

**UPTAKE OF FOCUSED ANTENATAL CARE SERVICES AMONG WOMEN OF
REPRODUCTIVE AGE IN NAKURU COUNTY, KENYA**

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DECLARATION

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

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DEDICATION STATEMENT

This study is dedicated to my husband, Joseph Mutua; daughters Therese Nia, Theoclia Amani and son Thaddeus Imani.

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ABBREVIATION AND ACRONYMS

AIDS	Acquired immune deficiency syndrome
ANC	Antenatal care
APGAR	Appearance, Pulse, Grimace, Activity, Respiration.
CHW	Community Health Worker
DHIS	District Health Information System
FANC	Focused Antenatal Care
FGDs	Focused Group Discussions
GoK	Government of Kenya
HB	Hemoglobin
HIV	Human immunodeficiency virus
IFAS	Iron Folic Acid Supplementation
IGAs	Income Generating Activities
KDHS	Kenya Demographic Health Survey
KNBS	Kenya national Bureau of Statistics
MDG	Millennium development goal
MMR	Maternal Mortality rate
MOH	Ministry of Health
NHIF	National Hospital Insurance Fund
NMR	Neonatal Mortality Rate
PMTCT	Prevention of Mother to Child Transmission
PPH	Postpartum hemorrhage
TTV	Tetanus Toxoid Vaccine
U5MR	Under-five mortality rate
UNICEF	United Nations Children's Fund
VDRL	Venereal Disease Research Laboratory test (VDRL)
WHO	World Health Organization

DEFINITION OF OPERATIONAL TERMS

Cues to action for mothers: -The respondent's triggers in their decision-making in the uptake of FANC services whether internal or external.

Eclampsia: - Acute and life-threatening complication of pregnancy characterized by the appearance of tonic-clonic seizures (convulsion), usually in a woman who has developed pre-eclampsia

Grimace: - Type of facial expression usually of disgust, disapproval, or pain

Hemoglobin:-Iron-containing oxygen-transport protein in the red blood cells of all vertebrates

Hemorrhage: -Medical term for bleeding, usually excessive bleeding which may be "external" and visible on the outside of the body or "internal," where there is no sign of bleeding outside the body.

Linda mama programme: It's an initiative of free maternal services that includes both outpatient and inpatient services for the mother and newborn for a period of one year as well as Antenatal Care, Delivery, Postnatal Care and Emergency referrals for pregnancy related conditions as well as complications.

Antenatal care: -Care provided by skilled health care professionals to pregnant women in order to ensure the best health condition for both mother and baby

Women of reproductive age: -Refers to all women aged 15 to 49 years

Modifying factors: -These include socio-demographic aspects such as age, parity, religion, education status, social values, beliefs and practices of pregnant women in relation to uptake of FANC

Morbidity: - Diseased state, disability, or poor health

Mortality: - The state of being mortal, or susceptible to death.

Perceptions of mothers: -These includes the respondent's perception in relation to their risk of developing pregnancy related complications, their perceived severity of consequences related to pregnancy and labor complications, their perceived benefits in attending FANC as well as their perceived barriers in the uptake of FANC.

Postpartum: - Period within 42 days after delivery

Pre-eclampsia: - Disorder of pregnancy characterized by high blood pressure and large amounts of protein in the urine.

Skilled birth attendant:-Midwife, physician, obstetrician, nurse, or other health care professional who provides basic and emergency health care services to women and their newborns during pregnancy, childbirth and the postpartum period

Uptake of FANC: - In this study, it refers to the number of visits a pregnant woman attends antenatal care clinics as well as gestation age at which she makes her initial FANC visit.

VDRL: - Blood test used to screen for syphilis disease

Women's Self-Efficacy Level: -The respondents' level of self-belief in their ability to successfully overcome barriers in seeking FANC services

ABSTRACT

The desire to correct the poor implementation of traditional antenatal care (ANC) in developing countries resulted to the adoption of antenatal care model termed as Focused Antenatal Care (FANC). The goal of FANC is to ensure a good outcome for both the baby and mother and prevent complication during pregnancy, labor, delivery and postpartum period. It is characterized by four main focused visits. Studies have shown that Kenya has long suffered from high maternal morbidity and mortality one of the strategies to reduce the high Maternal Mortality Rate (MMR) is effective implementation of FANC. The aim of this study was to identify uptake of FANC services among women of reproductive age with emphasis on their perceptions, cues to action and self-efficacy levels. The health belief model was adopted in the study to guide the researcher in understanding the respondents' behavior in seeking FANC services. The broad objective was to identify uptake of focused antenatal care services among women of reproductive age in Nakuru County. A cross sectional study was carried out. Data collection involved use of a pre-tested questionnaire for quantitative data and Focused Group Discussion (FGD) guide for qualitative data. The sample size was 337 participants who had delivered within two years. Data analyses was done using SPSS version 21 while chi square test was used to compare association between variables and content analysis for qualitative data. The study found that the demographic factors significantly associated with the uptake of FANC include age ($p = 0.0002$), marital status ($p = 0.007$), education ($p = 0.004$), occupation ($p = 0.035$) and the number of children alive ($p < 0.001$). It was also established that achieving or not achieving FANC is significantly associated ($p < 0.05$) with high, moderate or low levels of perceived susceptibility ($p = 0.015$), perceived severity ($p = 0.03$), perceived barriers ($p < 0.001$), cues to action ($p = 0.003$) resulting from external influence, cues to action resulting from desire to have good pregnancy outcomes and levels of self-efficacy ($p < 0.001$). The study recommends that the Ministry of Health and other health sector should take cognizance of demographic characteristics associated with uptake of FANC. There is need for the Ministry of Health and other development partners to further strengthen the cues to action of women associated with the uptake of FANC services in Nakuru County. There is need to strengthen sensitization, information sharing and follow-up on FANC in a move to improve the uptake of FANC in Nakuru County

CHAPTER ONE: INTRODUCTION

1.1 Background to the study

Worldwide 303,000 thousand women die each year as a result of pregnancy related complications (WHO,2015). An estimated 2.6 million babies are born still birth and four million more newborns die in the neonatal period (Cousens et al., 2011). Many of these deaths could be prevented through interventions delivered as part of basic antenatal care services such as micronutrient supplementation and nutrition education, malaria prevention, tetanus toxoid immunization, HIV and syphilis screening, and screening and treatment of pre-eclampsia and other hypertensive disorders (Ishaque et al., 2011).

Kenya has long suffered from high maternal morbidity and mortality rates (Otieno, 2013). The most recent estimates set the maternal mortality ratio at 362 deaths per 100,000 live births (KNBS, 2014), well above the SDG target of less than 70 per 100,000 live births by 2030 (UNICEF, 2015). The problem of high maternal mortality is driven, at least in part, by lack of access to quality maternal health services, including ante-natal, delivery, and post-natal services (Bourbonnais, 2013).Appropriate use of focused antenatal care (FANC) services can improve maternal health . The call for adoption of antenatal care model termed as FANC emanated from the desire to correct the poor implementation of traditional antenatal care (ANC) in developing countries. Focused Antenatal Care (FANC) is a comprehensive personalized care given to a pregnant woman which emphasizes on her overall health, birth preparedness and complication prevention (MoH, 2007).

It is a simple, timely, friendly, affordable and safe service to a woman. The goal is to ensure a good outcome for both the baby and mother and prevent complications during pregnancy, labor, delivery and the postpartum period. Studies have reported that pregnant women and their husbands are seen as ‘risk identifiers’ after receiving counseling on danger signs and they are also ‘collaborators’ with the health service by accepting and practicing the given recommendations (Teate et al., 2011). Therefore, studying the women’s involvement in observing all the four FANC visit is critical in determining positive outcome and prevention of complication during pregnancy, labor, delivery and post-partum period (MoPHS/MoMS, 2012). Against this background, this study is aimed at identifying the determinants of uptake of FANC among women of reproductive age in Kuresoi North sub-county.

1.2 Problem statement

Proper uptake of FANC is one of the important ways in reducing maternal and child morbidity and mortality. Worldwide 303,000 thousand women die each year as a result of pregnancy related complications and 99% of all maternal deaths occur in developing countries, (WHO,2015) . Unfortunately, many women in Kenya, do not receive proper FANC services (Pell et al., 2013). In Kenya the current uptake of FANC is at 57.6%,with the highest uptake of FANC recorded in Nairobi county, at 73% which still fell short of the then millennium target goal of 100% (KNBS, 2014).

Rift valley region is one of the largest regions in Kenya and a host to 14 counties. Out of the 12 counties with a less than 50% attendance of the recommended four FANC visits, 6 are in Rift valley region. The recent uptake of FANC in the region is at 51% (KNBS et al.,

2014). In Nakuru County the maternal mortality ratio is 374/100,000 live births according to (UNFPA, 2013), which is way beyond the first target under SDG3 to reduce global maternal mortality ratio to less than 70 per 100,000 live births by 2030.

Nakuru County is a host to Kuresoi Sub-County which has had alarming low intake of FANC services with worrying trends in the past three years, as seen in appendix 1. According to the latest survey on uptake of FANC services, Kuresoi Sub-County scores as low as 28% (KDHS 2015). In addition, few studies have been conducted in this area in Kenya and thus making the available literature limited. Understanding the determinants to this low uptake of FANC is required so as to improve uptake of FANC and reduce the maternal morbidity and mortality rates. This study, therefore, aims to establish the determinants to the uptake of FANC among women of reproductive age in Kuresoi Sub-County in Nakuru County.

1.3 Justification

FANC allows health professional to identify potential risks for the pregnancy, delivery or postnatal and provide prompt treatment for women experiencing health problems during pregnancy (WHO, 2014). Through FANC services women receive assistance in developing a birth plan and be prepared for parenting after the child birth. Other services provided include the provision of Tetanus Toxoid Vaccine (TTV), iron/folic acid supplements and control of nutritional deficiencies (MoPHS/MoMS, 2012). Studies have shown that inadequate antenatal care has been associated with adverse pregnancy outcomes. The FANC model is characterized by at least four focused and comprehensive

visits with the intention to reduce waiting time during antenatal visits and increasing the time spent in educating women on pregnancy-related issues (Richard, 2011).

1.4 Research questions

1. What are the social -demographic characteristics associated with the uptake of FANC services among women of reproductive age in Kuresoi north sub-County?
2. What are the perceptions of women associated with the uptake of FANC services among women of reproductive age in Kuresoi north sub -County?
3. What are the cues to action associated with the uptake of FANC services among women of reproductive age in Kuresoi north sub-County?
4. What are the self-efficacy levels associated with the uptake of FANC services among women of reproductive age in Kuresoi north sub-County?

5. 1.5 Hypotheses

1. H_0 : There is no significant relationship between social demographic characteristics and uptake of focused antenatal care among women of reproductive age.
2. H_0 : There is no significant relationship between women's perception and uptake of focused antenatal care among women of reproductive age
3. H_0 : There is no significant relationship between cues to action and uptake of focused antenatal care among women of reproductive age
4. H_0 : There is no significant relationship between self -efficacy levels and uptake of focused antenatal care among women of reproductive age

Uptake of focused antenatal care is not significantly associated with women's perceptions, social demographic characteristics, cues to action or self-efficacy levels among women of reproductive age.

1.6 Objectives

1.6.1 Broad objective

To identify the determinants of uptake of focused antenatal care services among women of reproductive age in Nakuru County.

