcher I, the undersigned, have explained to the participant and confirm that he/she has understood the processes involved in participating in this study.

Name of Interviewer …… Signature …… Date

…..……

Appendix III: Letter of approval of proposal from graduate school

KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: kubps@yahoo.com
dean-graduate@ku.ac.ke
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P.O. Box 43844, 00100
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Internal Memo

FROM: Dean, Graduate School

DATE: 4th May, 2016

TO: Mr. Boniface Ambani Isindu
C/o Department of Community Health
KENYATTA UNIVERSITY

REF: Q141/CE/24539/12

SUBJECT: CORRECTION OF PROPOSAL TITLE

This is to inform you that Graduate School Board at its meeting of 27th April, 2016 approved your M.P.H. Research Proposal subject to reviewing the title to read "Socio-Cultural Determinants of Elimination of Mother to Child Transmission of HIV among Patients in Nakuru County Referral Hospital, Kenya"

Please ensure that you forward a copy of the amended title through the Chairman of your Department before you get the research authorization so that you can proceed to the field.

Thank you.

REUBEN MURIUKI
FOR: DEAN, GRADUATE SCHOOL

c.c. Chairman, Department of Community Health

Supervisors:

1. Prof. Alloys Orago
   C/o Department of Pathology
   KENYATTA UNIVERSITY

2. Dr. Joachim Osur
   Amref Health Africa
   C/o Department of Community Health
   KENYATTA UNIVERSITY

RM/cao

Appendix IV: Ethical clearance from KUERC

KENYATTA UNIVERSITY
ETHICS REVIEW COMMITTEE

Fax: 8711242/8711575
Email: kuerc.chairman@ku.ac.ke
kuerc.secretary@ku.ac.ke
Website: www.ku.ac.ke

P. O. Box 43844,
00100-Nairobi
Tel: 8710901/12

Our Ref: **KU/ERC/APPROVAL/VOL.1** (119) Date: 5th February, 2018

Boniface Ambani Isindu
Kenyatta University
P.O. Box 43844-00100
NAIROBI.

Dear Boniface,

APPLICATION NUMBER PKU/701/I773 'SOCIO-CULTURAL DETERMINANTS OF ELIMINATION OF MOTHER TO CHILD TRANSMISSION OF HIV AMONG PATIENTS IN NAKURU COUNTY REFERRAL HOSPITAL, KENYA."

1. **IDENTIFICATION OF PROTOCOL**

The application before the Committee is with a research topic Application Number **PKU/701/I773** 'Socio-Cultural Determinants of Elimination of Mother to Child Transmission of HIV Among Patients in Nakuru County Referral Hospital, Kenya ." received on 9th June 2017; discussed on 29th August, 2017 and received for re-review on 17th January, 2018.

2. **APPLICANT**

Boniface Ambani Isindu

3. **SITE**

Nakuru County, Kenya

4. **DECISION**

The Committee has considered the research protocol in accordance with the Kenyatta University Research Policy (Section 7.2.1.3) and the Kenyatta University Review Committee Guidelines

AND APPROVED that the research may proceed for a period of ONE year from 19th January 2018.

ADVICE/CONDITIONS

You must qualify the research method- is it cross-sectional, longitudinal? Need to include contacts for KUERC.

In addition ensure that:

i. Progress reports are submitted to the KU-ERC every six months and a full report is submitted at the end of the study.
ii. Serious and unexpected adverse events related to the conduct of the study are reported to this committee immediately they occur.
iii. Notify the Kenyatta University Ethics Committee of any amendments to the protocol.
iv. Submit an electronic copy of the protocol to KUERC.

When replying, kindly quote the application number above.
If you accept the decision reached and advice and conditions given please sign in the space Provided below and return to KU-ERC a copy of the letter.

