

**MALE PARTNER INVOLVEMENT IN ELIMINATION OF
MOTHER TO CHILD TRANSMISSION OF HIV AND THE
ASSOCIATED FACTORS IN KISUMU EAST SUB-
COUNTY, KENYA**

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**Male Partner involvement in Elimination of Mother to Child
Transmission of HIV and the associated factors in Kisumu East Sub-
County, Kenya**

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**A thesis submitted in partial fulfilment of the requirements for award
of the Degree of Master of Science in Applied Epidemiology in the
Jomo Kenyatta University of Agriculture and Technology**

2017

DECLARATION

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

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DEDICATION

To my loving wife Nancy Owiye and my sons Bill Henry Oyugi and Bradley Hawi Oyugi for their encouragement, understanding and support during the long periods of time I was away from home, my parents Simon Oyugi and Jeniffa Auma for their prayers and encouragement.

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ACRONYMS AND ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
ANC	Antenatal care
ART	Anti-retroviral therapy
CDC	Centers for Disease Control and Prevention
EGPAF	Elizabeth Glazer Pediatric AIDS Foundation
eMTCT	Elimination of mother to child transmission
FELTP	Field Epidemiology and Laboratory Training Program
GoK	Government of Kenya
HEI	HIV Exposed Infant
HIV	Human Immunodeficiency Virus
IATT	Interagency Task Team
IRIN	Integrated Regional Information Networks
KAIS	Kenya AIDS Indicator Survey
MCH	Mother and Child health clinic
NASCOP	National AIDS and STD Control Program
PEPFAR	United States President's Emergency Plan for AIDS Relief
PMTCT	Prevention of mother to child transmission
PSI	Population Services International

UNAIDS	United Nations International Agency on AIDS
UNICEF	United Nations Child Fund
VCT	Voluntary Counselling and Testing
WHO	World Health Organization

ABSTRACT

Male partner participation in activities targeting elimination of MTCT of HIV (eMTCT) remains low in Kisumu East Sub-County, despite its critical importance in reducing rates of MTCT. The Sub-County has a high MTCT of HIV currently at 15%. This study sought to identify factors associated with male partner participation in elimination of MTCT activities. A cross sectional study was conducted among women aged ≥ 18 years who had children aged ≤ 12 months and were attending child health clinic for immunization services, in four health centers in Kisumu East Sub-County, between February and April, 2015. Systematic random sampling was used to select eligible participants and semi-structured questionnaires used for data collection. Male involvement was defined based on an index score of five key variables of equal weight. A score of 0-2 was classified as low male involvement while a score of 3-5 was high male involvement. Data analyses were done using EPI Info 7. A total of 216 participants were enrolled. Mean age was 26.1 years (± 5.5 years), 189 (88%) were married, 119 (55%) had post primary education and 32 (15%) were employed. High male involvement was observed in 22.2% of the women and was associated with a woman having >8 years of formal schooling (AOR 3.9, CI=1.5-10.1), history of prior couple testing (AOR 3.2, CI=1.4-7.2) and male partner having read the mother-child booklet during pregnancy (AOR 2.9, CI=1.3-6.5). Low involvement was associated with male partner unemployment (AOR 0.3, CI=0.1-0.8). Male involvement in MTCT was low and was associated with women's level of education and previous male involvement in

reproductive health activities. This study recommends targeted strategies to encourage men to participate in activities targeting eMTCT, including using formal invitation cards to improve male partner testing for HIV at the MTCT.

CHAPTER ONE

INTRODUCTION

1.1 Background Information

Mother-to-child transmission of HIV (MTCT) can occur during pregnancy, child birth or breastfeeding period (Bolu *et al.*, 2007). In the absence of any interventions during these stages, MTCT rates can range from 15-45%, but can be reduced to levels below 5% with effective interventions (World Health Organization, 2014a). In June 2011, at the United Nations General Assembly (UNGA) high level meeting on Acquired Immune Deficiency Syndrome (AIDS), an initiative spearheaded by the joint United Nations Programme on HIV/AIDS (UNAIDS) was formed with an aim of reducing the number of new HIV infections in children and number of AIDS-related maternal deaths by 90% and 50% respectively by the year 2015. This initiative primarily focused on sub-Saharan Africa which has continued to account for up to 90% of new HIV infections among children globally (UNAIDS, 2013a).

In sub Saharan Africa, low male involvement has been cited as a reason for low uptake of services geared towards elimination of MTCT (Nyondo *et al.*, 2013). Involvement of male partner in eMTCT is an effective intervention that can reduce MTCT and infant mortality by more than 40% (Aluisio *et al.*, 2011). Women who are HIV positive whose male partners are involved in PMTCT activities have been reported to have favorable outcomes including having infants who test HIV negative (Kalembo *et al.*, 2013). Although identified as a key intervention, male involvement has not been monitored

routinely in most instances during ANC visits and men have been viewed as facilitators who provide financial support to women to enable them access reproductive health services and ANC has been viewed as an arena meant for women only (Ramirez-Ferrero & Lusti-Narasimhan, 2012).

Kenya is among countries with slow progress in reducing rates of MTCT and insufficient male involvement has been reported as a key reason (UNAIDS, 2013a). In Kenya, HIV-related complications account for up to 15% of all deaths among children under the age of 5 years annually (UNAIDS, 2014). A report by WHO in the year 2012 also revealed that several children living with HIV in Kenya did not have access to life-saving ART and recommended improved access to ART (Countdown to 2030, 2013). Many infants are born with HIV every year in Kenya, despite improved availability of ART and PMTCT services (Aidsmap, 2014). As part of efforts to galvanize high-level leadership towards ending new HIV infections in children and reducing HIV related deaths in women, the Kenyan First Lady launched “Beyond Zero Campaign” initiative in 2013. This campaign aimed improve male involvement in women’s reproductive health and HIV services (Interagency Task Team, 2013).

In Western Kenya, Kisumu East Sub-County has a high HIV prevalence of 19.3% (Kenya Ministry of Health, 2014) and MTCT rate estimated at 15%. This high prevalence of HIV and MTCT brings into focus the role played by male partners in efforts to eliminate MTCT. The Sub County is cosmopolitan and has both rural and urban populations. There has been no detailed study to describe the factors associated

with male partner involvement in elimination of MTCT in this population. A cross sectional study was therefore conducted among women aged ≥ 18 years, who had delivered ≤ 12 months before the study period in four health centers in Kisumu East Sub-County, to identify factors associated with male partner involvement in eMTCT activities.

1.2 Statement of the Problem

Kenya's average five year MTCT rate between 2007 and 2012 was 15%. Kisumu East Sub-County has a high HIV prevalence of 19.3%. The prevalence is higher in women (20.6%) compared to the men (17.8%) (Kenya Ministry of Health, 2014). In addition, only 41% of all pregnant women attend the recommended four ANC visits while up to 55% of HIV positive pregnant women do not deliver in a health facility in the area (Kenya Ministry of Health, 2014). Despite health care workers encouraging women to come back with male partners to the ANC, few men have accompanied the women to the ANC. The sub county has a high MTCT rate of 15% (Kenya Ministry of Health, 2014) and male partner involvement is not routinely monitored in the health facilities.

1.3 Justification of the Study

In the year 2014, Kisumu County accounted for 17.7% of all new HIV infections in children reported in Kenya. Kisumu East Sub County has high HIV prevalence and high MTCT rates. Few men have been reported to visit the ANC, undergo HIV testing or provide support to pregnant women who are found to be HIV positive. Elimination of MTCT program has the benefit of identifying discordant couples during pregnancy by

encouraging HIV testing for all couples. So far, there is no published data on male involvement in eMTCT done in Kisumu East Sub County. This study therefore aimed to establish the level of male partner involvement in eMTCT in Kisumu East Sub County and the factors that determine this level of involvement.

1.4 Research Questions

1. What proportion of women was accompanied to the ANC by their male partners?
2. What proportion of women accompanied by their male partners to the ANC had their partners undergo HIV testing?
3. What are the factors associated with involvement of men in eMTCT services?

1.5 Objectives

1.5.1 General Objective

To determine the level of male involvement in eMTCT and the factors associated with male partner involvement in eMTCT in Kisumu East Sub County in Western Kenya.

1.5.2 Specific Objectives

- 1 To determine the socio demographic characteristics of women attending child immunization clinic in Kisumu East Sub County.
- 2 To determine the proportion of women whose male partners accompanied them to the ANC and agreed to undergo HIV testing during any of the visit.
- 3 To determine the factors associated with involvement of men in eMTCT programs in Kisumu East Sub County.

CHAPTER TWO

LITERATURE REVIEW

2.1 Burden of HIV Infection and MTCT

HIV is a viral infection that can be transmitted through sexual intercourse, blood transfusion, intravenous injections or vertically from a pregnant woman to the unborn child (Centers for Disease Control and Prevention, 2017). Globally, HIV prevalence increased by 10% and incidence reduced by 4.5% between 2010 and 2015. HIV incidence remained static at 1.9 million but Eastern and Southern Africa region recorded a 4% decline in incidence. AIDS related mortality declined by 26% during the same period. This reduction was greater among adult women (33%) compared to adult men (15%) (World Health Organization, 2017). Mother-to-child transmission of HIV (MTCT) can occur during pregnancy, child birth or breastfeeding period (Bolu *et al.*, 2007). In the absence of any interventions during these stages, MTCT rates can range from 15-45%, but can be reduced to levels below 5% with effective interventions (World Health Organization, 2014b). In June 2011, the joint United Nations Programme on HIV/AIDS (UNAIDS) was and aimed to reduce the number of new HIV infections in children and number of AIDS-related maternal deaths by 90% and 50% respectively by the year 2015 (UNAIDS, 2013a).

Kenya is among countries with slow progress in reducing rates of MTCT (UNAIDS, 2013a) and HIV-related complications account for up to 15% of all deaths among children under the age of 5 years annually (UNAIDS, 2014). It has also been reported

that several children living with HIV in Kenya do not have access to life-saving ART and recommended improved access to ART (Countdown to 2030, 2013). Kenya's HIV prevalence is 5.6%

2.1 Elimination of mother to child transmission of HIV infection

Elimination of mother-to-child transmission of HIV targets every pregnant woman and not only those who are HIV positive during pregnancy. Four key elements of eMTCT have been documented and they include: prevention of new HIV infections among women of reproductive age by advocating for proper and consistent condom use among couples and discouraging multiple partner sexual relationships, ensuring women living with HIV avoid unintended pregnancies by improving access to their contraceptive method of choice, ensuring that pregnant women have access to HIV testing and care and finally providing treatment and support for women and children living with HIV and their families. These four elements form the pillars for implementation of eMTCT program (UNAIDS, 2013b).

World Health Organization has developed a monitoring and evaluation framework outlining various targets for eMTCT that can be used for validation of progress of countries towards the end point of year 2015. The impact indicator for eMTCT is a case rate of new pediatric HIV infections due to MTCT of less than 50 per 100,000 live births and MTCT rates of less than 5% in breastfeeding populations or less than 2% in non-breastfeeding population (World Health Organization, 2014a). The process indicators for eMTCT are; ANC coverage of more than 95% for at least one ANC visit in any

pregnant woman, coverage of pregnant women who know their HIV status of more than 95% and ART coverage of HIV positive pregnant women of more than 90% (World Health Organization, 2014a). This therefore underlines the importance for countries to evaluate and validate their performances of eMTCT strategies.

2.2 Definition of male involvement

Several studies on male involvement in PMTCT have been done in sub-Saharan Africa. Despite the many studies done, there is no standard definition of male involvement (Ditekemena *et al.*, 2012). Several studies have defined male involvement as the man accompanying the woman to the ANC and agreeing to undergo HIV testing either as a couple or individually (Msuya *et al.*, 2008; Byamugisha *et al.*, 2010; Reece *et al.*, 2010; Kalembo *et al.*, 2013; Endawoke, 2013). While male partner HIV testing at the ANC is arguably the most significant aspect of male involvement in efforts to eliminate MTCT, most of the studies recommended a broader assessment since male involvement is multi-dimensional and does not stop at the man testing for HIV at the ANC.