1.6.2 Specific objectives

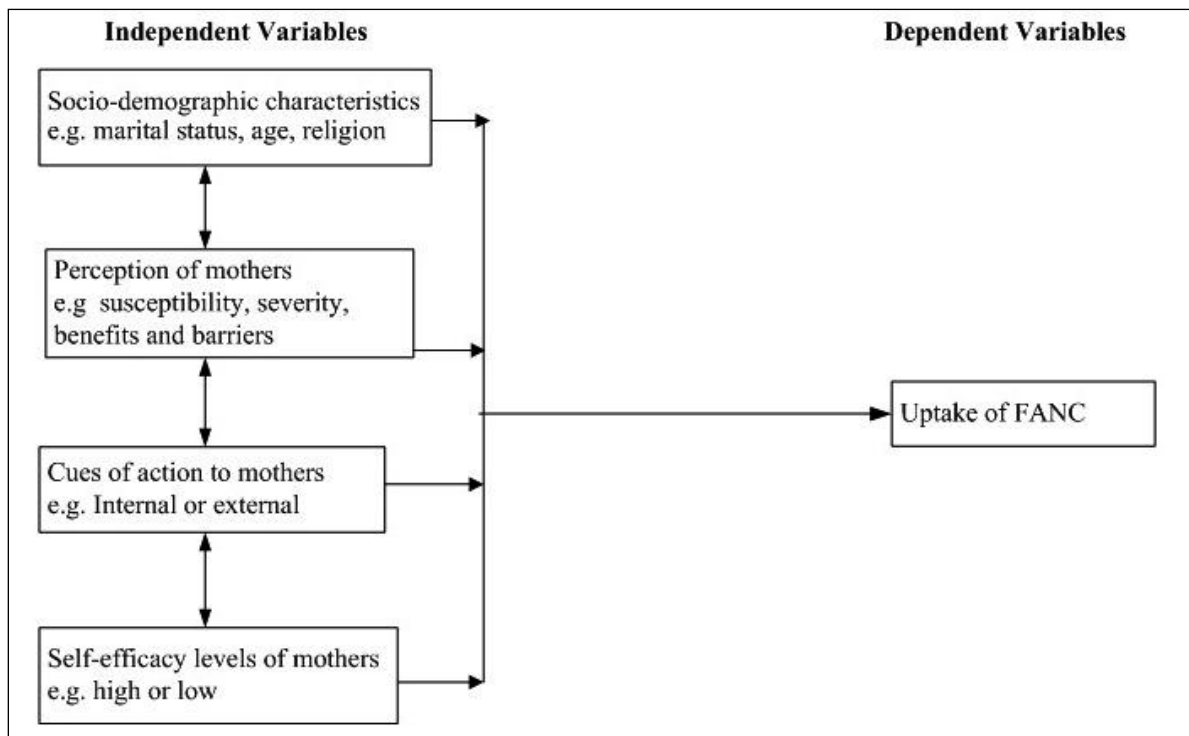
1. To identify the social-demographic characteristics of women of reproductive age associated with the uptake of FANC services in Kuresoi north sub-County.
2. To find out how perceptions of pregnancy, labor and post-partum complications associate with uptake of FANC services in Kuresoi north sub-County.
3. To identify the cues to action associated with the uptake of FANC services among women of reproductive age in Kuresoi north sub-County.
4. To determine the self-efficacy associated with the uptake of FANC services among women of reproductive age in Kuresoi north sub-County.

1.7 Significance and anticipated output

Promoting health and well-being is one of 17 Global Goals that make up the 2030 agenda for sustained development. Significant strides have been made in increasing life expectancy and reducing some of the common killers associated with child and maternal

mortality. However, many more efforts are needed to fully eradicate a wide range of diseases and address many different persistent and emerging health issues (UNICEF, 2015). The findings of this study will help in identifying the determinants to the uptake of FANC and providing insights to policy makers about potential public health strategies to increase the uptake of FANC services. This in turn will contribute to the achievement of SDG 3 which aims at reducing the global maternal mortality ratio to less than 70 per 100 000 live births by 2030.

1.8 Conceptual framework



Source: Adopted from the literature review.

Figure 1.1: Conceptual framework.

The independent variables directly influence uptake of FANC. Socio-demographic aspects such as age, parity, religion, education status, social values, beliefs and practices of pregnant women in relation to uptake of FANC could either positively or negatively influence uptake of FANC. In addition, women with high-perceived perceptions, high cues to action and high self-efficacy levels are more likely to achieve FANC uptake compared to women low perceived perceptions.

FANC uptake in this study refers to the number of visits a pregnant woman attends antenatal care clinics as well as gestation age at which she makes her initial FANC visit. The number of visits and the gestation age at the first visit were categorized as low or adequate based on recommended WHO FANC visits schedule. Adequate FANC uptake therefore referred to a woman who attended four or more FANC visits during the entire pregnancy period as well as started her first FANC visit in the first trimester and maintained the schedule throughout her pregnancy period, otherwise it was categorized as inadequate.

CHAPTER TWO: LITERATURE REVIEW

2.1 Maternal Health

Maternal health is defined as the health of women during pregnancy, childbirth, and the postpartum period. It encompasses the health care dimensions of family planning, preconception, prenatal, and postnatal care in order to reduce maternal morbidity and mortality (Toure et al., 2012). The risk for maternal death (during pregnancy or childbirth) in sub-Saharan Africa is 175 times higher than in developed countries, and risk for pregnancy-related illnesses and negative consequences after birth is even higher (WHO, 2014).

In developing countries, complications of pregnancy and child birth are the leading causes of deaths among women of reproductive age (Say et al., 2014). These deaths can be prevented through provision of focused antenatal care to pregnant mothers (Koch, 2013). In Kenya complications of pregnancy, childbirth and the puerperium are the leading causes of inpatient morbidity and mortality in females of reproductive age (WHO & UNFPA 2014).

2.2. Newborn mortality

Studies have shown that uptake of FANC enhances maternal health, which in turn is inextricably linked with the survival of the newborn (Cousens et al., 2011). Every year four million babies die in the first four weeks of life, many others are stillbirths (MoPHS/MoMS, 2012). Three quarters of neonatal deaths occur within the first week of life and the highest risk of dying is within the first 24 hours (Ishaque et al., 2011). Almost all (99%) neonatal deaths occur in low and middle-income countries (Banda, 2013;

MoPHS/MoMS, 2012; Otieno, 2013). The top three causes of newborn death in Africa are; severe infections (28%), Birth asphyxia (27%), and prematurity (29%) (MoPHS/MoMS, 2012).

This statistics relate with the Kenyan situation since the top three causes of newborn mortality in Kenya are asphyxia and birth trauma which accounts for 30%, prematurity 28%, and sepsis 23% (WHO, 2010). Current trends show that the Neonatal Mortality Rate (NMR) has stagnated and accounts for 60% of all infant mortality rate (Kenya National Bureau of Statistics, 2010). With proper uptake of FANC this high rate in NMR could be reduced and aid in attainment of SDG3.

2.3 Pre-natal care

This refers to the regular medical and nursing care recommended for women during pregnancy. It is a form of preventive care with the goal of providing regular checkups that allow the health care providers to identify, prevent as well as manage potential health issues that may arise during pregnancy (Liu, 2014). There are two models of prenatal care namely, the traditional model and FANC model.

Traditional model of prenatal care is used in many of the developed countries and is based on frequent number of visits, ranging from seven to ten visits. Traditionally ANC services in Kenya involved a pre-clinic session in which nurses socialize with pregnant women through health talks and an interactive session of question and answer. Clinical consultations then followed in open spaces, partitioned clinic spaces or consulting rooms depending on the facilities available in the center. Antenatal clinic appointments were

given monthly until 28 weeks, fortnightly until 36 weeks and then weekly until delivery (Pell et al., 2013).

FANC on the other hand is individualized service given to antenatal women to enhance their overall health and prevent complication during pregnancy, labor and postpartum period. It is intended to reduce waiting time during antenatal visits and increase the time spent in educating women on pregnancy-related issues (WHO & UNFPA 2014) . FANC is characterized by four main objectives, early detection and treatment of complications, Prevention of complications, Birth preparedness and complication readiness and health promotion and counseling (Banda, 2013). In FANC, antenatal visits have been reduced to four main visits preferably before 16 weeks, at 28, 32 and 36 weeks' gestation. FANC is recommended for all pregnant women regardless of their risk factor to develop pregnancy-related complications, medical complications or other major health-related risk factors (MoPHS/MoMS, 2012).

FANC is therefore the most effective model for counties with lean health budgets, few health care providers and limited health infrastructure (Chuma, 2013). The traditional antenatal care model calls for many frequent visits which are not affordable to most of the pregnant women. This poses a financial burden to both the pregnant women and the healthcare system.

This has resulted to most of the resource limited countries like Kenya, to adopt the FANC approach whose important elements include; evaluation (history taking, physical examination and basic investigations). Intervention (prevention/prophylaxis and treatment) and promotion (health education/counseling and health service dissemination

(MoH, 2007).Appendix 2 illustrates the differences and similarities between the two models.

2.3.3. FANC in Kenya

Kenya introduced the comprehensive FANC service package as recommended by WHO, with additional components to respond to national health needs. The new components included PMTCT, intermittent presumptive treatment of malaria, developing an individual birth plan, TB screening, detection and treatment, and education on various topics, including rest, nutrition, and exercise in pregnancy, breastfeeding information, family planning, and planning for postpartum care (MoPHS/MoMS, 2012) Guidelines specified the appropriate times for providing specific services and education, for example, measuring blood pressure and education on nutrition at all four visits; and assessing the fetal position and providing information on family planning at the third and fourth visits (Ayiasi et al.,2014).

2.4 The health belief model

The Health Belief Model (HBM) was developed in the early 1950s to understand the failure of people to adopt disease prevention strategies or screening tests for the early detection of disease. The HBM derives from psychological and behavioral theory with the foundation that the two components of health-related behavior are; The desire to avoid illness or conversely get well if already ill and the belief that a specific health action will prevent or cure illness (Rosenstock, 1974). This study was based on HBM theory to identify the determinants of FANC utilization .HBM believe that ultimately, an individual's course of action often depends on the person's perceptions of the benefits and

barriers related to health behavior (Bandura, 1977). The HBM will be used in this study to explain the utilization of health services being dependent on people's modifying factors, perceptions, cues to action and self-efficacy levels. Appendix 4 diagrammatically represents the health belief model in line with this study.

2.4.1 Socio demographic characteristics

These include factors such as education status, age, religion, parity, beliefs and practices of women influence their uptake of FANC services (Chivonivoni et al., 2008). This is also in agreement with a study conducted in Malawi that found that low utilization of FANC was significantly associated with a higher parity and maternal age range of between 20-25 years while occupational status was associated with increased uptake of FANC services (Banda, 2013).

Similarly, Unmarried women in Kenya, who started childbearing before 20 years of age, had fewer antenatal visits than married women who started at a later age (Akinyi et al., 2010). In another study on factors affecting utilization of FANC in developing countries identified several factors including: maternal education, husband's education, marital status, availability, cost, household income, women's employment, media exposure and cultural beliefs and ideas about pregnancy and parity (Pell et al., 2013).