KENYATTA UNIVERSITY
05 FEB 2018
ETHICS REVIEW COMMITTEE
P.O. BOX 43844 00100 NAIROBI

DR. TITUS KAHIGA.
CHAIRMAN ETHICS REVIEW COMMITTEE

I ...BONIFACE AMBANI ISINDU..... accept the advice given and will fulfill the conditions therein.

Signature...B Ambani..... Dated this day of... 05/02/.....2018.

C.c. DVC Research Innovation and Outreach

Appendix V: Permit from NACOSTI

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone:+254-20-2213471,
2241349,3310571,2219420
Fax:+254-20-318245,318249
Email: dg@nacosti.go.ke
Website : www.nacosti.go.ke
When replying please quote

NACOSTI, Upper Kabete
Off Waiyaki Way
P.O. Box 30623-00100
NAIROBI-KENYA

Ref: No. **NACOSTI/P/18/28202/23650**

Date: **19th July, 2018**

Boniface Ambani Isindu
Kenyatta University
P.O. Box 43844 – 00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on ***"Socio-cultural determinants of elimination of mother to child transmission of HIV among patients in Nakuru County Referral Hospital, Kenya"*** I am pleased to inform you that you have been authorized to undertake research in **Nakuru County** for the period ending **19th July, 2019.**

You are advised to report to **the County Commissioner, the County Director of Education and the County Director of Health Services, Nakuru County** before embarking on the research project.

Kindly note that, as an applicant who has been licensed under the Science, Technology and Innovation Act, 2013 to conduct research in Kenya, you shall deposit **a copy** of the final research report to the Commission within **one year** of completion. The soft copy of the same should be submitted through the Online Research Information System.

BONIFACE WANYAMA
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The County Commissioner
Nakuru County.

The County Director of Education
Nakuru County.

Appendix VII: Letter of Authorization by Nakuru County Government

REPUBLIC OF KENYA
NAKURU COUNTY GOVERNMENT
DEPARTMENT OF HEALTH SERVICES

Email:rvpghnakuru@yahoo.com
Mobile; +254721750460
When replying please quote

NAKURU LEVEL 5 HOSPITAL
NAKURU COUNTY
P.O BOX 71-20100
NAKURU

REF: PT/GEN/CORR/D/VOL.1/19

Date 16 March 2019

Dear Sir/Dear Madam,

Ref: Approval to conduct a study /Data collection at Nakuru Level 6 County Referral Hospital for Boniface Ambani Isindu, STD number Q141/CE/24539/2012

This is to inform you that the above named is a MPH student at Kenyatta University is conducting a study on determinants of elimination of mother to child transmission of HIV/AIDS among patients at the Nakuru Level 6 county referral hospital, Kenya and that he has been granted permission to conduct data collection in this facility.

He will be required to submit a copy of a final report upon completion of study.

Accord him the necessary assistance he requires to complete his studies.

MEDICAL SUPERINTENDENT NAKURU LEVEL 5 HOSPITAL
P O Box 71-20100, NAKURU
16 MAR 2019
Sign

Thank you

DR. GEORGE BIKETI
Medical Superintendent
Nakuru Level 6 Referral Hospital
Nakuru County.

Appendix VI: Full Publication of Research paper in a referred journal (at least 1 paper)

International Journal of Advances in Scientific Research and Engineering

www.ijasre.net ISSN: 2454 -8006

CrossRef DOI : 10.31695/IJASRE

Dear Professor,

We would like to inform you that article entitled **"Determinants to elimination of mother to child transmission of HIV Among patients at Nakuru County Referral Hospital, Kenya"** is accepted for publication in the International Journal of Advances in Scientific Research and Engineering (IJASRE) as per the reviewer's comments. The Review report is attached to the mail. All the published papers will be allocated the Free CrossRef DOI and Individual Digital e-certificate.

The IJASRE Journal Uses LOCKSS: Digital Archiving. Articles digitally available forever.

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With regards

Editorial Office - IJASRE

ISSN: 2454-8006