Therefore, other studies developed male involvement indices that consisted of various variables that are key in eMTCT (Byamugisha *et al.*, 2010; Endawoke, 2013; Getu, 2011). These indices were *ad hoc* and not standardized. For example, a study in Uganda used an index consisting of six variables; male attendance of ANC together with the woman, man's awareness of the woman's ANC appointments, man's discussion of ANC interventions with the woman, man's provision of financial support for the woman's ANC visits, man's awareness of the activities going on at the ANC and finally man

seeking permission to use a condom during woman's pregnancy (Byamugisha *et al.*, 2010). These variables carried equal weight and a score of 4-6 was labeled high male involvement while 0-3 was low male involvement. In another study, a further score was added to include the man's participation during follow up in case there was a HIV exposed infant (HEI) (Aluisio *et al.*, 2011). These studies were prospective, with the women being encouraged informally to bring along their male partners during the subsequent visits (Getu, 2011; Kasenga, 2010).

2.3 Benefits of male involvement in EMTCT

In the traditional African setting, the man is regarded as the head of the household and is therefore very influential in decision making in his household (Falnes *et al.*, 2011). This role of decision making has a huge bearing on the choices made by the woman. In some instances, women have been reported to seek the man's approval before attending ANC or even agreeing to a HIV test (Bajunirwe & Muzoora, 2005). This means the woman can even fail to attend ANC if at all the man refuses to grant her the permission. The man's role is therefore important and has been found to be a useful strategy for promotion of HIV prevention services and uptake of EMTCT interventions (Aluisio *et al.*, 2011). This includes use of condoms and making informed choices on infant feeding together with his spouse (Farquhar *et al.*, 2004; Kalembo *et al.*, 2013). In a Kenyan study, women whose partners attended couple counseling at ANC were more likely to return for subsequent appointments, administer nevirapine to their babies and avoid breastfeeding as advised (Farquhar *et al.*, 2004). It has also been demonstrated that male

involvement reduces the rate of loss to follow up of HIV infected pregnant women enrolled onto PMTCT programs, thereby improving their chances of delivering in a health facility (Kalembo *et al.*, 2013).

2.4 Factors Influencing male involvement in elimination of MTCT

2.4.1 Factors Positively Influencing Male Involvement

Various factors have been found to positively influence male involvement in past studies. They include socio demographic factors of both the man and the woman. In Kenya, a past study reported that women who were older at sexual debut, at time of marriage or were in a monogamous marriage were more likely to experience male involvement (Farquhar *et al.*, 2004). This is in contrast to a study in Cameroon which reported more male involvement in polygamous marriages compared to monogamous ones (Kalembo *et al.*, 2013) possibly suggesting differences in levels of male involvement due to cultural influences. Male partner involvement was also found to be positively associated with any level of education of both the man and the woman; whether primary, secondary or tertiary education (Byamugisha *et al.*, 2010; Kalembo *et al.*, 2013). Men who have completed primary level of education were reported to be twice as likely to be involved compared to those who did not attend school at all in a past study (Byamugisha *et al.*, 2010).

In the Democratic Republic of Congo however, no significant difference was observed on male involvement based on education, meaning that different cultures influence male involvement differently (Kalembo *et al.*, 2013). Women who were employed, had a

business venture or any other income generating activities were also found to experience better male involvement compared to those who had no income (Kalembo *et al.*, 2013) and similarly, men who are formally employed have been reported to be more likely to attend ANC with their partners (Reece *et al.*, 2010; Katz *et al.*, 2009).

Health service related factors also influence male involvement in eMTCT. There is evidence from studies in Sub Saharan Africa region that instances when men were formally invited to accompany their partners to ANC resulted in improved male involvement when compared to the routine verbal invitations from the women (Nyondo *et al.*, 2013; Falnes *et al.*, 2011; Koo *et al.*, 2013). The invitation was done using a notification card from the health facility and the men reportedly felt their role in eMTCT was acknowledged and appreciated. Other interventions that have improved male involvement include setting up alternative testing sites for the men when they visit the ANC. This include testing at the voluntary counseling and testing centers (VCTs) or even home based testing, compared to the ANC (Osoti *et al.*, 2014). A past study in Kenya reported that 27% of men who visited the ANC preferred HIV testing at a VCT instead of the ANC (Katz *et al.*, 2009). There is evidence that women whose male partners participate in couple counseling and testing experience better male involvement compared to those whose partners opt to test individually (Farquhar *et al.*, 2004). In addition, men who have undergone prior HIV and therefore know their status, and those who have knowledge on HIV transmission and prevention have also been found to be more likely to participate in efforts to eliminate MTCT (Morfaw *et al.*, 2013).

2.4.2 Factors Negatively Influencing Male Involvement

Social norms, cultural and customary gender roles assigned to men have made them to view the ANC as an arena meant for women only (Orne-Gliemann *et al.*, 2010). Many men also believe that HIV testing for pregnant women is a routine procedure that has no benefit for the man because they believe that even if they were tested, the men will have the same test results as the women (Falnes *et al.*, 2011; Morfaw *et al.*, 2013). Most of these men also believe that their main role during the woman's pregnancy is to provide her with financial support for ANC attendance and delivery of the child (Nkuoh *et al.*, 2010). This perception has discouraged male involvement in eMTCT. As a result, several men have declined to accompany their female partners to the ANC for fear of ridicule from the society that their partners dominate them or that they are weak (Byamugisha *et al.*, 2010; Nkuoh *et al.*, 2010; Falnes *et al.*, 2011; Orne-Gliemann *et al.*, 2010). This stigma in other societies in sub-Saharan Africa has led even some women to discourage their male partners from accompanying them to the ANC (Reece *et al.*, 2010) as the society might perceive them to be domineering. In contrast, other women have felt the need for men to be involved but feel they are not empowered enough by the society to ask them to visit the ANC, undertake HIV test or even use condoms (Falnes *et al.*, 2011). Stigma associated with one being HIV positive has also led to many men fearing undergoing testing for HIV either as a couple or individually or disclosing their positive test result to their partners (Reece *et al.*, 2010); (Theuring *et al.*, 2009). For example, a study in Nairobi found that only 38% of male participants agreed to receive their HIV test results in the presence of their partners (Farquhar *et al.*, 2004). This

reluctance to disclose test results has also been observed even in some women who test positive for HIV at the ANC because they fear that by disclosing their status, they are more likely to be divorced, abandoned or rejected by the man out of suspicion that she could be having other sexual partners (Falnes *et al.*, 2011).

In Kenya, it has been reported that some HIV infected women are too fearful of the repercussions of disclosing their status to their husbands that some of them have even opted out of the PMTCT programs altogether (Integrated Regional Information Networks, 2014). There is also evidence that many women have experienced adverse social events including discrimination, disinheritance or even domestic violence in the immediate period after disclosing their positive status to the male partner (Integrated Regional Information Networks, 2014); (Kiarie *et al.*, 2006). These adverse social events increase in instances where the men drink alcohol regularly. These men were found to be less likely to attend ANC with their spouses or even take a HIV test and were more prone to gender based violence (Kowalczyk *et al.*, 2002); (Msuya *et al.*, 2006). Such adverse social events discourage other women from disclosing their positive status or even asking the men to accompany them to the ANC (Msuya *et al.*, 2008).

The organization of health care provision has also influenced male involvement negatively. In some settings, health workers have been reported to have little time for interaction with men who visit the ANC and even prevent them from accessing the consultation rooms with the women (Byamugisha *et al.*, 2010; Orne-Gliemann *et al.*,

2010; Theuring *et al.*, 2010). Long waiting times also tend to discourage the men from ANC attendance, especially those who are in formal employment and are therefore time conscious so as to get back to their places of work (Byamugisha *et al.*, 2010; Theuring *et al.*, 2009). This is further complicated by the timing of the ANC visits in the health facilities, which is mostly scheduled during weekdays, yet there is evidence that if the visits were scheduled during the weekends, many men would accompany their pregnant partners during the visits (Msuya *et al.*, 2008; Nkuoh *et al.*, 2010; Ditekemena *et al.*, 2011). In some areas, health facilities are few and so involve travel over long distances that also increase the costs. Some men have reported that they would accompany their pregnant partners if the health services were more accessible and less costly (Reece *et al.*, 2010; Bwambale *et al.*, 2008).

CHAPTER THREE

MATERIALS AND METHODS

3.1 Study Area

The study was conducted in four health centers in Kisumu East Sub County (Figure 1), located in Kisumu County in Western Kenya. There are two administrative divisions in the sub county; Winam and Kadibo. Winam is majorly urban while Kadibo is mostly rural. There are a total of 70 health facilities offering basic health services including HIV care and majority are located in Winam division. In the year 2013, the total projected Sub County population was 481,958 persons. Women of childbearing age (15-49 years) and pregnant women formed 24% and 3.8% of the total population respectively (Kenya Health Information System, 2014). The prevalence of HIV in the sub county is 19.3% (Kenya Ministry of Health, 2014). The four health centers were: Lumumba and Migosi in Winam division and Rabuor and Nyangande in Kadibo division. Winam division has better access to health care facilities due to the well-developed tarmac roads compared to Kadibo division. The inhabitants are predominantly from the Luo community, although Winam division is cosmopolitan and has a more densely distributed population compared to Kadibo division. The health centers were chosen in each division so as to compare male involvement in rural and urban settings. The distribution of participants to be sampled was done proportionately according to the health centres' workload for the first ANC visit during the year 2013 (Kenya Health Information System, 2014). There are various socio-economic activities undertaken in the sub-county; fishing and farming mainly practiced in Kadibo division

while in Winam division residents mainly practice formal, informal and self-employment.

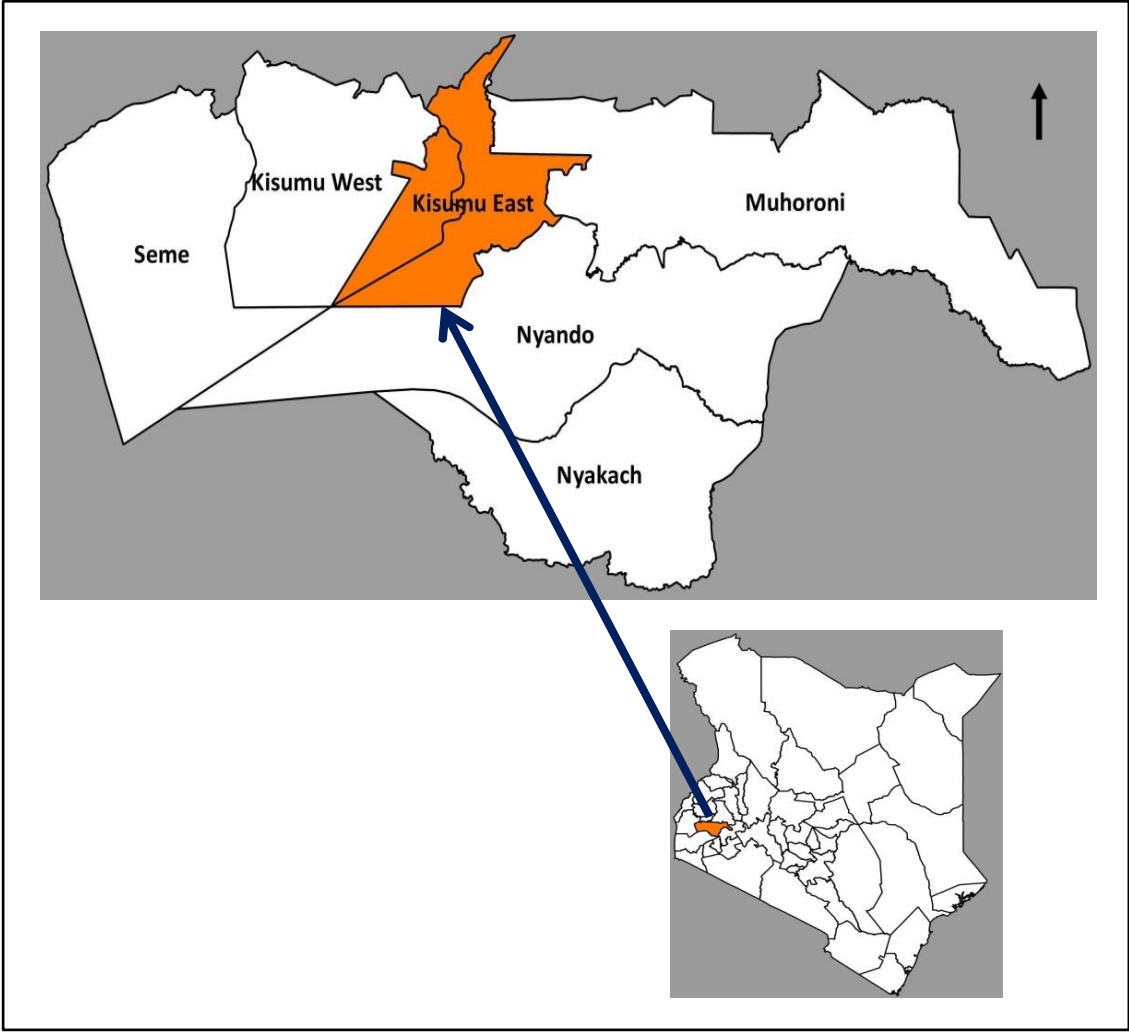


Figure 3.1: Map of Kenya showing Kisumu East Sub County

3.2 Study Design and Population

We conducted a facility-based cross-sectional study between February and April 2015. The study population was women aged ≥ 18 years who had delivered a child ≤ 12 months prior to the study period, and were attending child immunization services at Lumumba, Migosi, Rabuor and Nyangande health centers during the study period.