2.4.2. Perceptions of mothers towards the uptake of FANC services

2.4.2.1 Perceived Susceptibility

The probability of seeking health interventions among people will increase proportionately to the increase in the level of perceived susceptibility and people will not

change their health behaviors unless they believe that they are at risk of contracting a health problem (Sebaya, 2012) for instance, antenatal women are more likely to seek antenatal care services if they believe that they are at risk of developing pregnancy related complications. This is well illustrated in a study where women below 35 years made frequent antenatal visits to monitor the growth of their unborn babies compared to older, multiparous women who had not experienced previous antenatal problems who made fewer visits. (Thubelihle et al., 2011).

These findings agree to another study conducted at Geroka hospital in New Guinea, where 80% of the participants acknowledged that there was a possibility of complications during pregnancy and that going to FANC was a way of finding out whether or not they were healthy in their pregnancy (Sebaya, 2012).

In another study in Nigeria, 77% of pregnant women reported that only the pregnant women who are likely to have problems requiring treatment by a doctor should start clinic from the first trimester, hence the late initiation of ANC (Adeniyi, 2013). Similarly the perceived lower risk associated with births of higher order may explain the greater odds of inadequate visits among multiparous women as higher parity women may not feel the need to use antenatal services, due to their accumulated pregnancy experiences and knowledge of the birthing process (Chama, 2015).

2.4.2.2 Perceived Severity

The probability that a person will change his/her health behavior to avoid a consequence depends on how serious he or she considers the consequence to be, for instance pain,

handicap, death (Brown et al.,1992). In a study conducted in Uganda, among mothers having under five children a quarter of the mothers reported having lost at least one child in the years preceding the current baby which resulted to them seeking antenatal care early enough in their recent pregnancy (Richard, 2011).

In another study conducted in Zambia, although all the women in the selected sample had at least one ANC visit, 40% had three or fewer visits and more than 80% did not have antenatal check-ups in their first trimester because they felt it was not necessary (Koch, 2013). These results suggest that, even though the objective of increasing ANC coverage to all women has been achieved, there are missed opportunities for early interventions, for instance the prevention of mother to child transmission of HIV/AIDS because too few women seek ANC in the first trimester as they do not perceive the dangers of not utilizing FANC in the first trimester.

2.4.2.3 Perceived Benefit

Research has shown that it is difficult to convince people to change a behavior if there isn't something in it for them (Redding, 2013), For instance, a study conducted in Malawi showed that majority (85%) of the participating women were assured of receiving vaccines, supplements and malaria prophylaxis by attending FANC clinic (Banda, 2013). Focused antenatal care is considered to be effective in improving outcomes for pregnant women and their babies (MoH, 2007). Booking for antenatal care before 16 weeks gestation is recommended to ensure that women do not miss interventions, monitoring and screening that might benefit their health and that of their babies (Banda, 2013)

A study conducted among pregnant women on the reasons why they attended focused antenatal care revealed that 78% wanted to seek care for themselves, seek care for their unborn children as well as to receive education or expected health treatment (Sebaya, 2012). These findings are similar to a study conducted in Nigeria where 60% of the women reported their reasons for attending antenatal care was to secure a place of delivery at the hospital which they believed would be facilitated by attending ANC and also to receive health education in relation to pregnancy. These findings indicate that the women were attending the FANC clinic due to the expected benefits.

2.4.2.4 Perceived barriers associated with uptake of FANC

One of the major reasons people do not change their health behaviors is that they think that doing so is going to be hard. Sometimes it's not just a matter of physical difficulty, but social difficulty as well (Redding, 2013). In view of this study, ability of a pregnant woman to seek FANC services will depend on her ability to overcome the expected barriers. Studies have highlighted common barriers to the uptake of FANC to include, complexity of related procedures in the facility, lack of knowledge regarding the purpose and importance of FANC services, preference for local services, lack of resources to travel to services outside the community, women's perception that health care workers do not treat them respectfully and sensitively as individuals with complex needs, failure to provide professional interpreters when needed and concern that cultural preferences for female health care staff may not be respected (Banda, 2013). Studies have also shown that, use of antenatal care is infrequent for unwanted and mistimed pregnancies; even women who use antenatal care frequently appear to be less consistent if a pregnancy is

mistimed (Pell et al., 2013). In other studies, women who required to get permission from their husbands had significantly fewer than required number of ANC visits. (Begum et al.2014; Sibiya et al.2018; Callixte et al 2017; Adeniyi and Erhabor . 2015)

In another study conducted in Japan among pregnant women on their utilization to FANC, the researcher found out that 93.4% mentioned that they had no time to visit the ANC, 83.8% reported that they felt they were in sufficiently good health, 74.3% said that they were embarrassed, while 71.3% reported that they lived too far away from an ANC service (Yang, 2010). In Kenya barriers to ANC uptake are not different from global and developing countries as a study by (Banda, 2013) showed that the use of antenatal care in Kenya is associated with a range of socio-economic, cultural, reproductive factors, availability and accessibility of health services , desirability of a pregnancy ,however there is very little known about uptake of FANC in Kenya and thus the interest to study this area.

2.4.3 Cues to action of mothers associated with the uptake of FANC services

Cues to action which are the stimulus needed to trigger the decision-making process to accept a recommended health action (Mark, 2012) influence a woman's uptake for FANC. These cues can be internal (for instance, persistent headache-hypertensive mothers dizziness-anemic mothers) or external (for instance., advice from others, previous adverse pregnancy outcome, newspaper article).For instance, women who had a history of obstetric complications were found to have a higher uptake of FANC services (Agus et al.,2012).

In a study conducted in Goroka hospital in New Guinea, 65% of the study participants attended focused antenatal care so as to receive information regarding the state of their unborn child, while 60% attended FANC so as to receive medical and nutritional supplements and an equally 60% common reason given was to receive general antenatal care and to discover any sickness in themselves (Sebaya, 2012). In another study conducted in Zambia on utilization of FANC the findings from the study suggested that the content of FANC is an important determinant of use, and that improving the content and quality of care given could encourage the overall use of FANC services (Koch, 2013). A study conducted in Cameroon highlighted that women who had attended antenatal visits in their previous pregnancy thought that it was beneficial to start ANC early in pregnancy unlike those who did not have this experience and who opted for third trimester enrollment (Ayiasi et al., 2014).

2.4.4 Self-efficacy levels of mothers associated with uptake of FANC

Self-efficacy, which refers to a person's level of confidence or self-belief in his or her ability to successfully perform/execute a behavior that will lead to a desirable outcome has been a challenge in regards to FANC utilization and practice (Richard, 2011). In this study, it referred to a woman's optimistic self-belief about being capable to overcome associated barriers/challenges and to adopt a healthy lifestyle in regard to the utilization of FANC. Despite substantial evidence linking improved pregnancy outcomes with receipt of prenatal care, majority of women started prenatal care in the recommended first trimester, but most did not maintain the recommended schedule of visits with their care provider (Pell et al., 2013).

Similar results were seen in a study conducted in Japan in which among pregnant women who visited ANC, the highest number of respondents, 64.3%, had visited less than four times during their previous pregnancies, whereas only 35.7% had visited four times or more ,majority of respondents, 58.7% had started visiting ANC during their second trimester (Yang, 2010). These results are not different in Kenya as a study conducted in western Kenya revealed that about 90% of pregnant mothers visited the antenatal clinic at least once during their last pregnancy. Out of those who visited ANC, most women (64%) first visited the ANC in the third trimester (Odhiambo et al., 2012). Narrowing down to our study area Kuresoi Sub-County, according to the District Health Information System (DHIS 2013) out of 68% of women who started the first FANC visit only 22% percent completed the four visits.

Self-efficacy or confidence was found to be the most statistically significant concept of health belief in a study conducted among nurses in regard to the practice of Self-Breast Examination (SBE). If a nurse felt satisfied in her ability to perform SBE correctly and detect abnormalities she was more likely engage in SBE (Valorie, 2013). Self-efficacy is something inherent within all people and it drives us to participate and excel in whatever activities we may choose, including school, work, health activities or personal development. A little confidence in our abilities can go a long way, and any hindrance in self-efficacy can have widespread and sometimes damaging effects (Jennifer, 2014). In the context of this study, if a woman feels confident in her ability to timely and consistently seek FANC services, she will more likely overcome associated barriers in seeking and utilizing FANC services.

2.5 Summary of literature review.

According to the Kenya Demographic Health Survey (2014) report, only 58 % of the women reported having four or more antenatal visits for their most recent birth. The situation is even worse in Kuresoi Sub-County where only 28% of women completed the four FANC visits. The literature has highlighted some factors associated with low utilization of FANC with several studies agreeing that most mothers not only have less than the four outlined WHO FANC visits but also delay in starting the uptake of FANC. The review has also highlighted benefits of early attendance in identifying and mitigating the potential complications during pregnancy and after delivery that can cause maternal or infant mortality. The health belief model has been adopted in this study to guide the researcher in highlighting the respondent's behavior in seeking FANC services. In summary, putting the HBM concepts together, the combined levels of susceptibility and severity provides the energy or force to act and the perception of benefits (less barriers) provides preferred path of action. Additionally, there must be a stimulus, or cue to trigger the action, however the intensity of the cue needed to initiate action is inversely proportional to the individual's psychological readiness.

CHAPTER THREE: MATERIALS AND METHODS

3.1 Research design

A cross sectional descriptive study design was used to aid an investigation of the uptake of FANC among women of reproductive age in Nakuru County. The study used both qualitative and quantitative approaches in data collection to give a better understanding of the research question being studied as suggested by Cottrell & McKenzie (2011).

3.2 Study Area

The study was conducted at Kuresoi North Sub-County (Bounded by latitude 0.079S, 0.723S and longitude 35.414E, 35.765E) in Nakuru County. The population of Kuresoi North Sub-county is about 124,050 (spread over an area of approximately 559.70 in sq.km.) whose main source of income is Agriculture. Administratively it's divided into four (4) wards: Kiptororo, Nyota, Sirikwa, Kamara wards. It is served by 20 health facilities (2 community units, 13 dispensaries, 3 health centres, and 2 medical clinics).

The study was conducted in two purposively selected wards in Kuresoi North namely, Kamara the largest followed by Sirikwa. Kamara ward is divided into 3 sub-locations (Mau, Kamara, Sinendet), 36 villages and 3438 households while Sirikwa ward is divided into two sub-locations (Sirikwa and Set kotes), 48 villages and 4087 households. The study sampled from all the sub-locations. The two wards had a population of approximately 32,138 (KNBS 2010). Appendix 5 shows the study area map.

3.3 Study population

The study population was all women of reproductive age in Kuresoi North Sub-County.

3.3.1 Inclusion criteria

All women of reproductive age in Kuresoi North Sub-County within two years post-delivery who consented to participate in the study, or whose guardian assented for their participation (for women less than 18 years).

3.3.2 Exclusion criteria

All women of reproductive age in Kuresoi North Sub-County within two years post-delivery who did not consent to participate in the study, or whose guardian did not assent for their participation (for women less than 18 years).

Mothers whose pregnancy was classified as high risk thus requiring more antenatal follow up and those who were more than two years post-delivery were also not included in the study.

3.4 Sampling

3.4.1 Sampling techniques

For quantitative data, three hundred and forty (340) women were selected to participate in the study. Kuresoi North Sub-County was purposively selected as the target study area due its continued low uptake of FANC in the past three years (Appendix 6). The two largest wards were purposively selected in Kuresoi North - Kamara and Sirikwa. From the list of villages in each of the two wards, 18 and 24 villages were randomly selected from Kamara and Sirikwa wards respectively,

making a total of 42 villages. In each selected village, households were randomly selected from the respective household listing, using systematic sampling. There were 4633 households in the 42 villages. To select the households to participate in the study, a sampling interval of 13 was used (Total number of households divided by the sample size, $4633/340 = 13$). A total of 356 households were selected to participate in the study (Appendix 15). lastly from each household, one woman of reproductive age within two years post-delivery (to minimize on recall bias) was selected to participate in the study.

For the qualitative data, out of the seven women groups in both wards only one from each ward was purposively selected to participate in the study as the rest of the groups did not meet the study criteria -3 of them were comprised of members who were not in the child bearing age (50 years and above), and the other two were not active. From the selected women groups, the group leaders assisted in purposive selection of between 6-12 participants for FGDs, to obtain a diverse group in terms of age, residence, and education levels. However, care was taken to ensure that the diversity leads to an active discussion rather than prohibiting some members from speaking freely.

3.4.2 Sample size determination

The sample size calculation was based on Fisher's statistical formula for estimating the minimum sample size for prevalence descriptive studies (fisher's et. al., 1998).

$$n = \frac{Z^2 p(1 - P)}{d^2}$$

Where;

n = minimum sample size

$Z_{\alpha/2}$ = Standard errors from mean corresponding to the 95% confidence level

P = Estimated level of adherence to uptake of FANC in Kuresoi (28%) (Kenya National Bureau of Statistics, 2010)

Q = $1-p$ (the proportion of population without characteristics.)

d = the allowable error

Substitution:

$$\begin{aligned} n &= z^2 \times p(1-p)/d^2 \\ &= \frac{1.96^2 \times 0.28 \times 0.72}{0.05^2} \\ &= 310 \end{aligned}$$

Considering the possibility for non-response rate, a 10% increment of sample size was necessary (Israel, 2009), bringing the total sample size to 340.

3.5 Research Instruments

Interviewer administered questionnaires were used to collect quantitative data. The questionnaires were with open and closed ended questions in English, but translated to Kiswahili (Appendix 12 and 14), which is the language that the study participants were proficient in. The questionnaire had sections on socio-demographic and economic characteristics of the participants, pregnancy history (number of ANC visits), perceptions of FANC utilization (perceived susceptibility, severity, benefits and barriers), and questions to measure cues to action and self-efficacy. Results from FGDs are analyzed thematically to support the quantitative analysis.

3.6 Pre-test

A pre-test was carried out to test the validity of the questionnaire at Nyota ward a neighboring ward to the study area.

3.7 Data Collection Techniques

The quantitative data was collected through household visits, where four research assistants administered the questionnaires to the participants. The research team made use of local authorities as guides to show them the selected households as well as to introduce the researchers to the household. Data collection was done after informed consent, or assent was obtained. The information given was verified by reviewing the ANC booklet (if any) and finally the research assistants thanked the mother for participating in the study.

For the qualitative data, FGDs were conducted in a central place that was convenient for all participants. This was done after informed consent, or assent was obtained. The moderator with an aid of a note taker conducted the focused group discussion in a span of two days (each day in a different ward) for two hours. The moderator guided the FGD whereas the assistant took notes, and took care of the audio-recording equipment as well as non-verbal communication. The real names of the participants were not mentioned but instead, pseudonyms were provided to the women, which were used during the FGD.

3.8 Data analysis

All filled data collection instruments were checked for completeness at the end of every day's activity in the field and then filed by the researcher.

3.8.1 Quantitative data

The data was coded and entered into SPSS after which data cleaning was done to ensure completeness and remove any wrongly entered character. A validation of the data was done to ensure only valid data is analyzed. Descriptive statistics used to describe the data included percentages and frequencies. For hypothesis, testing chi-square test of association was used to test association between uptake of FANC and hypothesized factors deemed to affect utilization. Utilization of FANC were classified as Utilized or Not Utilized in accordance to WHO (2004) classification. Since the dependent variable binary (Utilized or Not utilized FANC), binary multivariate logistic regression was used to determine odds ratio, confidence interval and probabilistic values (p-value). The level of uptake of FANC services was computed using the number of visits pregnant women made as well as gestation age at which initial FANC visit was made by pregnant women.

3.8.2 Qualitative data

For qualitative data, content analysis was done, this involved coding and classifying data, also referred to as categorizing and indexing with the aim of making sense of the data collected and to highlight the important messages, features or findings.

Analysis of FGD notes included verbatim transcription of the tapes. The raw data from the tapes and the notes were transformed in a well-organized set of information according to various themes. After the transformations of the raw data, they were ordered in relation to the discussion topics to complement the quantitative findings.

3.9 Ethical Clearance

The proposal was submitted for approval by the Kenyatta University Graduate School, after which it was submitted to the Kenyatta University Ethical Review Committee for ethical clearance. Permission to collect data was sought from relevant authorities including the National Council of Science and Technology (NACOSTI), Ministry of health Nakuru County-department of reproductive health.

Informed consent was sought from the participants, by first informing them of the purpose of the study, the voluntary nature of the study and the freedom to withdraw from the study anytime they wish, anonymity of the research participants, confidentiality of the information they provided, what they stand to gain from participating in the study and that no harm was caused by participating in the study. The participants were also provided with contact information for questions regarding the study, their rights and any other concerns. After the participants had understood this information, those consenting were asked to sign the informed consent form (or stamp their fingerprint for those who cannot write).

Anonymity was ensured by the use of serial numbers in the questionnaires and pseudonyms during the FGD and reporting of the qualitative results. Therefore, the real names of the participants were only used for the purposes of selection and not recorded or used during the analysis and reporting. Privacy and confidentiality of the participant's information was ensured first by restricting access to that information only to the research team. Furthermore, the use of pseudonyms and serial numbers in place of participant's names ensured that the information provided could not be linked to a particular participant.

The results of the study were disseminated to the Ministry of health Nakuru County as well as to other partners implementing maternal and child health programs in Nakuru County.

CHAPTER FOUR: RESULTS

4.1 Introduction

This chapter presents the analysis, presentation and interpretation of the study findings in line with the objectives. The main objective of the study was to identify the determinants of uptake of focused antenatal care services among women of reproductive age in Nakuru County. The specific objectives included 1) To identify the socio-demographic characteristics of women of reproductive age associated with the uptake of FANC services in Nakuru County; 2) To find out how perceptions of pregnancy, labor and post-partum complications associate with uptake of FANC services in Nakuru County; 3) To identify the cues to action associated with the uptake of FANC services among women of reproductive age in Nakuru County and 4) To determine the self-efficacy associated with the uptake of FANC services among women of reproductive age in Nakuru County.

4.2 Uptake of FANC services

The study found that majority of women (73.3%) began attending ANC in their second semester and only 24.63% of the women attended the four FANC visits outlined by WHO (2004). The results also revealed that majority of women (97.92%) attended the 24-26 weeks FANC visit and four women (1.2%) did not attend any FANC. The results are as shown in Table 4.1 and figure 4.2

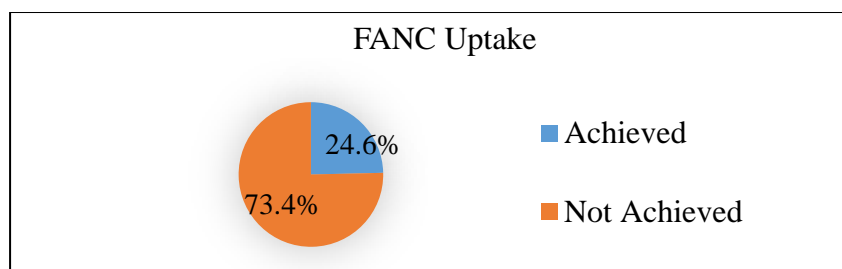


Figure 4.2: Uptake of FANC services

Table 4.1: FANC uptake among women of reproductive age in Kuresoi North Sub-county, Nakuru

ANC attendance		Frequency	Percent
ANC initiation	0 – 3 months (1 st trimester)	83	24.6
	4 – 6 months (2 nd trimester)	247	73.3
	7 – 9 months (3 rd trimester)	3	0.9
	Did not attend ANC	4	1.2
	Total	337	
ANC visits per trimester ^a	0-16 Weeks	83	24.63
	>16-28 Weeks	330	97.92
	>28-32 Weeks	324	96.14
	>32-40 Weeks	316	93.77
	Did not attend any visit	4	1.19
FANC Uptake ^b	Achieved	83	24.6
	Not Achieved	254	75.4
	Total	337	
<p>^a Refers the number of women who reported ANC visits in each trimester, and cumulatively includes those who begun in the first until the last trimester.</p> <p>^b is based on WHO (2004) definition of FANC. Women whose frequency of ANC visits were four and were distributed across the 3 trimesters were classified as having achieved FANC. Those whose frequency of ANC visits were less than four and/or were not distributed across the 3 trimesters were classified as not having achieved FANC.</p>			

4.3 Socio-demographic characteristics of the sample

The study targeted women of reproductive age in Nakuru County. Three hundred and thirty-seven (337) women were interviewed from three wards in Kuresoi North sub-county. The study found that 41.8% of women were between 21 and 30 years of age, 70% were married and 35.9% had more than two deliveries. It was also found that 39.8% of the women had achieved secondary education and 35% were self-employed. Most of the women (80.1%) had more than two children who were alive.

Table 4.2: Descriptive characteristics of the sample of women reproductive age in Kuresoi North Sub-county, Nakuru

Characteristics	Frequency n (%)
Age of respondents ($\mu= 27.1$; $\sigma= 0.852$)	
Below 20 years	15 (4.5)
21-30	141(41.8)
31-40	109 (32.3)
41-50	72 (21.4)
Marital status of respondents	
Married	236 (70)
Single	47 (13.9)
Divorced	32 (9.5)
Widowed	22 (6.5)
Highest level of education attained	
No education	46 (13.6)
Primary	48(14.2)
Secondary	133 (39.5)
Tertiary	110 (32.6)
Employment Status	
Self-employed	118 (35.0)
Casual jobs	80 (23.7)
Employed	36 (10.7)
Not working	103 (30.6)
Number of deliveries	
1-2	149 (44.2)
3-4	121(35.9)
More than four	67(19.9)
Number of living children	
None	10 (3)
One	57 (16.9)
More than one	270 (80.1)

4.3.1 Chi-square test of association between FANC uptake and women socio-economic and demographic characteristics

The study found the demographic factors significantly associated with women uptake of FANC were age ($\chi^2 = 14.459$; $df = 3$; $p = 0.0002$); marital status ($\chi^2 = 14.175$; $df = 4$; $p = 0.007$); education level ($\chi^2 = 13.076$; $df = 3$; $p = 0.004$); occupation ($\chi^2 = 8.636$; $df = 3$; $p = 0.035$); number of deliveries ($\chi^2 = 36.806$; $df = 2$; $p < 0.001$) and the number of living children ($\chi^2 = 14.92$; $df = 1$; $p < 0.001$). The summary of these findings is presented in table 4.3 .