3.3 Sampling

3.3.1 Sample Size Determination

The total sample size was calculated using Cochran's formula for representative sample size for proportions (Cochran, 1977). The following assumptions were made:

1. The prevalence of male partner involvement in eMTCT was 15% (Farquhar *et al.*, 2004).
2. Precision of the study was 5%
3. Confidence level of the study findings was 95%

$$n = Z^2 \frac{pq}{d^2} = \frac{1.96^2 \times 1.96^2 \times 0.15 \times 0.85}{0.05 \times 0.05} = 196$$

A minimum sample size of 196 was obtained. Information on workload of first ANC visit for the health centers during the year 2013 (Kenya Health Information System, 2014). Using this information, we did proportionate sampling to determine the sample size for each health center as given in Table 3.1.

Table 3.1: Number of respondents sampled in each of the Health Centers in Kisumu East Sub County

Health Center	First ANC Visit in 2013	Proportion	Number Sampled
Lumumba	1691	0.49	106
Rabuor	932	0.27	58
Nyangande	462	0.13	28
Migosi	397	0.11	24
Total	3,482	1	216

3.3.2 Sampling Procedures

The study area has four health centers from which women were selected for the study. Systematic random sampling method was used to select study participants. Based on information regarding the first ANC visit workload for the health centers during 2013, from the Kenya Health Information System, probability-proportional-to-size sampling was applied to determine the sample size for each health center. The sampling interval was based on the daily entries in the mother-child health (MCH) register in January 2015. A table of random numbers was used to select the first participant for interview, and we subsequently sought to enroll every fifth entry in the MCH register for interview following informed and voluntary consent. If a randomly-selected participant was not eligible for interview or refused to be part of the study, the next eligible participant on the list was selected. Only one visit for child immunization was considered for enrollment, and already enrolled participants were no longer eligible to be selected in case they re-visited the clinic.

3.3.3 Inclusion Criteria

To be eligible for inclusion into the study, a woman was required to have a child aged ≤ 12 years, be at least 18 years of age and should have made at least one ANC visit to a health facility within the Sub County during the pregnancy, regardless of their marital status.

3.3.4 Exclusion Criteria

Women who were eligible for interview but were not attending child immunization clinic

3.4 Male Involvement Index

An index used to assess male involvement in a study in Uganda (Byamugisha *et al.*, 2010) was adapted and modified. The components of the index calculated in this study were as shown in Table 3.2.

Table 3.2: Components of the male involvement index, Kisumu East Sub County, 2015

Variable	Score
Man accompanied woman to ANC on at least one visit	1
Man agreed to HIV testing during any of the ANC visits	1
Man consulted woman on use of condoms and other contraception	1
Man Provided financial support for the woman's ANC attendance on at least one occasion	1
Man was aware of woman's ANC appointments/interventions	1
Total	5

Each variable was given an equal weight in the index. An involvement score ranged from 0-5 points. The cut off for high male involvement was set at 50% and above as has been done in previous studies (Byamugisha *et al.*, 2010; Endawoke, 2013; Getu, 2011). A total score of 0-2 was considered low male involvement while a score of 3-5 was considered as high male involvement.

3.5 Data Management

3.5.1 Data Collection

A pre-tested standardized questionnaire was used to collect information on socio-demographic characteristics of the women and their male partners and the factors associated with male involvement. The questionnaire was translated into Swahili language and back translated to English for consistency. Mother-child booklet was used to verify the mother's socio demographic status and ANC profiles. The outcome variable was male involvement (high versus low). Independent variables included socio

demographic characteristics of the participants (age, marital status, religion, residence, employment status, level of education, number of children, and type of marriage), male partner's socio demographic characteristics, partner awareness of ANC activities and partner HIV testing.

3.5.2 Data Analysis

Data was entered, cleaned and analyzed using Epi Info version 7 (CDC, Atlanta, GA, USA). Frequencies and proportions were calculated for categorical variables, means and medians were calculated for continuous variables. Crude odds ratios (ORs) and their 95% confidence intervals (CI) were calculated and factors with p-values ≤ 0.05 were considered statistically significant. Those significant variables with p-value ≤ 0.2 on bivariate analysis (Chi square test) were then entered into a multiple unconditional logistic regressions model for adjustment of confounding effect between them and the dependent variable. The model was developed by forward selection method until all the remaining predictor variables were significant (p-value ≤ 0.05).

3.6 Ethical Approvals and Considerations

Written, informed consent was obtained from each participant before conducting the interviews. Permission to conduct the study in the selected health facilities was granted by the Kisumu County Health Authorities. Ethical clearance for this study was obtained from Jaramogi Oginga Odinga Teaching and Referral Hospital Ethical Review Committee (ERC.IB/VOL.I/130) as shown in Appendix 1. Confidentiality was ensured and no personal identifiers of the participants were captured in the questionnaires.

CHAPTER FOUR

RESULTS

4.1 Socio-demographic Characteristics of the Respondents

A total of 216 female participants were recruited and interviewed during the study period. Those who lived in the urban setting of Kisumu City were 131 (60.6%) while the other 85 (39.4%) lived in the rural setting of Kadibo division. Table 4.1 shows the distribution of the respondents by health center.

Table 4.1: Distribution of the study respondents by Health Center, Kisumu East Sub County, 2015

Health Centre	N=216	Percent
Lumumba (Winam Division)	106	49.1
Migosi (Winam Division)	24	11.1
Rabuor (Kadibo Division)	58	26.9
Nangande (Kadibo Division)	28	12.9
Total	216	100

4.1.1 Distribution of the Respondents by Age

The mean age of all the respondents was 26.1 years (Standard deviation 5.5 years) and the median age was 25 years with an age range of 18-44 years. According to age group distribution, 72 (33.3%) women were in the age group 18-22 years. Figure 4.1 shows the distribution of the respondents by age group.

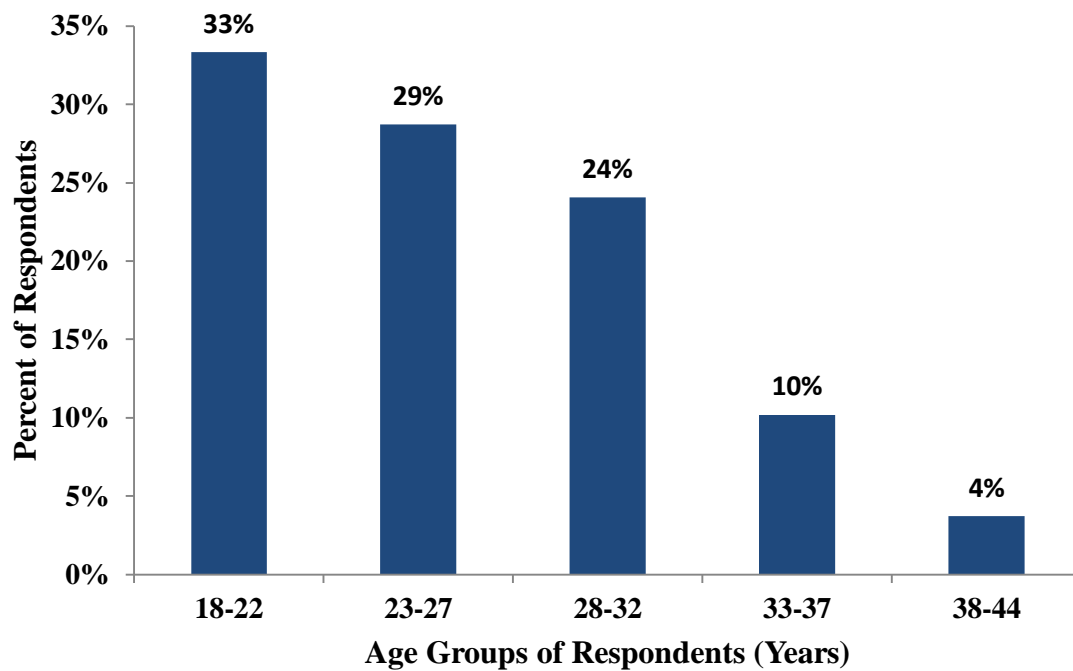


Figure 4.1: Distribution of respondents by age, Kisumu East Sub County, 2015

4.1.2 Distribution of the study respondents by highest level of education

The women’s level of education varied; Majority of them (44.9%) had attained upper primary education while 44 (20.4%) of them had attained tertiary education. This is illustrated in table 4.2.

Table 4.2: Distribution of respondents by highest level of education, Kisumu East Sub County, 2015

Education Level	No of respondents	Percent
Tertiary	44	20.4
Completed secondary education	46	21.3
Secondary education incomplete	29	13.4
Upper Primary (>4 years of primary school)	97	44.9
Total	216	100

4.1.3 Distribution of study participants by occupation, marital status and religious affiliation

Majority of the women (50.5%) were unemployed while 14.8% were in formal employment. Their marital status varied; 189 (87.5%) were married, 20 (9.3%) were single and 5 (2.3%) were separated from their male partners. Their mean age at the time of marriage was 20.9 years (Standard deviation 3.8 years) and median age at time of marriage was 20 years with a range of 14-35 years. There were 25 (12.3%) women who were in polygamous marriage and each had one co-wife. In terms of religion, 184 (82.2%) were Christians, 26 (12%) were practicing Traditional African Religion and 6 (2.8%) were Muslims. This information is shown in Table 4.3.

Table 4.3: Distribution of respondents by occupation, marital status and religion, Kisumu East Sub County, 2015

Variable	Frequency (N=216)	Percent
Marital Status		
Married	189	87.5
Single	20	12.5
Separated	5	2.3
Widowed	2	0.9
Religion		
Christians	184	82.2
Muslim	6	2.8
Traditional African Religion	26	12
Employment Status		
Formal employment	32	14.8
Self-employment	75	34.7
Not employed	109	50.5

4.1.4 Distribution of study participants by parity

Most study participants (60.2%) had 1-2 living children, while 78 (36.1%) had 3-5 children and the remaining 8 (3.7%) had more than five children. The mean and median age of their youngest child was 4.5 months (Standard deviation 3.2 months) and 3.5 months (Range 0.2-12 months) respectively. The median number of children born by the women was 2 (Range 1-9 children). Figure 4.2 shows the distribution of the respondents by parity.