Table 4.3: Association between FANC uptake and socio-economic and demographic characteristics among women of reproductive age in Kuresoi North Sub-county, Nakuru

		Uptake of FANC		
		Achieved	Not achieved	Significance
Age	<20	6	9	$\chi^2 = 14.459$; df = 3; $p = 0.002^a$
	21-30	42	99	
	31-40	29	80	
	41-50	6	66	
Marital status	Married	52	184	$p = 0.007^b$
	Single	16	31	
	Widowed	3	19	
	Separated	12	20	
Level of education	No education	6	40	$\chi^2 = 13.076$; df = 3; $p = 0.004^a$
	Primary	20	28	
	Secondary	36	97	
	Tertiary	21	89	
Occupation	Self-employed	20	98	$\chi^2 = 8.636$; df = 3; $p = 0.035^a$
	Casual jobs	28	52	
	Formal employed	8	28	
	Not working	27	76	
Number of deliveries	Two or less than two	29	120	$p < 0.001^b$
	Three to Four	51	70	
	More than four	3	64	
Number of living children	None	0	10	$p < 0.001^b$
	One	26	31	
	More than one	57	213	

^a p - value based Chi-square test

^b p - value based on Fischer's exact test

4.4 Perceptions towards FANC Services

The perceptions towards FANC services were measured in terms of their perceived susceptibility, perceived severity, perceived benefits and perceived barriers towards FANC. The respondents were given several 5 point Likert scale questions, with

responses ranging from 1-strongly disagree; 2-disagree; 3-neutral; 4-agree to 5-strongly agree. The results from these factors are presented below.

4.4.1 Women's perceived susceptibility to pregnancy, delivery and post-partum complications

The study found that the majority of the women did not perceive they were susceptible to pregnancy related complications (85.5%), labour and delivery complications (78.64%), or having a bad pregnancy outcome (71.8%). Approximately 57 % perceived they were susceptible to a difficult pregnancy (excessive fatigue, frequent headaches, mood swings, excessive vomiting among others) while 48 % of the women perceived they were susceptible to postpartum complications. The findings are illustrated in figure 4.3.

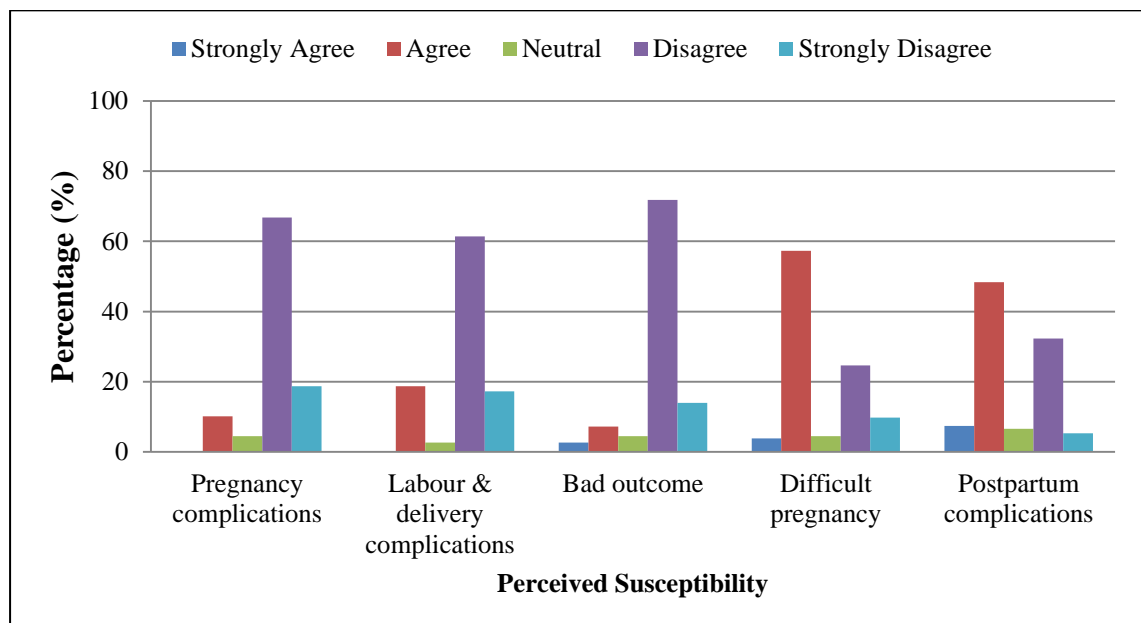


Figure 4.3: Perceived susceptibility pregnancy, delivery and post-partum complications among women of reproductive age in Kuresoi North Sub-county, Nakuru

Discussions held with the women revealed that their greatest fears were difficult pregnancies or developing postpartum complications.

“My greatest fear of getting pregnant is the possibility of developing post-delivery issues.” (28-year-old housewife said)

“Any time I get pregnant I am not able to control my tempers, always fighting with the people around me for no good reason and everything around me smells bad, I really hate that experience.” (29year –old hair dresser said)

4.4.2 Women’s perceived severity of pregnancy, delivery and post-partum complications

The study found that 70.9% of the women perceived that not receiving FANC services could result in premature labour. Sixty-one percent of the women were pessimistic their pregnancy would not reach term if they did not attend FANC. Approximately 54% of the women did not perceive that they were at risk of getting a stillbirth.

Approximately 55% of the women felt that complications they might experience during pregnancy and delivery would not be short lived, while 51% perceived that occurrence of pregnancy complications would not threaten their relationship with their partners or cause them to separate. Some women (44.2%) did not perceive that not attending FANC would result in recurrent health issues during their pregnancy period.

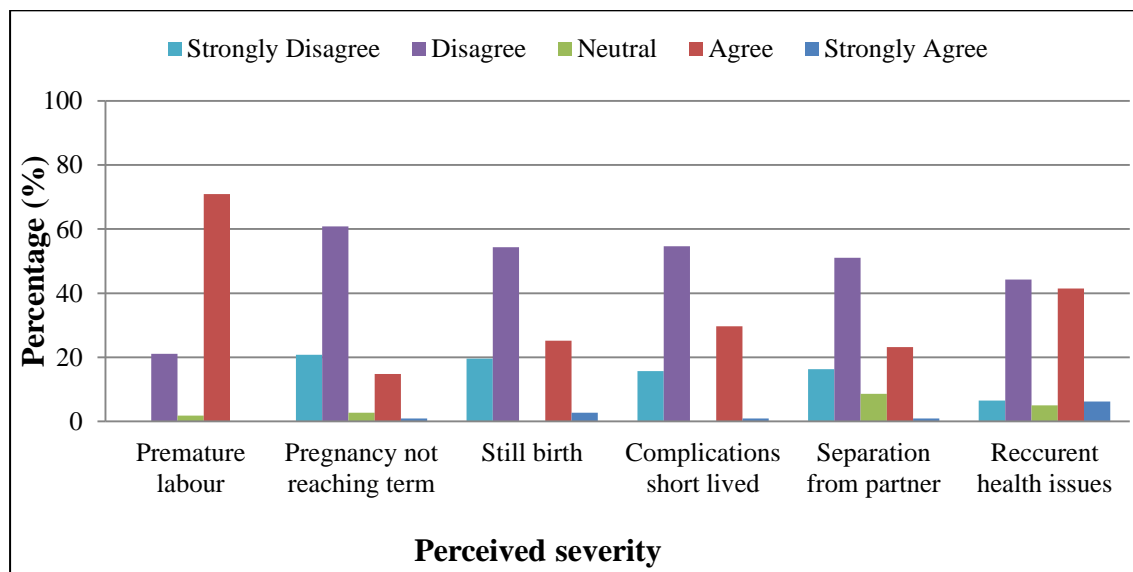


Figure 4.4: Perceived Severity of pregnancy, delivery and post-partum complications among women of reproductive age in Kuresoi North Sub-county, Nakuru

Focus group discussions with mothers revealed that some mothers were scared about the pregnancy process and the consequences of developing pregnancy, delivery and postpartum complications. Further discussions determined that they attended the clinics to detect risk conditions for better pregnancy outcomes.

“My worst fears is that the pregnancy process is uncertain and sometime it can even lead to death of either the child or the mother”. (32-year old business lady said)

“Other outcomes are also very bad, I don’t know what happened to my neighbor but since her last delivery she has difficulties controlling her bladder”. (30-year-teacher shared)

4.4.3 Women’s Perceived Benefits of FANC utilization

It was found that women’s perceived benefits of attending the clinics included feeling good or comfortable during their pregnancy period (75.4%), reduced risk of pregnancy related complications (75.4%), increased the chances of early detection of risk conditions associated with pregnancy (75.7%), overcoming fear of labor and delivery (84.3%), learning about birth preparedness plan (78%) and receiving a wide range of preventive interventions such as PMTCT, TTV immunizations, Iron and Vitamin A Supplementation, ITNs, deworming for a good pregnancy outcome (73.3%). Also, 86.4% saw it as an opportunity to learn about pregnancy progress. The results are shown in the figure 4.5.

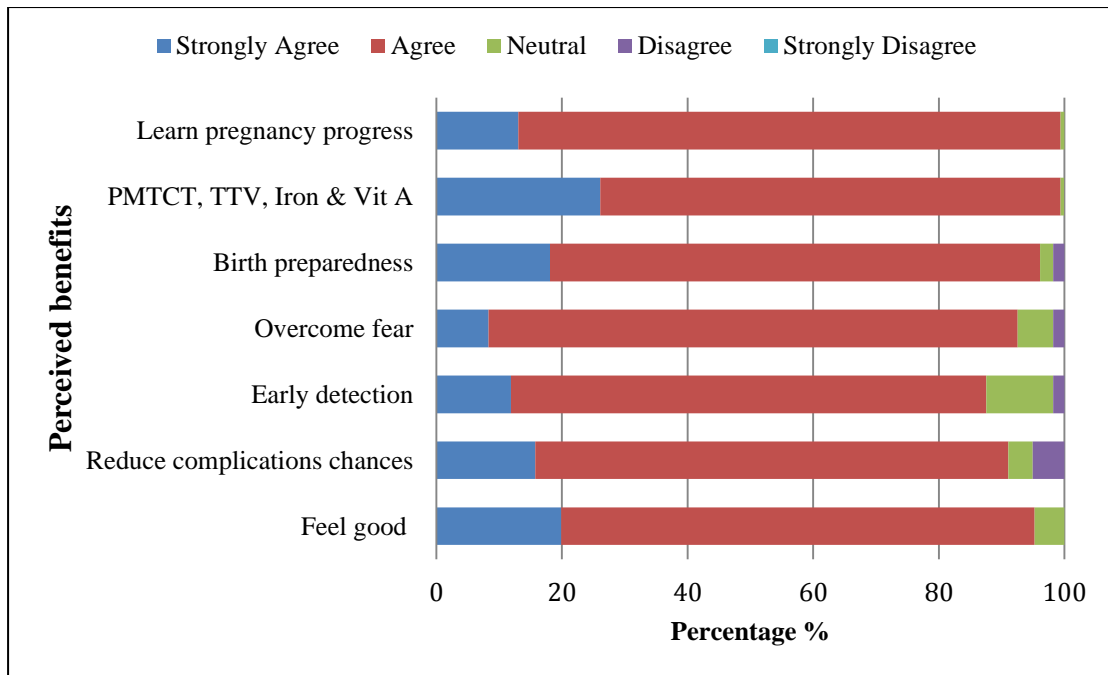


Figure 4.5: Perceived benefits of ANC attendance among women of reproductive age in Kuresoi North Sub-county, Nakuru

It was a common belief among mothers that completing the FANC visits would decrease chances of pregnancy related complications. Discussion with expectant mothers revealed that they attended all the FANC visits for regular checks to prevent any complications that might arise as a result of pregnancy. Further discussions also determined that most of the mothers attended the FANC visits so as to be educated on how to better manage the pregnancy and the challenges that comes with it. The women were also aware that failure to attend and achieve the recommended FANC could have serious health implications in the post delivery period.

“I attended the FANC clinic to regularly check my pregnancy to prevent any complications that might arise during the pregnancy.” (28-year-old housewife said)

The women agreed that if they completed the four FANC visits they would learn about individual birth preparedness and reduce their chances of delaying to seek care during labor. During the FGD, the mothers were able to list the services that they received during FANC visits.

“I had never heard about a birth plan until my last pregnancy when I attended the FANC visits, it helps me plan very well for my baby compared to my previous pregnancies that I never attended FANC”. (26 –year old business lady said)

“FANC has been beneficial to me I got to know my HIV status, got some mosquito net that protected me from malaria and some drugs to boost my blood”. (22-year old housewife)

Discussion with mothers revealed that they could not afford to miss ANC clinic visits since they were of great importance to them in checking their pregnancy progress whenever they become pregnant.

“I could not afford to avoid attending the service since it was of great importance to me during pregnancy”. (31-year-old farmer)

4.4.4 Women’s perceived barriers to FANC utilization

The perceived barriers to the utilization of FANC included lack of enough privacy (75.1%), tiring to attend the many FANC clinics (74.5%), financial constraint (60.8%), poor means of transport (60.8%), being tired (64.7%), uncomfortable being examined by male staff (62.6%), distance (58.8%), poor terrain (57.9%), dislike interacting with the doctors and nurses at the clinics (54.6%), lack of partner’s permission (53.1%), shortage of medical staff (42.1%) and long queues (36.2%). The findings are shown in the figure 4.6.

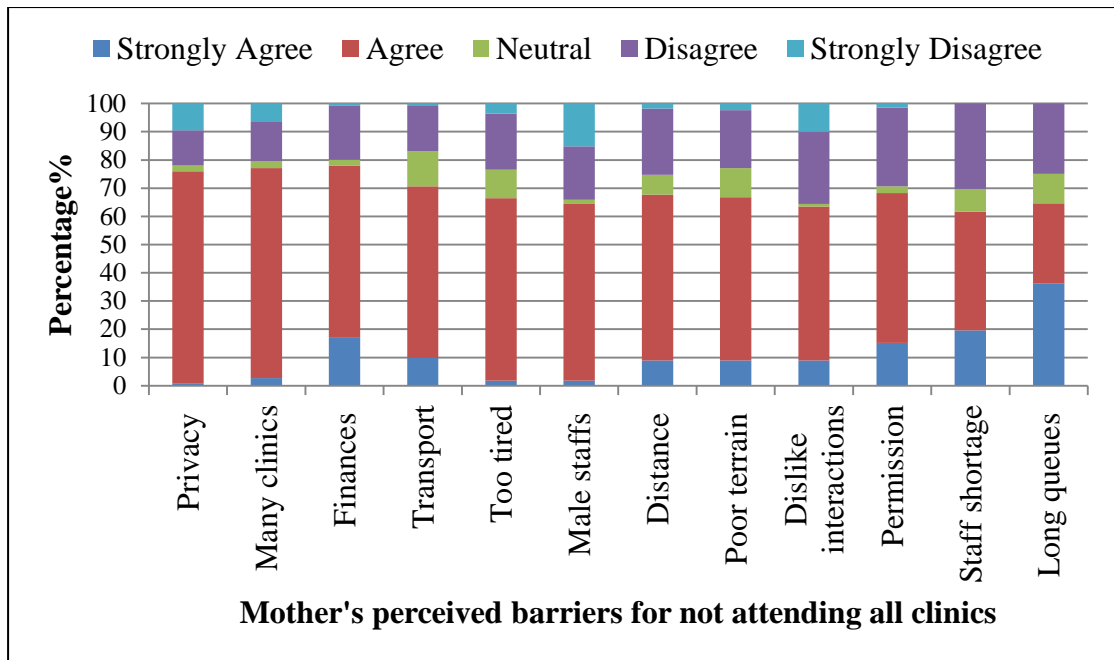


Figure 4.6: Perceived barriers to FANC utilization among women of reproductive age in Kuresoi North Sub-county, Nakuru

The focus group discussions showed that mothers were generally willing to attend the clinics though with some difficulties arising from fatigue, distance and lack of resources. In addition, the thought of interacting with the doctors and nurses at the FANC clinics bothered the mothers.

“The thought of interacting with the doctors bothers me because the antenatal care services providers are so rude that you end up going back where you have come from promising yourself not to come back due to the impression created by the doctors who are supposed to be polite to you.” (38-year-old farmer said)

Group discussions with the mothers also brought to light other barriers to accessing FANC services among mothers such as: fear of diagnosis of HIV/AIDS, Culture and beliefs, ignorant of services being offered, inadequate resources to be used in transport and language barrier.

“Nowadays the doctors say that you must be tested for HIV when you get pregnant and the imagination that it could turn positive makes me avoid those clinics for my own peace of mind”. (20-year-old receptionist said)

4.5 Women's Cues to Action to utilize FANC services

Approximately, 92% of women felt they would attend FANC for early detection of possible pregnancy problems, 84.9% to improve pregnancy outcome, 82.8% to learn how to maintain a healthy pregnancy, 70.9% to learn about right choice of diet during pregnancy and healthy behaviors, 66.2% due to their previous pregnancy experiences, 64.4% due to influence from friends and relatives, previous complications (53.4%), friend's complications (48.4%) and 30.6% to get food supplements. The results are as presented in Figure 4.7.

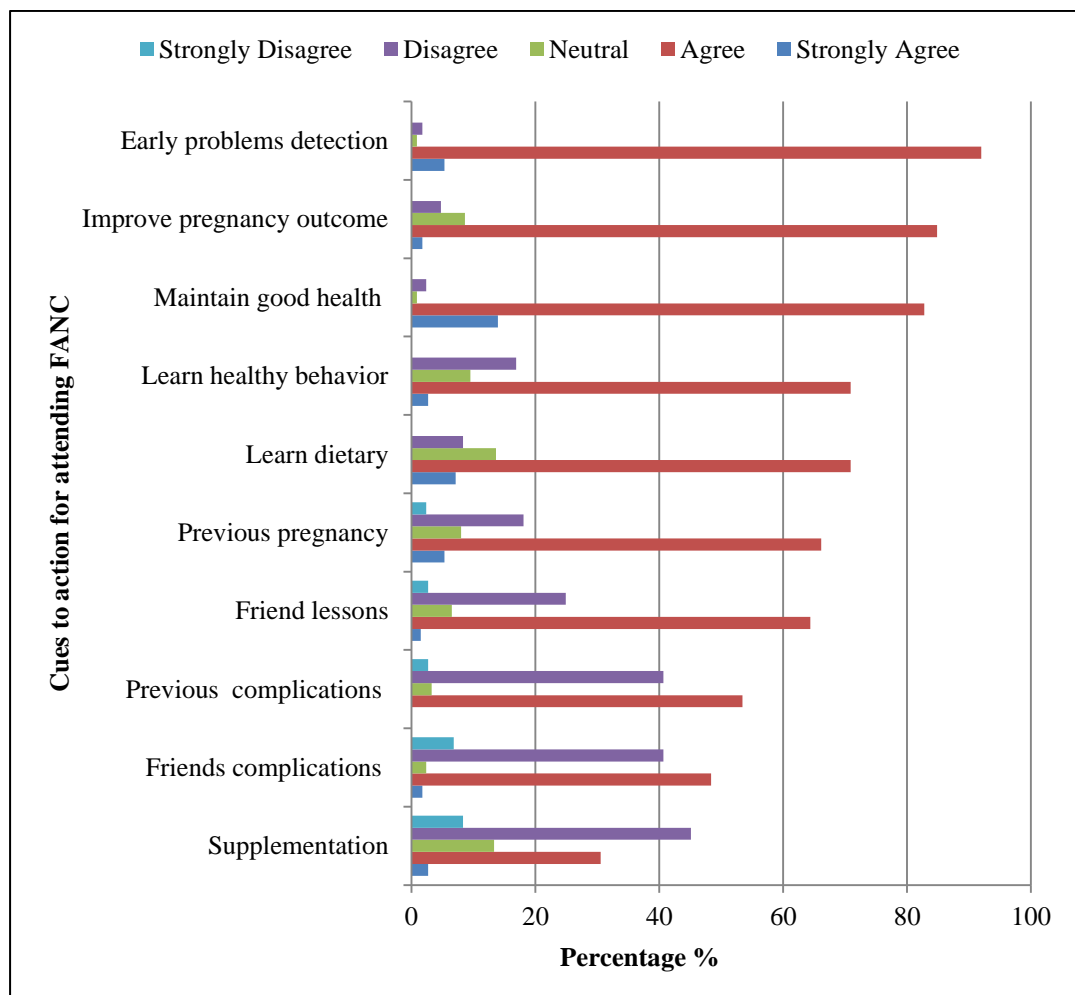


Figure 4.7: Cues to action among women of reproductive age in Kuresoi North Sub-county, Nakuru

The focus group discussions revealed that most mothers attended FANC due to their previous pregnancy experiences or influence by relatives and friends.

“I attended the FANC clinics since in my earlier pregnancy I ignored it and later lost my child due to ignorance.” (24-year-old businesswoman said)

“My friend told me of the importance of FANC, I attended to see for myself and found out it was of great help.” (25-year-old businesswoman said)

On the other hand, most of the respondents attended FANC clinics in order not to suffer pregnancy complication as close a relative or friend did. This is what one mother said,

“My greatest fear in not attending the focused antenatal care services are that if not diagnosed I could get some complications during or even after delivery. There was this pregnant neighbor of mine who did not attend the focused antenatal care services stating that they were a waste of money as the hospitals were a distance way, she thought she had a normal pregnancy but on giving birth at home with the help of midwives, she realized that she had twins, the delivery of the first child was smooth until it was time for the second child to be delivered, to their shock, the child’s legs were facing the birth canal leading to complications that forced her to be rushed to the nearest health center which was quite some distance away and upon arrival, the doctor tried his best to deliver the child which unfortunately did not happen smoothly leading to the death of the child.” (27-year-housewife reported)

During the focus group discussions, the mothers said that they were aware of the four required FANC clinics during pregnancy, they noted that one ought to make it to the focused antenatal care clinic four times as advised by the health practitioners; they further noted that visits on less than four occasions is not recommended.

4.6 Women’s Self-Efficacy

On the mother’s self-efficacy, though 64.7% of the women weren’t sure of the danger signs to check for during pregnancy, at least 55.5% of mothers were able to identify false labour and true labour pains and 59.1% of the mothers are satisfied with all the services received during FANC. Approximately, 64% of the women agreed that perceived benefits in seeking FANC outweighed the associated barriers in seeking the

care, 63.9% of women were certain about the timings and spacing of the four FANC visits, are able to make birth preparedness plan (71.8%) and confident that they could overcome associated barriers by seeking FANC services during their pregnancy (76.9%). Also, 79.8% of women were knowledgeable of the services received during FANC clinic and are aware of the four FANC visits (83.1%). The results are as presented in Figure 4.8.