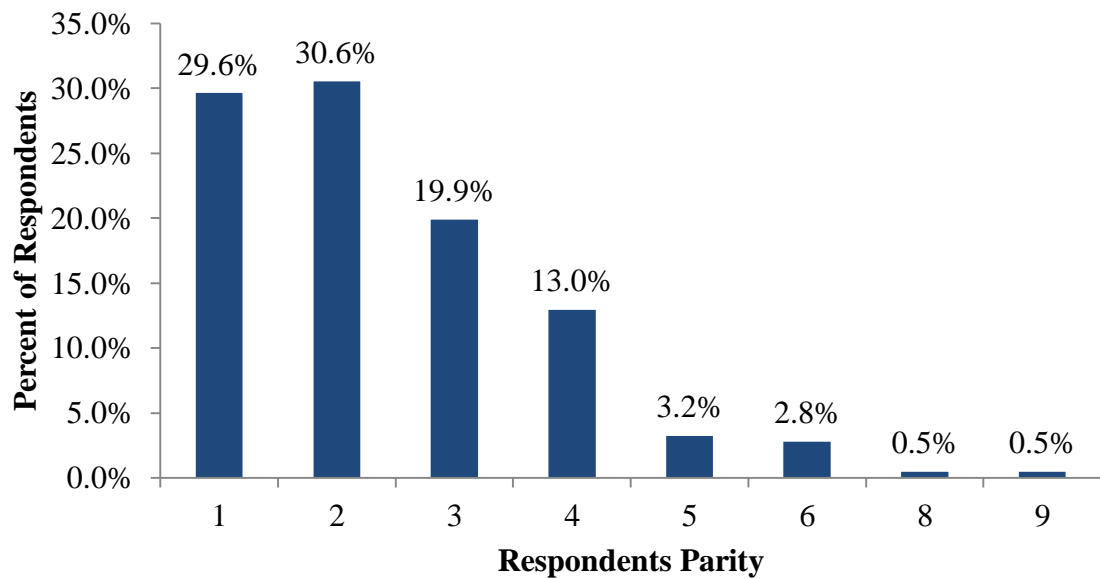


Figure 4.2: Distribution of respondents by parity, Kisumu East Sub County, 2015

4.1.5 Adverse social events reported by the respondents

Fifty nine (27.3%) reported that they had suffered domestic violence in the hands of their male partners in the course of their relationship or marriage and 13 (22%) were physically assaulted in the course of their pregnancy. Due to persistent domestic violence, 14 (23%) among these women had to temporarily separate from their male partners.

4.2 Socio demographic Characteristics of the Respondents' Male Partners

4.2.1 Distribution of respondents' male partners by age

The mean and median age of the respondents' male partners was 32.2 years (Standard deviation 7.1 years) and 31 years (Range 19-58 years) respectively. Most of the male

partners (30%) were reported to be in the age group 28-32 years. Figure 4.3 shows distribution of male partners by age group.

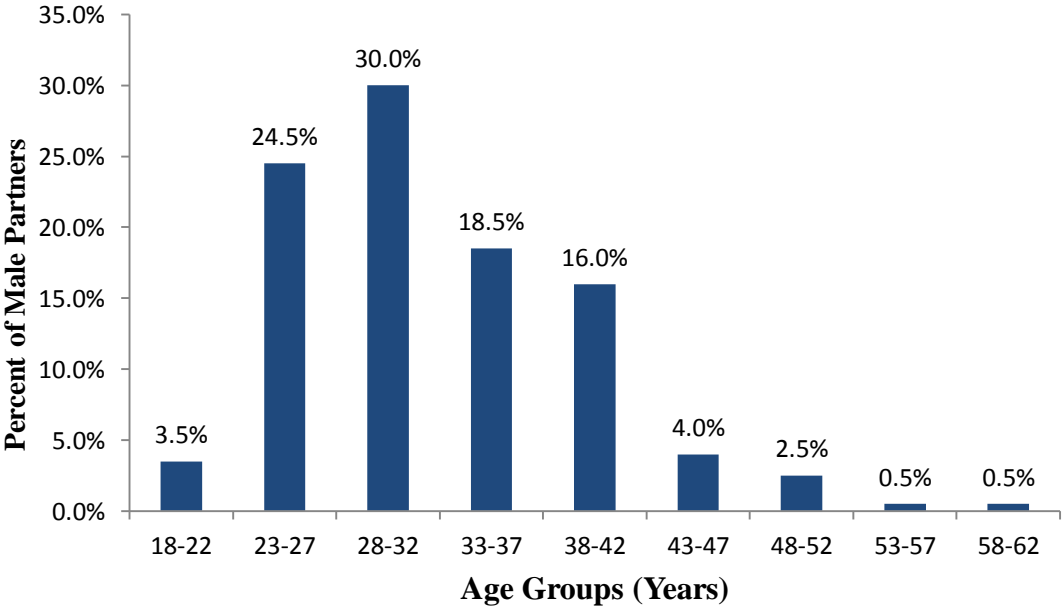


Figure 4.3: Distribution of respondents' male partners by age, Kisumu East Sub County, 2015

4.2.2 Distribution of respondents' male partners by education and occupation status

The respondents also reported that 66 (30.6%) of their male partners had attained upper primary education while 50 (23.2%) had attained tertiary education. The women also reported that 56 (26%) of the men regularly drank alcohol and five women reported that their partners were regularly smoking bhang. Table 4.4 shows distribution of the male partners by education level and employment status.

Table 4.4: Socio demographic characteristics of the respondents' male partners, Kisumu East Sub County, 2015

Variable	N=216	Percent
Education Level		
Upper Primary (>4 years of primary school)	66	30.6
Secondary Incomplete	32	14.8
Secondary Complete	68	31.5
Tertiary	50	23.2
Employment Status		
Formal employment	44	20.4
Self-employment	107	60.6
Not employed	65	19.0

4.3 Level of Male Involvement

4.3.1 Male Involvement by accompanying woman to the ANC

All the women interviewed had attended ANC at least once during their pregnancy. Those who had attended ANC in government health facilities were 204 (94.4%) while the other 12 (5.6%) attended ANC in private health facilities. Seventy five (34.7%) women had made less than four ANC visits during their pregnancy. Eleven (5%) women reported that they had missed at least one ANC appointment; five of them missed their ANC appointment due to lack of money while the other six had attended to other activities on their ANC appointment date.

Forty eighty (22.2%) women reported that they were accompanied to the ANC by their male partner on at least one occasion, but only 13 (27%) of these men made a second visit to the ANC.

4.3.2 Male Involvement by discussing ANC interventions with woman

The respondents reported that 207 (95.8%) of them had made their male partners aware by informing them verbally about ANC appointments. Among these women, 67 (31%) reported that they observed their partners read the ANC mother-child booklet on at least one occasion. Those women who reported that they discussed ANC services and interventions with their partners were 141 (66%).

4.3.3 Male Involvement by providing financial support to woman

There were 174 (81%) respondents who reported that they received financial support for ANC attendance from their male partners on at least one occasion. The financial support was mainly for covering transportation cost and cost of buying medications.

4.3.4 Male Involvement in HIV Couple Counseling and Testing

Among the 48 women who were accompanied by their male partners to the ANC, 44 (91.2%) were offered HIV test and 31 (70.5%) were tested together as a couple. The other 13 (29.5%) men declined HIV testing; eight of them because they believed the woman's status will be similar to theirs and the other five were afraid of knowing their HIV status.

Among the 31 men who agreed to undergo HIV testing, 5 (16%) of them tested HIV positive at the ANC while the remaining 26 (84%) tested HIV negative. Only 7 (22.6%) men among the 31 accompanied the woman back to the ANC for a second visit after the HIV test.

Even though all the women interviewed had tested for HIV during ANC, 189 (87.5%) of them had been tested for HIV prior to their pregnancy and among them, 24 (12.7%) were found to be HIV positive. One woman declined to disclose her HIV status at the time of the interview. Among the 215 women who disclosed their status at time of interview, 50 (23%) of them were living with HIV; 24 (48%) were HIV positive before their pregnancy, 19 (38%) were HIV negative before pregnancy and eight (16%) had not tested for HIV before pregnancy. Even though all the 50 HIV positive women were enrolled for PMTCT, only four (8%) were accompanied back to the PMTCT clinic by their male partners.

One hundred and nineteen women (55.5%) reported that their male partners were aware of their HIV status before their pregnancy while 27 (12.5%) reported their partners did not know their prior status and 68 (32%) did not know whether their male partners knew their status or not. Out of the 119 women whose partners were aware of their previous HIV status, 18 (15%) reported their partners had tested positive for HIV in a previous test. Among all the participants, 99 (47%) had undergone couple testing for HIV before their pregnancy. Only 100 (46%) of the women knew their partners' current HIV status; twenty six women (12%) reported that their partners were currently HIV infected, while

74 (34%) reported that their partners were currently HIV negative and 116 (54%) did not know their partners' current HIV status. On the other hand, 190 (88%) women had disclosed their HIV status to their partners.

4.3.3 Male Involvement in Use of Condoms and other methods of Contraception

There were 139 (64%) respondents who reported having used a contraceptive method while with the same man. Among these women 56 (40%) had made the decision to start using a contraceptive method without consulting the man because they felt the man would not allow them. The contraceptive preferences were varied; 86 (61.9%) women had been on Depo Provera, 35 (25.2%) on implants, 9 (6.5%) on oral pills, 5 (3.6%) had mixed use of Depo Provera and Oral Pills, 4 (2.8%) were using an Intrauterine Contraceptive Device.

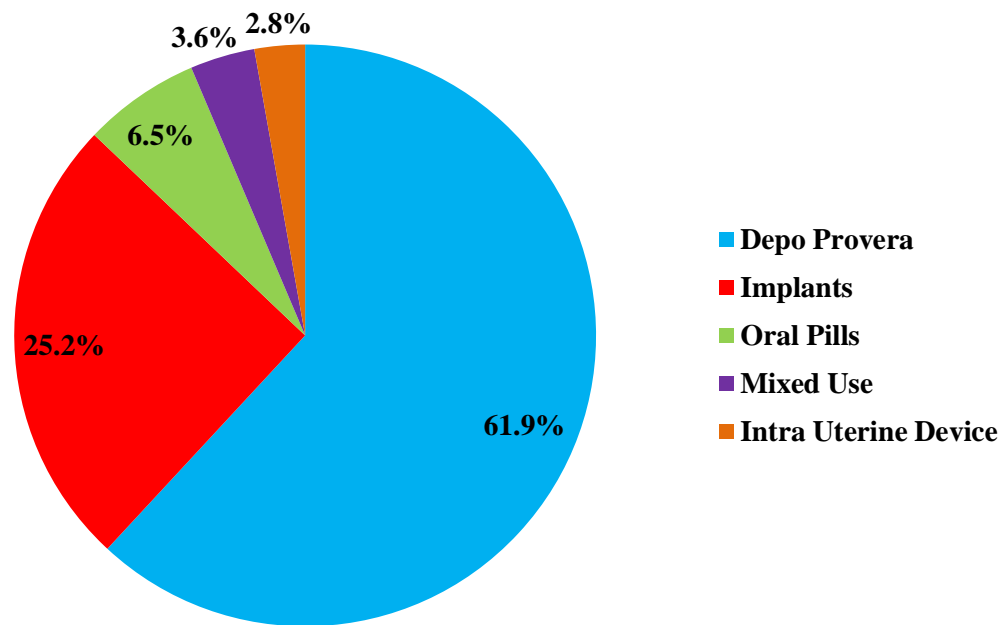


Figure 4.4: Respondents' contraceptive preference, Kisumu East Sub County, 2015

Regarding condom use during pregnancy, only 22 (44%) among the HIV positive women reported that they had been consistently using condoms with their partners during pregnancy. Seventeen of them agreed that their men were involved in decision making on use of the condoms but the other five reported that their men resisted condom use on several occasions.

4.3.4 Male Involvement Index

The male involvement index was computed and those respondents who had high male involvement were 42 (19.4%) while the remaining 174 (80.6%) had low male involvement score as shown in Table 4.5.

Table 4.5: Male involvement index performance, Kisumu East Sub County, 2015

Variable	Yes (%)	No (%)
Woman accompanied by man to the ANC on at least one occasion	48 (22.2)	168 (77.8)
Man agreed to undergo HIV testing at the ANC	31(14.4)	185 (85.6)
Man aware of ANC appointments and discussed interventions with woman	141(65.3)	66 (44.7)
Man participated in decision making on use of condoms and other contraception	83 (59.7)	56 (41.3)
Man provided financial support to woman to attend ANC	174 (80.6)	42 (19.4)

The performance of the index was follows: 42 (19.4%) of the respondents had more than half of the variables and so experienced high male involvement. The remaining 174 (80.6) respondents had less than fifty percent scoring in the index and so experienced low male involvement.

4.4 Perspectives of the respondents on reasons for low Male Involvement

The women reported the following as the reasons for the low male partner involvement: Fear of HIV test among the men was reported by 60 (27.8%) women while 49 (22.7%) felt that men don't attend ANC because they believe it is the woman's responsibility. In addition, 31 (14.4%) women felt that men were unable to visit ANC due to their busy work schedule since they are the bread winners. Fifteen (6.9%) women reported that some staff in the clinics were unfriendly, inconsiderate and sometimes harsh to the men while fear of a positive status among men who have multiple sexual partners was reported by 16 (7.4%) of the women.

Eleven (5.1%) women reported that men see no benefit of testing for HIV at the ANC because they believe the woman's status will be similar to theirs, while 32 (14.8%) women felt that most men are ignorant of eMTCT and so should be continuously informed and reminded on the need for them to participate in eMTCT activities. Only four (8%) of the HIV positive women were accompanied back for PMTCT clinic by their partners. There were several reasons why the other 46 women were not accompanied to the PMTCT clinic by their male partners: 18 (39%) women reported that their partners had a busy work schedule and could not visit the ANC on working days, 15 (31%) reported that their partners felt the ANC was unfriendly to male visitors, 7 (15%) said their men were reluctant to visit the ANC for fear of ridicule from other men while the remaining 6 (13%) gave no reason why they were not accompanied to the ANC (Table 4.6).

Table 4.6: Reasons for low male partner involvement in eMTCT in Kisumu East Sub County, 2015

Reason	N=216	Percent
Mens' fear about undergoing HIV test	60	27.8
Mens' belief it is the woman's responsibility to attend ANC and get tested	49	22.7
Mens' ignorance on need for them to test at the ANC	32	14.8
Mens' busy work schedule	31	14.4
Men with multiple sexual partners fear they will be found out	16	7.4
The ANC is not male friendly	15	6.9
Men believe woman's status is a proxy of their (man) own status	11	5.1
Some women don't remind the men to attend ANC	2	0.9

4.5 Perspectives of the respondents on strategies to improve male involvement

The following strategies were suggested by the respondents so as to improve male partner involvement in eMTCT. There were 78 (36.1%) who suggested that health promotion and education targeting men should be provided by community health volunteers so as to improve awareness among men regarding their role in eMTCT. Twenty four women (11.1%) suggested that couple testing at the ANC should be promoted and women who are accompanied by the man should be attended to first to shorten the duration of time men take at the ANC. Twenty three women (10.6%) felt

that men should be formally invited to the ANC using an invitation card because they tend to disregard verbal invitation from the women. There were 17 (7.9%) women who suggested that more male staff should be deployed to the ANC to make it male friendly while 12 (5.6%) women reported that ANC visits should be scheduled during the evenings or weekends when men are not busy at their work places. The remaining 62 (28.7%) women gave no suggestions on how to improve male involvement (Table 4.7).

Table 4.7: Strategies for improving male involvement in Kisumu East Sub County, 2015

Suggested Strategy	N=216	Percent
Community Health Workers to provide men with health education regarding MTCT	78	36.1
Promote couple testing and women who are accompanied to the ANC should be attended to first	24	11.1
Invite men formally using a card from the health facility	23	10.6
Deploy more male staff to the ANC to make it more male friendly	17	7.9
Schedule ANC visits during the evenings or weekends to accommodate the busy work schedule of most men	12	5.6
No suggestion on how to improve male involvement	62	28.7

4.6 Bivariate Analysis of Factors Influencing Male Involvement

4.6.1 Bivariate Analysis of Woman's Socio-demographic Factors

On bivariate analysis, high male involvement in eMTCT was associated with woman having attained >8 years of formal schooling (POR 5.35, CI=2.26-12.71), being formally employed and earning a salary (POR 3.66, CI=1.63-8.21), being aged >21

years at the time of marriage (POR 3.08, CI=1.49-6.40), being aged >24 years at the time of interview (POR 2.31, CI=1.07-5.00) and residing in the urban part of the Sub County (POR 2.09, CI=0.98-4.42). This information is illustrated in Table 4.8

Table 4.8: Bivariate Analysis of respondents' socio demographic factors associated with male involvement in eMTCT, Kisumu East Sub County, 2015

Sociodemographic Factors	Male Involvement		Odds Ratio	95% CI	P-value
	High (%) N=42	Low (%) N=174			
Currently aged >24 years	32 (76.2)	101 (58.0)	2.31	1.07-5.00	0.04
Yes	10 (23.8)	73(42.0)			
No					
Currently married	40 (95.2)	149 (85.6)	3.36	0.77-14.77	0.15
Yes	2 (4.8)	25 (14.4)			
No					
Age at marriage >21 years	26 (65.0)	56 (37.6)	3.08	1.49-6.40	0.003
Yes	14 (35.0)	93 (62.4)			
No					
Has a co-wife	4 (9.5)	21 (12.1)	0.77	0.25-2.37	0.84
Yes	38 (90.5)	153 (87.9)			
No					
Has post primary education	35 (83.3)	84(48.3)	5.35	2.26-12.71	<0.001
Yes	7 (16.7)	90(51.7)			
No					
Is currently unemployed	17 (40.5)	92 (52.9)	0.61	0.31-1.20	0.20
Yes	25 (59.5)	82 (47.1)			
No					
Is formally employed	13 (31.0)	19 (10.9)	3.66	1.63-8.21	0.002
Yes	29 (69.0)	155 (89.1)			
No					
Resides in Urban area	31(73.8)	100(57.5)	2.08	0.98-4.42	0.07
Yes	11 (26.2)	74 (42.5)			
No					

4.6.2 Bivariate Analysis of Male Partner's Sociodemographic Factors

High male involvement was also associated with male partner having attained tertiary education (POR 3.33, CI=1.62-6.85) and being formally employed (POR 3.21, CI=1.53-6.74) as illustrated in Table 4.9.

Table 4.9: Bivariate Analysis of male partners' socio demographic factors associated with male involvement in eMTCT, Kisumu East Sub County, 2015

Partner Socio demographic Factors	<u>Male Involvement</u>		Odds Ratio	95%CI	p-value
	High (%)	Low (%)			
	N=42	N=174			
Has tertiary education					
Yes	18 (42.9)	32 (18.4)	3.33	1.62-6.85	0.002
No	24 (57.1)	142(81.6)			
Is currently formally employed					
Yes	16 (38.1)	28 (16.1)	3.21	1.53-6.74	0.003
No	26 (61.9)	146(83.9)			
Is currently unemployed					
Yes	5 (11.9)	60 (34.5)	0.26	0.10-0.72	0.004
No	37 (88.1)	114(65.5)			

4.6.3 Bivariate Analysis of reproductive health factors associated with male involvement

High male involvement was also associated with history of couple testing before pregnancy (POR 4.31, CI=2.0-9.2), male partner having read the ANC mother-child booklet (POR 3.2, CI=1.6-6.3), woman visiting ANC at least four times (POR 1.14, CI=0.50-2.70) and woman attending ANC in public health facilities (POR 0.21, CI=0.07-0.70) as shown in Table 4.10.

There were other reproductive health factors not statistically significant at bivariate analysis but are important indicators of male involvement. Women who did not deliver in a health facility ($p=0.338$), women who were living with HIV infection before pregnancy ($P=0.588$), those who were diagnosed with HIV infection during their pregnancy ($P=0.88$), those whose male partners knew their (man's) HIV status to be positive ($P=0.06$) and those women who reported physical abuse from their partners ($P=1.00$) had lower odds of high male involvement and was not statistically significant.

Table 4.10: Bivariate Analysis of reproductive factors associated with male involvement, Kisumu East Sub County, 2015

Factors	Male Involvement		Odds Ratio	95% CI
	High (%) N=42	Low (%) N=174		
Partner read the mother child booklet				
Yes	22 (52.4)	45 (25.9)	3.2	1.6-6.3
No	20 (47.6)	129 (74.1)		
Couple testing before pregnancy				
Yes	31 (73.8)	68 (39.5)	4.3	2.0-9.2
No	11 (26.2)	104 (60.5)		
Attended public facility for ANC				
Yes	36 (85.7)	168 (96.6)	0.2	0.1-0.7
No	6 (14.3)	6 (3.4)		
Woman attended ANC >4 times				
Yes	13 (31.0)	54 (31.0)	1.1	0.5-2.7
No	13 (31.0)	62 (35.6)		
Partner knew his previous HIV status				
Yes	29 (69.0)	90 (51.7)	2.1	1.0-4.3
No	13 (31.0)	84 (48.3)		
Physically abused by partner				
Yes	11 (26.2)	48 (27.6)	0.9	0.4-2.0
No	31 (73.8)	126 (72.4)		
Child delivered at home				
Yes	1 (2.4)	14 (8.1)	0.3	0.04-2.2
No	41 (97.6)	160 (91.9)		
Woman HIV positive before pregnancy				
Yes	3 (7.1)	20 (11.5)	0.6	0.17-2.10
No	39 (92.9)	154 (88.5)		
Male partner is HIV positive				
Yes	7 (16.7)	19 (10.9)	1.6	0.6-4.2
No	35 (83.3)	155 (89.1)		

4.6.4: Bivariate Analysis of strategies proposed by the respondents for improving male involvement in elimination of MTCT activities

On analysis of the strategies for improving involvement of male partners in elimination of MTCT activities, the respondents felt that if the health care workers could send a formal invitation asking the men to visit ANC with the women (POR 3.1, 95% CI=1.1-8.3) could result in more men visiting the ANC, undertaking HIV testing and participating in other activities geared towards elimination of MTCT (Table 4.11).

Table 4.11; Bivariate Analysis of strategies to improve male involvement in Kisumu East Sub County, 2015

Suggested Strategy	Odds Ratio	(95% CI)	p-value
Formally invite men to attend ANC using a card from the health facility	3.1	1.1-8.3	0.02
There should be mandatory couple testing during woman's ANC attendance	2.2	0.8-6.1	0.11
Deploy more men to ANC to make it male friendly	1.5	0.4-5.8	0.52
Provide health education to men on their role in elimination of MTCT	1.3	0.9-2.9	0.47
Schedule ANC visits during weekends to enable more men to attend	1.2	0.3-5.8	0.81

4.7 Multivariate Analysis of Factors associated with male involvement in elimination of MTCT

Using logistic regression to control for factors simultaneously, having had >8 years of formal schooling (AOR 3.9, CI=1.5-10.1), history of prior couple testing (AOR 3.2, CI=1.4-7.2) and the man having read the mother-child booklet after woman's ANC visit (AOR 2.9, CI=1.3-6.5) were positively associated with high male involvement. Male partner being unemployed was negatively associated with high male involvement (AOR 0.3, CI=0.1-0.8) as shown in Table 4.12.

Table 4.12: Factors associated with male involvement in eMTCT in Kisumu East Sub County, 2015

Variable	High Male Involvement (%)	Adjusted Odds Ratio	95% CI
N=42			
Level of Education			
>8 years of formal schooling	35 (29.4)	3.9	1.5-10.1
≤8 years of formal schooling	7 (7.2)		
Tested as couple before pregnancy		3.2	1.4- 7.2
Yes	31 (31.3)		
No	11 (9.8)		
Partner read mother child booklet		2.9	1.3- 6.5
Yes	22 (32.8)		
No	20 (13.4)		
Male partner unemployed		0.3	0.1- 0.8
Yes	5 (7.9)		
No	37 (24.5)		

CHAPTER FIVE

DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 DISCUSSION

5.1.1 Socio demographic Characteristics of the Respondents

This study assessed the level of male involvement in eMTCT in Kisumu East Sub-County in Western Kenya and described the factors associated with high male involvement in elimination of MTCT. The respondents' had an average age of 25 years, which was indicative of a mature population although majority of the respondents were married at a fairly young age. Most of the respondents were married and were either informally employed or unemployed. This was comparable to findings in Eastern Uganda (Byamugisha *et al.*, 2010), although majority of respondents in this study resided in urban area compared to rural area in the Eastern Uganda study.