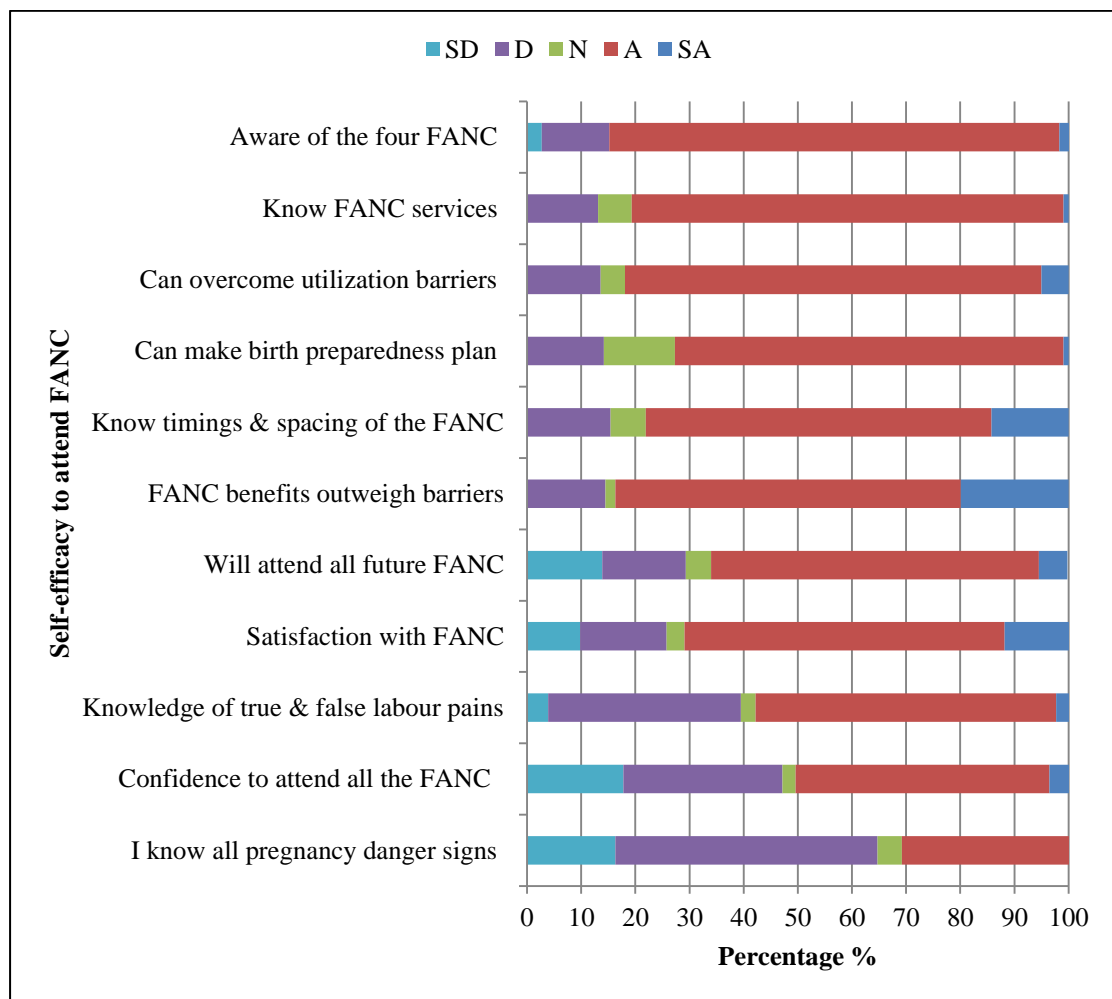


Figure 4.8: Self-efficacy among women of reproductive age in Kuresoi North Sub-county, Nakuru

Discussions with the mothers revealed that they believed that the perceived benefits in seeking FANC outweighed the associated barriers hence confident to attend all the required FANC visits. The women knew the services they needed to receive at the FANC clinic for a good pregnancy outcome, they were aware of the timing, spacing

of the FANC visits and were confident that they could overcome associated barriers by seeking FANC services during their pregnancy period. In addition, the women were aware of some of the danger signs: vaginal bleeding, severe headache and blurred vision, severe abdominal bleeding and difficulty in breathing. It was also noted from the group discussions that the mothers were aware of a lot of things concerning their pre-and post- pregnancy such as: personal hygiene, implications of STIs, exclusive breast feeding and keeping off harmful habits e.g. drug abuse, smoking.

“Our roads are terrible and the hospitals very far but I always try my best and attend pregnancy clinics because it’s worth it, I always learn something new every visit including breast feeding options, harmful habits during pregnancy, told the wellbeing of my unborn child, we are also tested for HIV, given tetanus injection and drugs to boost our blood levels among others”. (27-year-old secondary school teacher said)

Further discussions with mothers established that only a few of them were able to receive all the services offered at FANC clinics. They said the services were helpful to the mothers and they were increasingly going to the hospitals moving away from traditional medicine men and midwives. Nonetheless, further discussions revealed that even though the mothers were satisfied with the services, they requested for more qualified personnel especially for the FANC services since they also attend to regular patients in the facility. Some of the mothers also wished for the allocation of an ultrasound scanning machine in the Kuresoi facility to avoid further expenses either to Nakuru or Molo.

“At night, it is a big challenge to get medical attention as most births also do happen at dawn and at this time you will find the facility closed forcing one to get the aids of traditional doctors hence would wish for standby doctor or qualified personnel to handle mothers beyond official working hours”. (45-year-old housewife said)

4.7 Chi-square test of association between FANC uptake and women's perceptions, self-efficacy and cues to action

FANC uptake was significantly associated with perceived susceptibility (χ^2 (1) =5.044; p 0.015), perceived severity (χ^2 (1) =7.708; p 0.03), perceived barriers (p 0.001), cues to action (χ^2 (1) =15.677; p 0.003), and self-efficacy (χ^2 (1) =21.32; p 0.000). Perceived benefits were not significantly associated with FANC uptake. The results summary is presented in table 4.4.

Table 4.4: Association between perceptions, cues to action, self-efficacy levels and FANC uptake among women of reproductive age in Kuresoi North Sub-county, Nakuru

		Uptake of FANC		Significance
		Achieved	Not achieved	
Perceived susceptibility	Low	77	210	$\chi^2 = 5.044$; $df = 1$; $p = 0.015^a$
	High	6	44	
Perceived severity	Low	49	146	$\chi^2 = 7.708$; $df = 1$; $p = 0.003^a$
	High	34	108	
Cues to action	Low	19	22	$\chi^2 = 11.87$; $df = 2$; $p = 0.003^a$
	Moderate	29	103	
	High	35	129	
Self-Efficacy	Low	12	6	$\chi^2 = 21.32$; $df = 2$; $p < 0.001^a$
	Moderate	26	63	
	High	45	185	
Perceived barriers	Low	2	31	$P < 0.001^b$
	Moderate	37	65	
	High	44	158	
Perceived benefits	Moderate	3	5	$p = 0.311^b$
	High	80	249	

^a p - value based on Chi-square test

^b p - value based on Fischer's exact test

4.8 Determinants of FANC uptake among women of reproductive age in Kuresoi North Sub-county, Nakuru

Results from the logistic regression are presented in table 4.5. Variables that were not significantly associated with FANC uptake from the chi-square were omitted from the regression analysis. The likelihood of achieving FANC increases with age, as older

women (41-50 years) were 11 times more likely to achieve FANC (OR 11; CI= 4.769, 25.372; Std. error=0.426; p 0.000) compared to women below 20 years old. Similarly, those aged 21-30 (OR 2.36; CI= 1.643, 3.382; Std. error=0.184; p 0.003) and 31-40 (OR 2.76; CI= 1.804, 4.219; Std. error=0.217; p 0.000) were also more likely to achieve FANC; by 2.36 and 2.76 times respectively compared to the reference age group.

Women with one living child were 3.74 times (OR 3.74; CI= 2.790, 5.005; Std. error=0.149; p 0.009) more likely to achieve FANC compared to women with more than one living child. Women separated from their partners were 3.64 times more likely to achieve FANC (OR 3.64; CI= 1.507, 8.849; Std. error=0.459; p 0.005) compared to married women. Similarly, achievement of FANC was 1.02 times more likely for single women (OR 1.02; CI= 0.472, 2.190; Std. error=0.391; p 0.971) and 2.45 more likely for widowed women (OR 2.45; CI= .435, 9.343; Std. error=0.371; p 0.371) compared to the reference group.

The likelihood of FANC achievement was 4.9 times higher for self-employed women (OR 4.9; CI= 3.029, 7.926; Std. error=0.245; p 0.000), 1.86 times higher for casual workers (OR 1.86; CI= 1.173, 2.90; Std. error=0.234; p 0.08) and 3.5 times higher for formally employed women compared to those with no employment.

Women with tertiary level of education were 4.76 times (OR 4.76; CI=1.696,13.369; Std. error=0.527; p 0.003) more likely to achieve FANC compared to those with no education. Similarly, achievement of FANC was 2.47 times more likely for those with secondary education (OR 2.47; CI= 0.967, 6.331; Std. error=0.479; p 0.059) and 1.573 more likely for those with primary education (OR 1.573; CI= 0.590, 4.195; Std. error=0.501; p 0.365) compared to the reference group.

Perceptions of high susceptibility to pregnancy, delivery and post-partum complications increased the likelihood of achieving FANC by 7.33 times (OR 7.33; CI: 3.125, 17.208; Std. error = 0.435; p 0.000) compared to perceptions of low susceptibility. Women who perceived that pregnancy, delivery and post-partum complications would be severe were 2.32 times more likely to achieve FANC (OR 2.32; CI: 1.554, 3.473; Std error =0.205; p 0.002) compared to women in the reference category. Women with a high level of perceived barriers were 0.28 times less likely achieve FANC (OR 0.28; CI: 0.199, 0.389; Std. error = 0.017; p 0.000) compared to those with low perceived barriers. On the other hand, women with moderate levels of perceived barriers were 0.57 times less likely achieve FANC (OR 0.57; CI: .380, .852; Std. error = 0.206; p 0.006) compared to the reference category.

Having a high number of cues to action increased the likelihood of achieving FANC by 3.69 times (OR 3.69; CI: 2.537, 5.355; Std. error 0.191; p <0.05,) and having moderate number of cues to action increased the likelihood by 3.55 times (OR 3.55; CI: 2.352, 5.363, Std. error = 0.21; p <0.05) compared to the reference category. Similarly, high self-efficacy levels increased the likelihood of achieving FANC by 4.11 (OR 4.11; CI: 2.968, 5.694; Std. error = 0.166; p <0.05) and moderate levels of self-efficacy increased the likelihood by 2.42 (OR 2.42; CI: 1.534, 3.826, Std. error = 0.233, p <0.05) compared to the reference category.