5.1.2 Male Partner HIV Testing at the Antenatal Clinic

The proportion of women with high male involvement in this study was lower than findings in Uganda, where 26% of the women experienced high male involvement (Byamugisha *et al.*, 2010). However, this study included male partner testing for HIV at the ANC as one of the variables in the index, which was not assessed by the study in Uganda. In this study the proportion of women reporting male partner testing for HIV at the ANC (14.4%) was comparable several other Kenyan studies that defined male

involvement as male partner HIV testing at the ANC, and found 10%–16.5% involvement (Farquhar *et al.*, 2004; Katz *et al.*, 2009; Kiarie *et al.*, 2006). The study area has a high HIV prevalence of 19.3% (Kenya Ministry of Health, 2014) and there has been significant improvement in the programs geared towards eMTCT in the area, but the low prevalence of high male involvement implies the need to educate men on their role in eMTCT.

5.1.3 Factors Associated with High Male Involvement

High male involvement was associated with woman's level of education, partner reading the ANC mother-child booklet, history of couple testing before pregnancy and partner employment status. Similar to other studies in Sub Saharan Africa (Kalembo *et al.*, 2013; Msuya *et al.*, 2008; Endawoke, 2013; Bajunirwe & Muzoora, 2005), we identified a positive association between high male involvement and women with at least 8 years of education. In another study in Kenya, women who had attained at least 9 years of formal education were more likely to experience male involvement (Farquhar *et al.*, 2004). Woman's level of education might influence partner involvement because education can lead to improved access to information, and because more educated women could be more able to discuss matters affecting their reproductive health with their partner (Msuya *et al.*, 2008).

In this study, women with employed male partners were more likely to report high male involvement, consistent with studies in Rwanda and Malawi (Kowalczyk *et al.*, 2002; Aarnio *et al.*, 2009). In Uganda, a study that used a male involvement index found that

women whose partners were not formally employed were less likely to experience high male involvement compared to those whose partners were formally employed (Byamugisha *et al.*, 2010). It is plausible that unemployed men might be more likely to go in search of a daily income, and so they might view going to the ANC as a missed opportunity for finding work. This implies the need for a system that would encourage these men to visit the ANC with their partners that does not interfere with their efforts to participate in daily work or allows them to earn wages in or around the setting of the ANC while their partner visits.

A history of prior couple testing was also associated with high male involvement, a finding similar to those in Eastern Uganda (Byamugisha *et al.*, 2010). One explanation for this could be that these men were already aware of their HIV-infection status, and therefore less apprehensive of the HIV test outcome. Another study in Ethiopia, which based male involvement on male partner ANC attendance reported a similar finding (Orne-Gliemann *et al.*, 2010). We believe that prior couple testing improves the man's knowledge of HIV and their role in eMTCT, as has been shown elsewhere (Farquhar *et al.*, 2004; Orne-Gliemann *et al.*, 2010; Semrau *et al.*, 2005; Mlay *et al.*, 2008). Couple testing has also been shown to have other benefits including reducing the rates of adverse events that may discourage women from attending ANC like domestic violence (Kiarie *et al.*, 2006; Semrau *et al.*, 2005).

Women who reported that their partners had read the mother-child booklet during ANC were also more likely to experience high male involvement. It is possible that these men

had a better understanding of ANC services compared to other men who were verbally informed but never read the booklet, or it might be an indicator for the partners' general interest or attention to mother-child health. In this study area, women generally inform the men verbally on the need to visit the ANC or to participate in eMTCT activities. Only 22% of the women were accompanied by the male partner to the ANC despite 96% of them reporting that they verbally informed the partner on the need to visit the ANC and test for HIV. Formal invitation using a card was reported to improve male involvement in past studies (Byamugisha *et al.*, 2010; Theuring *et al.*, 2009; Nyondo *et al.*, 2015), and could improve male involvement by up to 10% (Byamugisha *et al.*, 2011), while verbally inviting them has been shown to have little improvement on male involvement (Byamugisha *et al.*, 2010; Bajunirwe & Muzoora, 2005). This study area might benefit from a formal partner notification system to improve the level of male involvement, for which various methods such as formal invitation via card or SMS could be investigated.

From the suggested strategies to improve male involvement in this study, formal invitation was not statistically significant on multivariate analysis, but the study area could benefit from a formal partner notification system to improve the level of male involvement. In Malawi and Tanzania, more men visited the ANC when they were formally invited by the health facility using a card compared to when they were verbally informed by the women (Nyondo *et al.*, 2013; Msuya *et al.*, 2008). These men also reported that by being invited formally, they felt their role in prevention of MTCT was

acknowledged by the health care system compared to when they were verbally informed by the women.

The suggestion that men be educated on their role in eMTCT has also been reported in past studies, so as to address false beliefs, for example that the woman's HIV status is a proxy of the man's (Morfaw *et al.*, 2013; Falnes *et al.*, 2011), considering that some men could have other sexual partners. Health education would also reduce the fear of undergoing a HIV test and promote other measures of prevention like consistent condom use among HIV positive couples when the woman is pregnant. While some of the participants suggested that couple counseling and testing be mandatory, this would be difficult to implement as it would deny the woman ANC services during instances when the man refuses to visit the ANC together with her. Another suggested strategy was that the ANC be made male friendly. In this study area, ANC staffs are mainly female and so may not properly engage the men. Therefore, there is need to deploy more male staff to the clinics and give priority to women who are accompanied by their partners to the ANC so that men are encouraged to visit the ANC (Ditekemena *et al.*, 2012; Msuya *et al.*, 2008; Nkuoh *et al.*, 2010).

This study is not without limitations. There was potential bias by interviewing only the women, as they might have misreported information about their partners. Future studies ideally should include interviews directly with male partners, and could also validate answers between men and women. Mothers may potentially have poor recall for their partners' involvement. We minimized the potential of recall bias by including only

women with children aged ≤ 12 months and by referring to the mother-child booklet to verify mother's socio demographic information. We used an index used in similar studies, and we do not know the reliability of this index, however, the components used in the index seemed rationale to our study setting. The index we used may or may not be generalizable to other settings, and we do not know the validity or reliability of the index, however, many of our findings was consistent with other studies of male partner involvement. As a cross-sectional study, our factors identified may not necessarily represent causal factors as may better be identified through a cohort study following partners over time, however, the factors we identified are consistent with other studies on male partner involvement. We also did not study attitudes and beliefs of women or their partners, which may influence behavior and subsequently influence male partner involvement. Finally, this study's size was designed based on estimating a proportion of women with male partner involvement, therefore our risk factor analysis was a secondary aim, and the study not specifically powered to detect risk factors with high precision.

5.3 CONCLUSION

1. Majority of the women were married, unemployed and lived in the urban area of Kisumu East Sub County.
2. Male Involvement in efforts to eliminate MTCT was low in Kisumu East Sub-County.

3. Few women experienced high male involvement in eMTCT services and fewer male partners accepted to undergo HIV testing at the ANC.
4. Factors that were positively associated with high male involvement in Kisumu East Sub County were woman having at least eight years of formal education, woman being in formal or salaried employment and the man reading the ANC mother-child booklet.
5. The factors that were negatively associated with high male involvement was the man being unemployed.

5.3 RECOMMENDATION

1. Kisumu County Health Authorities to educate men on their role in eMTCT so as to increase their awareness.
2. Kisumu County Health Authorities to implement other strategies that can improve male involvement, especially formal invitation using cards from the health facility. The health workers to make follow up of the invited men.
3. Health workers to encourage women to discuss reproductive health services with their partners, including use of contraception, HIV testing and ANC attendance.
4. Kisumu County Health Authorities to set up male friendly ANC settings, by deploying more men to the ANC and by health workers considering men as a key part of ANC services.
5. Further research should be done. A gap that still exists is that women verbally invite their partners to accompany them to the ANC in this study area. Further

research should be done to determine the level of male involvement when men are formally invited to the ANC using a card filled by a health care worker.

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APPENDICES

Appendix 1: Jaramogi Oginga Odinga Teaching and Ethics and Research Committee Approval



MINISTRY OF HEALTH

Telegrams: "MEDICAL", Kisumu
Telephone: 057-2020801/2020803/2020321
Fax: 057-2024337
E-mail: ercjootrh@gmail.com

JARAMOGI OGINGA ODINGA TEACHING &
REFERRAL HOSPITAL
P.O. BOX 849
KISUMU

When replying please quote

ERC.IB/VOL.I/130

05TH JANUARY, 2015

Date

Ref:

Elvis Omondi Oyugi
TM-312/2383/2013

**RE: FORMAL APPROVAL OF A RESEARCH PROPOSAL ENTITLED:-
MALE PARTNER INVOLVEMENT IN ELIMINATION
OF MOTHER TO CHILD TRANSMISSION OF HIV AND
THE ASSOCIATED FACTORS IN KISUMU EAST SUB-COUNTY, KENYA**


The Jaramogi Oginga Odinga Teaching & Referral Hospital ERC (ACCREDITATION NO. 01713) has reviewed your protocol and found it ethically satisfactory. You are, therefore, permitted to commence your study immediately. Note that this approval is granted for a period of one year as from (5th January, 2015 to 6th January, 2016). If it is necessary to proceed with this research beyond the approved period, you will be required to apply for further extension.

Also note that you will be required to notify the committee of any protocol amendment(s), serious or unexpected outcomes related to the conduct of the study or termination for any reason.

Finally, note that you will be required to share the findings of the study in both hard and soft copies upon completion.

The Jaramogi Oginga Odinga Teaching & Referral Hospital ERC takes this opportunity to thank you for choosing the institution and wishes you the best in your endeavours.

Yours sincerely


Fred O Akwata
SECRETARY – ERC
JOOTRH - KISUMU



Appendix 2: Informed Consent-English Version

Title of Study: *Male partner involvement in elimination of mother to child transmission of HIV and the associated determinants in Kisumu East Sub-County, Kenya*

Introduction: My name is Elvis Omondi Oyugi. I am trying to learn more about the participation of men in the elimination of mother to child transmission of HIV infections, which is of great public health importance and can help reduce transmission of HIV from pregnant women to their children during pregnancy, delivery or breastfeeding periods.

Purpose of the study: Due to the great public health importance of mother to child transmission of HIV, I am requesting for your participation in this study whose main objective is to find out how many pregnant women are accompanied to the antenatal clinic by their spouses in Kisumu East Sub-County and the factors associated with their involvement in elimination of mother to child transmission of HIV program. This is important for the relevant authorities to find ways of improving the level of male partner participation in eMTCT and other HIV prevention services and programs. You are being asked to join this study because you have a child aged two years or younger and you were picked by chance among the other women who have children of the same age.

Expectations of the study: If you agree to participate in the study, I wish to ask you some questions using a standardized questionnaire. This will take between 30 to 45

minutes to complete. Whatever information you provide will be kept confidential and will not be shown to anyone other than members of our survey team. Your participation in this survey is voluntary, and if we should come to any question you don't want to answer, just let me know and i will go on to the next question; or you can stop the interview altogether at any time.

Risks: There are no envisaged risks to you as a participant in this study.

Benefits: The results of this study will be communicated and disseminated to the people concerned for them to take action on the recommendations that will come out from the study results. This will include the strategies and ways of improving male partner involvement in eMTCT in this Sub-County and the rest of the country.

Confidentiality: Any information obtained from you will be kept confidential and used solely for purposes of this research only. The results of this research may be published in scientific journals or presented at scientific conferences, but your identity will not be disclosed.

Compensation: If you accept to take part in this study, there will be no payment for participation.

Alternatives: You have a choice to agree or not to agree to participate in this study. If you agree to participate in study you are allowed to withdraw from the study at any time if you so wish without any consequences whatsoever.

Approval of the study: This study will be approved by the Jaramogi Oginga Odinga Teaching and Referral Hospital Ethics and Research Committee and the Board of Post graduate studies Jomo Kenyatta University of Agriculture and Technology P.O. Box 62,000, Juja, Kenya. In case of any further questions or concerns, you can address them to the directors of the above institutions.

Consent Signing: I have been fully informed about the study, its risks and benefits. I had the opportunity to ask questions which have been answered satisfactorily. I also understand that I am free to choose not to take part in this survey at any time and that if I decline, it will not affect my rights, position or privileges or my family in any way. I therefore consent to voluntarily participate in this study.

Name of participant..... Signature/ thumb print of participant.....

Date.....

Researcher/research assistant.....Signature.....

Date

Appendix 3: Informed Consent-Swahili Version

Mada ya Utafiti: *Ushirika wa wanaume katika harakati ya kuzuia na kumaliza maambukizi ya mtoto kutokana na virusi vya ugonjwa wa ukimwi kwa mama mja mzito, na kuzingatia yale mambo ambayo yanawafanya kushiriki pale wilaya ya Kisumu mashariki.*

Kuanzia: Kwa majina naitwa Elvis Omondi Oyugi. Lengo langu ni kufanya utafiti zaidi kuhusu namna ambavyo wanaume wanashiriki katika ule mpango wa kuzuia virusi vya ukimwi kutofikia mtoto aliye bado tumboni mama akiwa mja mzito. Swala hili lina umuhimu kwa afya ya jamii na wanaume wakishiriki vilivyo, kuna uwezekano wa kupunguza au kukatiza uambukizo wa mtoto kwa ule muda akiwa bado tumboni mwa mama yake, akizaliwa ama akinyonyeshwa.

Lengo la utafiti huu: Kutokana na umuhimu kwa afya ya jamii wa ile hali ya uambukizo wa mtoto kutokana na mama akiwa na virusi vya ukimwi, ninakuomba ukubali kuingia kwenye utafiti huu ambalo lengo lake kubwa ni kudadisi namabari ya wale wanawake wanaosindikizwa na waume wao wakienda kliniki ya wamama waja wazito, hapa Kisumu mashariki na pia kuzingatia yale maneno ambayo yanawashurutisha kuwasindikiza wake wao na kushiriki kwa huu mpangilio wa kuzuia uambukizo wa virusi vya ukimwi kutoka kwa mama kuelekea mtoto wake. Jambo hili lina umuhimu kwa serikali ya ugatuzi kwa vile inaweza kuwasaidia kuweka mikakati ya kuinua ushirikisho wa wanaume katika kuzuia uambukizo wa virusi vya ukimwi kwa wamama waja wazito na katika jamii kwa jumla. Tunakuomba uingie kwenye utafiti kwa vile uko na mtoto aliye chini ya miezi ishirini na mine na tumekuchagua sisi bila kuelekezwa na mtu yeyeote.

Matakwa ya utafiti huu: Ukikubali kushiriki kwa utafiti huu, nitakuuliza maswali nikitumia fomu spesheli. Nitaongea nawe kwa muda wa takriban dakika thelathini lakini inaweza kwenda mpaka dakika arobaini na tano. Maneno yote utakayotumbia, tutayaweka kwa sirin na hakuna mtu yeyote atakayeweza kuyaona wala kuyasoma,

isipokuwa tu wale ambao wanafanya utafiti huu. Kushiriki kwako ni kwa hiari yako, na kama kuna swali ambalo hutaki kujibu, utanielezea ili niende kwa swali ingine. Unaweza kusimamisha mahojiano wakati wowote ule utakapotaka.

Madhara: Hamna madhara yoyote unayoweza kukukumba kutokana na kushiriki kwako katika utafiti huu..

Matunda ya utafiti huu: Yale matokeo ya utafiti huu itatangaziwa wale watu wanaojishughulisha na afya ya jamii ili waweze kuchukua hatua mwafaka ya kuweka mikakati kamili ya kuhakikisha ushirika wa wanaume katika harakati ya kupunguza na kuzuia maambukizi ya mtoto mchanga na virusi vya ukimwi kutoka kwa mama yake mzazi hapa Kisumu mashariki. Maelezo yoyote utakayotupa utawekwa kwa siri na utatumika kwa huu utafiti pekee. Majibu ya huu utafiti unaweza kuchapishwa kwenye jarida la kisayansi ama kujadiliwa kwenye kongamano la kisayansi, lakini jina lako tutalibana, hamna atakayetambua. Hautalipwa chochote ukishiriki kwenye utafiti huu. Unayo uhuru wa kukubali au kukataa kushiriki kwa utafiti huu. Ukikubali kushiriki, uko huru kukataa kuendelea na mahojiano wakati wowote ule.

Idhiiniso la utafiti huu: Utafiti huu utaidhinishwa na bodi ya kisayansi ilioko hospitali ya Jaramogi Oginga Odinga pale Kisumu ikishirikiana na bodi ya masomo ya juu yachuo kikuu cha Jomo Kenyatta ilioko kule Juja. Ikiwa kuna swala tata inayokusumbua, unaweza kuwatumia anwani wakubwa wa bodi haya mawili.

Makubaliano ya kushiriki: Nimeelezwa kwa kina juu ya utafiti huu, madhara yake na umuhimu wake. Nimepewa nafasi ya kuuliza maswali yote na nimejibiwa nikaridhika. Pia ninatambua kwamba niko huru kukataa kushiriki katika utafiti huu wakati wowote nitakavyopenda na kwamba nikikataa kushiriki, hakuna madhara yoyote itakayonikumba mimi au familia yangu. Kwa hivyo, nimekubali kushiriki kwenye utafiti huu.

Jina la mshirika.....Saini ya mshirika.....

Tarehe.....

Jina la mtafiti..... Saini.....

Tarehe

Appendix 4: Study Questionnaire-English Version

Male Partner involvement in Elimination of mother to child transmission of HIV and the associated determinants in Kisumu East Sub-County, Kenya

PART I: IDENTIFYING INFORMATION

Interviewer name _____ Contact/Tel _____

Participant ID No□□□

Date of interview (dd/mm/yyyy) _____ / _____ / _____

PART II: DEMOGRAPHIC INFORMATION

1. Do you have a child who is aged between 0-12 months? (If yes move to No 2, if No stop the interview)

Yes No

2. What is your age? _____ years

3. Level of education _____

4. Occupation _____

5. Residence _____

6. Marital Status _____

7. How many children do you have? _____

8. Age of child of interest _____ months

PART III: DETERMINANTS OF MALE INVOLVEMENT

9. Were you living with a man during your pregnancy? (If yes move to 10, If No move to 11)

Yes No

10. Are you currently living with the same man?

Yes

No

11. What is the age of your husband/spouse/boyfriend? _____

12. What's the level of education of your husband/spouse/boyfriend? _____

Primary Incomplete Primary complete Secondary incomplete Secondary complete

Tertiary incomplete Tertiary complete don't know Refused to answer

13. What's your husband/spouse/boyfriend's occupation? _____

14. Do you have a co-wife? (If no, move to 16)

Yes

No

don't know

Declined to answer

15. How many co- wives do you have? _____

16. How old were you when you got married? _____

17. Did you attend ANC when you were pregnant with this child? (If No, move to 48)

Yes

No

Don't Know

Refuse to Answer

Not Applicable

18. Where did you attend ANC?

District Hospital

Sub-district Hospital

Health Center

Dispensary

can't

recall Don't Know refused to answer

19. How many times did you attend ANC?

Once Twice Thrice Four times More than
four times Don't know Declined to answer Can't recall

20. Did you miss any ANC appointment? (If no, move to 22)

Yes No Don't Know Refuse to answer can't recall

21. Why did you miss the ANC visit? _____

22. Did your husband accompany you during any ANC visit? (If no, move 48)

Yes No Don't Know Refuse to answer can't recall

23. During which visit did he accompany you?

First Second Third Fourth Specify any other visit _____

Don't Know Refuse to answer can't recall

24. Were you offered HIV test as a couple during the ANC visit when he accompanied you?

Yes No Don't Know Refuse to answer can't recall

25. Did you agree to HIV test? (If yes, move to 27)

Yes No Don't Know Refuse to answer can't recall

26. Why did you refuse HIV testing? _____

27. Did he agree to HIV test? (If yes, move to 29)

Yes No Don't Know Refuse to answer can't recall

28. What reasons did he give for declining HIV testing? _____

29. If you both accepted HIV testing, were you counseled by a health worker before testing? (If no, move to 31)

Yes No Don't Know Refuse to answer can't recall

30. Were you counseled together as a couple or separately?

Together Separately Don't know Declined to answer

31. Were you tested together as a couple or separately?

Together Separately

32. Did you receive the HIV test results together as a couple or separately? (If together, move to 36)

Together Separately

33. Why did you receive the results separately? _____

34. Did you disclose the HIV test result to one another? (If yes, move to 36)

Yes No Don't Know Refuse to answer can't recall

35. Why did you not disclose the test result to one another? _____

36. Is it possible to disclose to us the results of your HIV test? (If no, move to 37)

Yes No Don't Know Refuse to answer can't recall

37. What was your HIV test result? (If negative, move to 39)

Positive Negative Inconclusive don't know Refused to answer
 Can't recall

38. If positive were you put on the PMTCT program? (If No, move to 40)

Yes No Don't Know Refuse to answer can't recall

39. Did he accompany you back to the clinic while you were on the PMTCT program?

Yes No Don't Know Refuse to answer can't recall

40. If positive did you have HIV before pregnancy?

Yes No Don't Know Refuse to answer can't recall

41. What was your partner's HIV test result?

Positive Negative Inconclusive don't know Refused to answer
 Can't recall

42. Prior to this testing, did you know your HIV status? (If no, move to 44)

Yes No Don't Know Refuse to answer can't recall

43. What was your HIV status then?

Positive Negative Inconclusive don't know Refused to answer
 Can't recall

44. Prior to this testing, did your husband know his HIV status? (If No, move to 46)

Yes No Don't Know Refuse to answer can't recall

45. What was his HIV status then?

- Positive Negative Inconclusive don't know Refused to answer
 Can't recall

46. Prior to this testing, had you been tested as a couple before?

- Yes No Don't Know Refuse to answer can't recall

47. Did he ever accompany you back to the clinic after this visit when you were both tested for HIV?

- Yes No Don't Know Refuse to answer can't recall

48. Did you ever use a condom during pregnancy? (If no, move to 50)

- Yes No Don't Know Refuse to answer can't recall

49. Who made the decision on condom use during pregnancy?

- Woman Man both in consultation Don't Know refused to answer
 can't recall

50. Have you used any other contraceptive while with the same man? (If no, move to 52)

- Yes No Don't Know Refuse to answer can't recall

51. Who made the decision on use of this contraceptive?

- Woman Man both in consultation Don't Know refused to answer
 can't recall

52. Do you know your husband's HIV status?

Yes No Don't Know Refuse to answer can't recall

53. Does your husband know your HIV status?

Yes No Don't Know Refuse to answer can't recall

54. Is your child HIV exposed?

Yes No Don't Know Refuse to answer can't recall

55. Does your husband know your child's HIV status currently?

Yes No Don't Know Refuse to answer can't recall

56. Has he ever accompanied you to the HEI clinic?

Yes No Don't Know Refuse to answer can't recall

57. Was your husband/spouse aware of your ANC appointments?

Yes No Don't Know Refuse to answer can't recall

58. Was your husband/spouse aware of the ANC interventions and services provided to you?

Yes No Don't Know Refuse to answer can't recall

59. Did your spouse support you financially to attend ANC or delivery? (If no, move to 61)

Yes No Don't Know Refuse to answer can't recall

60. How did he support you financially_____

61. Did your spouse abuse you physically at any stage of your pregnancy?

Yes No Don't Know Refuse to answer can't recall

62. Has he ever abused you physically at any time?

Yes No Don't Know Refuse to answer can't recall

63. Where did you deliver the child of interest? (No facility delivery, move to 67)

at home District Hospital Sub-district Hospital Health Center
 Dispensary can't recall Don't Know refused to answer Delivered at home

64. How did you reach this health facility?

Motorcycle Bicycle Taxi Passenger Service Vehicle On foot

65. Did your husband accompany you to the health facility during the delivery of your child? (If no, move to 67)

Yes No Can't Recall Refused to answer

66. Why didn't he accompany you to the facility for delivery?

He was available but declined He was away Wasn't married by then

67. Did you have any complications during labor and delivery? (If no, move to 69)

Yes No don't know Declined to answer

68. Please describe what the complication was _____

69. Does your husband drink alcohol?

Yes No don't know Declined to answer

70. Do you think the day and timing of your ANC appointments were convenient for the man to accompany you?

Yes No Don't Know Refuse to answer can't recall

71. Which days would have been convenient for him to accompany you to the ANC?

Weekdays Weekends Don't Know Refuse to answer can't recall

72. Which timing would be convenient for him to accompany you to the ANC?

Mornings Evenings Afternoon Refuse to answer don't know can't recall

73. Do you think the cultural beliefs discourage men from attending ANC with their partners?

Yes No Don't Know Refuse to answer can't recall

74. Please tell us a belief that discourages your husband from attending ANC with you _____

Appendix 5: Study Questionnaire-Swahili Version

Ushirika wa wanaume katika harakati ya kuzuia na kumaliza maambukizi ya mtoto kutokana na virusi vya ugonjwa wa ukimwi kwa mama mja mzito, na kuzingatia yale mambo ambayo yanawafanya kushiriki pale wilaya ya Kisumu mashariki.

SEHEMU: VITAMBULISHI

Jina la mtafiti _____ Namabari ya simu _____

Nambari ya mshirika □□□

Tarehe ya utafiti (dd/mm/yyyy) _____ / _____ / _____

SEHEMU II: VIAMBATANISHO VYA MAMA

1. Una mtoto mwenye umri chini ya miezi 24? (*Ndio, enda swali namba 2. La, achana na utafiti*)

Ndiyo

La

2. Umri _____

3. Kiwango cha masomo _____

4. Kazi anayofanya _____

5. Anapoishi _____

6. Hali ya kuolewa _____

7. Uko na watoto wangapi? _____

8. Umri wa mtoto _____ miezi

SEHEMU II: VIAMBATANISHO YA USHIRIKA WA WAUME

9. Ulikuwa ukiishi na mwanaume ulipokuwa mja mzito?

Ndiyo La 0715684105

10. Kwa wakati huu je, bado unaishi na huyo mwanaume?

Ndiyo La

11. Mume wako ako na umri gani? _____

12. Mume wako amesoma kiasi gani? _____

Hakumaliza msingi Alimaliza msingi Hakumaliza sekondaria Alimaliza sekondaria

Chuo kikuu Kolej Sijui Alidinda kujibu

13. Mume wako anafanya kazi gani? _____

14. Uko na mke mwenza? (Ndiyo, enda swali namba 16)

Ndiyo La Sijui Alikataa kujibu

15. Uko na wake wenza wangapi? _____

16. Ulipoolewa ulikuwa na umri wa miaka gani? _____

17. Ulienda kwenye kliniki ya wamama waja wazito ulipokuwa mja mzito? (La, enda swali namba 48)

Ndiyo La Sijui Alikataa kujibu

18. Ulienda kliniki wapi?

- Hospital ya wilaya Hospital ya wilaya ndogo Health Center Dispensari
 Sijui Alikataa kujibu Hawezi kumbuka

19. Ulienda kliniki mara ngapi?

- Moja Mbili Tatu Nne Zaidi ya mara nne
 Sijui Alikataa kujibu Hawezi kumbuka

20. Ulikosa kuenda kliniki yoyote ambayo ulikuwa unafaa kuenda? (La, enda swali namba 22)

- Hawezi kumbuka Ndiyo La Sijui Alikataa kujibu

21. Mbona ulikosa kuenda hiyo kliniki? _____

22. Mume wako alikusindikiza hadi klinikini wakati ulipoenda? (La, enda swali namba 48)

- Hawezi kumbuka Ndiyo La Sijui Alikataa kujibu

23. Alikusindikiza ulipokuwa unaenda kliniki kwa mara ya ngapi?

- Kwanza Pili Tatu Nne Zaidi ya nne _____

- Sijui Alikataa kujibu Hawezi kumbuka

24. Mlielezewa kupimwa kwa pamoja na mume wako mlipoenda kwenye kliniki?

- Hawezi kumbuka Ndiyo La Sijui Alikataa kujibu

25. Ulikubali kupimwa ugonjwa wa ukimwi? (Ndiyo, enda swali namba 27)

Hawezi kumbuka Ndiyo La Sijui Alikataa kujibu

26. Mbona ulikataa kupimwa? _____

27. Mume wako alikubali kupimwa ugonjwa wa ukimwi? (Ndiyo, enda swali namba 29)

Hawezi kumbuka Ndiyo La Sijui Alikataa kujibu

28. Mbona mume wako alikataa kupimwa ugonjwa wa ukimwi? _____

29. Kama mlilibali kupimwa, mlifanyiwa ile kanseling kabla ya kupimwa? (La, enda swali namba 31)

Hawezi kumbuka Ndiyo La Sijui Alikataa kujibu

30. Mlifanyiwa kanseling pamoja ama kila mtu kivyake?

Pamoja Kila mtu kivyake Sijui Alikataa kujibu

31. Mlipimwa ugonjwa wa ukimwi pamoja kama wapenzi ama kila mtu kivyake?

Pamoja Kila mtu kivyake Sijui Alikataa kujibu

32. Mlipatiwa majibu yenu mkiwa pamoja ama kila mtu alipatiwa majibu kivyake (La, enda swali namba 34)

Pamoja Kila mtu kivyake Sijui Alikataa kujibu

33. Mbona hamkupatiwa majibu pamoja? _____

34. Mlijulishana majibu ya kupimwa ukimwi na mume wako? (Ndiyo, enda swali namba 36)

Pamoja Kila mtu kivyake Sijui Alikataa kujibu

35. Mbona hamkujulishana majibu yenu? _____

36. Unaweza kutujulisha majibu yako ulipopimwa ugonjwa wa ukimwi? (La, enda swali namba 38)

Hawezi kumbuka Ndiyo La Sijui Alikataa kujibu

37. Majibu yako ilikuwa aje (Hana ugonjwa, enda swali namba 39)

Niko na ugonjwa Sina ugonjwa Sijui Alikataa kujibu Hawezi kumbuka

38. Kama ulipatikana na ugonjwa, uliweka kwenye ule mpango wa PMTCT? (La, enda swali namba 40)

Hawezi kumbuka Ndiyo La Sijui Alikataa kujibu

39. Mume wako alikupeleka kwenye klinik tena ukiwa kwenye program ya PMTCT?

Hawezi kumbuka Ndiyo La Sijui Alikataa kujibu

40. Ulikuwa na ugonjwa wa ukimwi kabla ukuwe mja mzito?

Hawezi kumbuka Ndiyo La Sijui Alikataa kujibu

41. Majibu ya mume wako yalikuwa aje?

Nilikuwa na ugonjwa Sikuwa na ugonjwa Sikumbuki Sijui Alikataa kujibu

42. Kabla upimwe ukiwa mja mzito ulikuwa unajua hali yako ya ukimwi? (La, enda swali namba 44)

Hawezi kumbuka Ndiyo La Sijui Alikataa kujibu

43. Hali yako ulikuwa aje wakati huo?

Nilikuwa na ugonjwa Sikuwa na ugonjwa Sikumbuki Sijui
Alikataa kujibu

44. Kabla mpimwe ugonjwa wa ukimwi kwenye kliniki, mume wako alikuwa anajua hali yake ya ugonjwa wa ukimwi? (La, enda swali namba 46)

Hawezi kumbuka Ndiyo La Sijui Alikataa kujibu

45. Hali yake ya ugonjwa ulikuwa aje?

Nilikuwa na ugonjwa Sikuwa na ugonjwa Sikumbuki Sijui
Alikataa kujibu

46. Kabla ya kupimwa kwenye kliniki, mlikuwa mmepimwa pamoja hapo mbeleni?

Hawezi kumbuka Ndiyo La Sijui Alikataa kujibu

47. Alikupeleka tena kwenye klinik baaada ya ule wakati ambapo nyni nyote mlipimwa?

Hawezi kumbuka Ndiyo La Sijui Alikataa kujibu

48. Mliwahi tumia mpira wa kondom ukiwa mja mzito? (La, enda swali namba 50)

Hawezi kumbuka Ndiyo La Sijui Alikataa kujibu

49. Nani aliamua mtumie mpira wa kondom ukiwa mja mzito?

Mimi Mume Tulijadiliana Sijui Alikataa kujibu Hawezi kumbuka

50. Umewahi tumia dawa ama kinga ingine dhidi ya mimba ukiwa na huyu mumue mmoja tu? (La, enda swali namba 52)

Hawezi kumbuka Ndiyo La Sijui Alikataa kujibu

51. Nani aliamua mtu,ie hiyo dawa ama kinga?

Mimi Mume Tulijadiliana Sijui Alikataa kujibu Hawezi kumbuka

52. Kwa wakati huu, unajua hali ya mume yako ya ugonjwa wa ukimwi?

Hawezi kumbuka Ndiyo La Sijui Alikataa kujibu

53. Je, mume wako anajua hali yako ya ugonjwa wa ukimwi?

Hawezi kumbuka Ndiyo La Sijui Alikataa kujibu

54. Ulibeba mimba ukiwa na virusi vya ukimwi?

Hawezi kumbuka Ndiyo La Sijui Alikataa kujibu

55. Je, mume wako anajua hali ya ugonjwa wa ukimwi wa mtoto wenu?

Hawezi kumbuka Ndiyo La Sijui Alikataa kujibu

56. Mume wako amewahi kukusindikiza ukipeleka mtoto kwenye kliniki ya HEI?

Hawezi kumbuka Ndiyo La Sijui Alikataa kujibu

57. Mume wako alikuwa anajua tarehe ya kurudi kwako kwenye kliniki?

Hawezi kumbuka Ndiyo La Sijui Alikataa kujibu

58. Mume wako alikuwa anayatambua yale services yanayoendelea kwenye kliniki ya mama waja wazito?

Hawezi kumbuka Ndiyo La Sijui Alikataa kujibu

59. Mume wako alikusaidia na pesa ya kuendea kliniki am ahata kujifungua? (La, enda swali namba 61)

Hawezi kumbuka Ndiyo La Sijui Alikataa kujibu

60. Alikusaidia aje na pesa?_____

61. Mume wako aliwahi kukuchapa au kukupiga ukiwa na mimba?

Hawezi kumbuka Ndiyo La Sijui Alikataa kujibu

62. Amewahi kukupiga kwa wakati wowote tangu muoane

Hawezi kumbuka Ndiyo La Sijui Alikataa kujibu

63. Mtoto wako ulimzaa hospitali gani? (Hakuzaa hospitali, enda swali namba 67)

Hospital ya wilaya Hospital ya wilaya ndogo Health Center Dispensari
 Sijui Alikataa kujibu Hawezi kumbuka Nilizalia nymbani

64. Ulifika aje kwenye hospitali hiyo?

Pikipiki Baiskeli Taxi Gari ya abiria Nilitembe tu kwa mguu

65. Mume wako alikupeleka hospitalini ulipokuwa unaenda kujifungua? (La, enda swali namba 67)

Hawezi kumbuka Ndiyo La Sijui Alikataa kujibu

66. Mbona hakupeleka hospitalini uende ukajifungue?

Alikuweko lakini alikakataa Hakuwa nyumbani Sikuwa na mume wakati huo

**67. Ulikuwa na shida yoyote wakati ulipojifungua am ahata baada ya kujifungua?
(La, enda swali namba 69)**

Hawezi kumbuka Ndiyo La Sijui Alikataa kujibu

68. Tafadhali tuelezee ulikuwa na shida gani _____

69. Mume wako anakunywa pombe?

Hawezi kumbuka Ndiyo La Sijui Alikataa kujibu

70. Kwa maoni yako, ule wakati na siku ulipoandikiwa uende kliniki, yalikuwa sawa na mume wako kukupeleka hospitali?

Hawezi kumbuka Ndiyo La Sijui Alikataa kujibu

71. Ungependelea kliniki iwe siku gani ndiyo aweze kupata nafasi ya kukupeleka kliniki?

Kati ya wiki Wikend Sijui Alikataa kujibu Sikumbuki

72. Masaa gani ndiyo nzuri ili aweze kukupeleka kliniki?

Asubuhi Jioni Mchana Alikataa kujibu Sijui Hawezi kumbuka

73. Kwa maoni yako, unafikiria mila na desturi inawazuia wanaume kusindikiza wake wao kwenye kliniki?

Hawezi kumbuka Ndiyo La Sijui Alikataa kujibu

74. Tafadhali tuelezee mfano wa mila na desturi ambayo inazuia wanaume kusindikiza wake wao wakienda kweny kliniki. _____