Table 4.5: Multivariate logistic regression of determinants of FANC uptake among women of reproductive age in Kuresoi North Sub-county, Nakuru

Variable	OR (CI)	<i>p</i> -value	Std. Err.
Age (Ref: Below 20 years)			
21-30	2.357 (1.643, 3.382)	0.003	0.184
31-40	2.759 (1.804, 4.219)	< 0.001	0.217
41-50	11.00 (4.769, 25.372)	< 0.001	0.426
Number of living children (Ref: More than 1)			
One	3.737 (2.790, 5.005)	0.009	0.149
Marital status (Ref: Married)			
Single	1.016 (.472, 2.190)	0.974	0.391
Widowed	2.453 (.435, 9.343)	0.371	0.743
Separated	3.642 (1.507, 8.849)	0.005	0.459
Occupation (Ref: Not working)			
Self employed	4.900 (3.029, 7.926)	< 0.001	0.245
Casual	1.857 (1.173, 2.940)	0.08	0.234
Formal employment	3.500 (1.595, 7.679)	0.020	0.401
Education(Ref: No education)			
Tertiary	4.762(1.696,13.369)	0.003	0.527
Secondary	2.474(.967,6.331)	0.059	0.479
Primary	1.573(.590-4.195)	0.365	0.501
Perceived susceptibility (Ref: Low)			
High	7.33 (3.125, 17.208)	< 0.001	0.435
Perceived severity (Ref: Low)			
High	2.324 (1.554, 3.473)	0.002	0.205
Perceived barriers (Ref: Low)			
Moderate	0.569 (.380, .852)	0.006	0.206
High	0.278 (.199, .389)	< 0.001	0.17
Cues to action (Ref: Low)			
Moderate	3.552 (2.352, 5.363)	< 0.001	0.21
High	3.686 (2.537, 5.355)	< 0.001	0.191
Self-efficacy (Ref: Low)			
Moderate	2.423 (1.534, 3.826)	< 0.001	2.33
High	4.111 (2.968, 5.694)	< 0.001	0.166

CHAPTER FIVE: DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This was a cross sectional descriptive study which aimed at determining the uptake of FANC among women of reproductive age in Nakuru County. The study used both qualitative and quantitative approaches in data collection to give a better understanding of the research questions. This study found that the majority of women (73.3%) begun attending ANC in their second semester and only 24.63% of them attended the four FANC visits recommended by WHO (2004).

The likelihood of achieving FANC increased with age, having only one living child, education level, being single, widowed or separated, and having some sort of employment. In addition, women with high perceived susceptibility, high perceived severity, high number of cues to action and high self-efficacy levels were more likely to achieve FANC, while women with high level of perceived barriers were less likely achieve the same.

This chapter presents the discussion of the findings, followed by a conclusion and recommendations as per the objectives of the study.

5.2 Discussion

5.2.1 Demographic characteristics of the women associated with uptake of FANC

The study findings indicated that the likelihood of achieving FANC increasing with age. A similar finding on the association between age and utilization of antenatal services was reported by (Adeniyi and Erhabor, 2015). Similar findings were also suggested by Mbai (2015), who reported that women who started childbearing before

20 years of age had fewer antenatal visits than women who started at a later age. This could be due to the need to hide unplanned or unwanted pregnancies, especially among adolescents who are more likely to experience violence from their parents, to be rejected by their partners, expelled from school, and to be stigmatized. The fear of negative consequences of unplanned pregnancy could influence antenatal care. In addition, most of the adolescents with unplanned pregnancy may not know what to do or even the need for ANC given that ANC information is typically available for the older or married women. Younger women also tend to start ANC only after the pregnancy starts showing, especially for first pregnancies. This stems from cultural beliefs about impending misfortune when women disclose their pregnancy before it is obvious.

The above finding emphasize on the need to strengthen advocacy messages targeted toward promoting utilization of FANC among women of reproductive age despite their age as well as to provide a platform to support teenage pregnancies to enhance uptake of FANC. Through the community units and chief *barazas* advocacy messages should be targeted to encourage women experiencing pregnancy for the first time to start ANC in the first trimester, including preconception care messages for all women of reproductive age.

The study found that being married negatively influenced the uptake of FANC, as women separated from their partners, single and widowed women were more likely to achieve FANC compared to married women. A study by Banda (2013), reported that being married negatively influenced utilization of antenatal services. However, contrary findings have been reported by other authors, who reported that unmarried pregnant women are less likely to seek antenatal care services due to a lack of

economic social support from parents, guardians or spouses (Chama, 2015 and Adeniyi, 2013).

Women who are in a relationship often have to obtain permission to attend ANC, from their spouses or in-laws (Begum et.al.,2015). Indeed, this study revealed that more than half (53%) of the women required permission from their spouses to go for antenatal care, thus making significantly fewer than required number of ANC visits. Similar findings have been reported elsewhere (Sibiya et al.2018; Callixte et al; 2017; Adeniyi & Erhabor 2015). The findings demonstrate male dominance in decision-making regarding ANC attendance and highlight the major role of male involvement in the health of their spouses. Furthermore, it reinforces the need for policy makers to make deliberate efforts to enhance or motivate male involvement in the uptake of FANC services rather than being a barrier to the uptake of the same.

The study found that education level positively influenced uptake of FANC, which is similar to most published results that show that low educational status has been identified as a major barrier to the utilization of antenatal care services and that lack of education can negatively affect the women's comprehension of important information and the ability to make informed decisions and that uptake of FANC increased with the level of education (Koch *et al.*, 2013; Chuma, 2013). Women who have attained higher levels of education are in a better place to make informed decision and understand the importance of attending antenatal care services. This finding therefore reinforces the importance of education for all which is currently supported by the free education program. In Kenya, the county government should ensure that the education system is strengthened to accommodate the education demand in the county.

Employment status had a positive influence on uptake of FANC. This correlates with other studies that reported a positive relationship between women's employment status and FANC uptake (Pell et al., 2013) and the negative impact of lack of productive resources and FANC uptake (Sharif & Singh, 2012). Maternal care services are not exclusively free in Kenya. There are some indirect and hidden costs. The hidden costs stem from the inconsistent supply of some of the basic medications such as hematinic, iron folate and dewormers, which result in women being sent to buy the medication over the counter from private pharmacies. Indirect costs include transport, which was raised in the FGDs.

In addition, free maternal services can only be accessed at NHIF accredited facilities, which may not be the preferred choice for the women for various reasons such as distance and quality of care. Employed women are at an advantage because they can overcome some of the barriers like quality of care by seeking ANC services at a facility of their choice regardless of whether it is NHIF accredited or provides the free maternal services.

The provision of free maternal care has alleviated the cost barrier to accessing ANC, maternity and postnatal services through the *Linda Mama* programme. However, benefiting from the free maternity care is contingent on expectant mothers being registered in either the National Hospital Insurance Fund (NHIF) or the *Linda Mama* programme. This implies that expectant mothers who cannot afford NHIF and are not registered for *Linda Mama* services cannot access free maternal care and are required to pay cash when they seek maternal care services. Many women in rural areas who have no idea about the NHIF or *Linda Mama* programme will only turn up at hospitals when they are pregnant. For any woman to be registered with the *Linda*

Mama programme one must provide her or her guardian's national ID, which also locks out any woman who for some reason (left the ID at home, lost ID or don't have an ID) does not have a national ID at the time of visit.

The NHIF should promote and support more facilities to apply for accreditation, especially private facilities that may be more accessible to the women. The *Linda Mama* programme should also be widely advertised through sensitization campaigns, especially in rural areas, to create awareness as well as to inform them of the process and requirements for registration. Organizing *Linda Mama* registration points could go hand in hand with the campaigns to encourage and promote registration of more women. This will increase accessibility of the FANC services to all women regardless of their economic status.

The County government of Nakuru should in addition, consider improving the poor road network by regular maintenance (improving drainage to minimize stagnant water on the road that creates excessive mud making the road impassible or taking many hours on the road for short distance travels, as well as filling pot holes) to make it more user friendly for the pregnant women as well reduce the transport cost. Mobile clinics should be adopted where feasible to reach the pregnant women at the community level and thus enhance uptake of ANC services.

The local administration in collaboration with other stakeholders should consider introduction of income generating activities at the community to empower women to be financially stable, build capacity the women of financial management skills especially on how to save the money generated from their activities to enable them to cater for cost related challenges in accessing ANC. At community level advocacy

messages on birth preparedness should be enhanced through the chief *Barraza's* and other gatherings including the churches.

The study found a counter relationship between parity (number of times a woman has given birth to a fetus above gestation of 24 weeks) and achievement of FANC; an increase in parity decreased the likelihood of uptake of FANC. This concurs with other studies that found that high parity has been found in many countries to be a barrier to utilization of antenatal services (Banda 2013; Adeniyi 2013; Chama 2015). This could be because women with higher parity perceive themselves as being at low risk due to their experience from previous pregnancies and births compared to women with low parity who perceive themselves as being at high risk of developing pregnancy related complications. This misconception could also lead to poor pregnancy outcomes. These findings further suggest the importance of educating women on the complications of pregnancy regardless of parity as well as high parity being a risk factor for poor maternal and perinatal outcomes, especially with short inter-pregnancy intervals.

5.2.2 Perceptions associated with achievement of FANC

5.2.2.1 Women's perceived susceptibility associated with the uptake of FANC services

Despite the majority of women disagreeing that they are susceptible to pregnancy related complications, the study found that achievement of FANC was more likely among women who perceived they were highly susceptible to the complications. These findings supported a study by Sebaya (2012) in New Guinea, where the participants who acknowledged that there was a possibility of complications during pregnancy preferred attending the FANC to improve their pregnancy outcomes. Also, a study by Thubelihle et al. (2011) found that women preferred frequent clinic visits

to be reassured that the baby was growing well and to learn its position and to improve their pregnancy outcomes.

Theory states that the probability of seeking health interventions among people will increase proportionately to the increase in the level of perceived susceptibility and people will not change their health behaviors unless they believe that they are at risk of contracting a health problem (Sebaya, 2012). When mothers perceive that they are at risk of developing complications during pregnancy, labour and post-partum period, they have a tendency of achieving FANC. Indeed, the few who achieved FANC reported that whenever they got pregnant their greatest fear was that they could develop pregnancy, delivery or even postpartum complications which influenced them to get regular check-ups to prevent any complications that might arise.

It is interesting that while the women were aware that failure to attend the number of ANC visits recommended to achieve FANC could have serious health implications in the post delivery period (as demonstrated by the FGDs), the majority of the women did not achieve FANC. Perhaps, it is because the majority did not perceive themselves as susceptible to complications, hence did not see the need to attend the number of ANC visits to achieve FANC. This reflects a gap between knowledge of pregnancy, delivery and post-partum risks and practice in relation to uptake of FANC and highlights the influence of other factors in ANC attendance.

5.2.2.2 Women's perceived severity associated with the uptake of FANC services

Women who strongly perceived that pregnancy, delivery or post-delivery complications could be severe were more likely to achieve FANC. Similar results were reported by (Koch, 2013), where more than 80% of women with low perceived severity did not have antenatal check-ups in their first trimester. This could be

explained by the desire to decrease the consequence or seriousness of pregnancy complications and to have a good pregnancy outcome being a positive influence on women's uptake of FANC. Theory states that the probability that a person would change his/her health behavior to avoid a bad consequence depends on how serious he or she considers the consequence to be, for instance pain, handicap or death (Witte, 2013). This theory was confirmed by Cao et al. (2014) in a study, which established that any human being who believes that an action will decrease the susceptibility to a health issue or decrease its seriousness would engage in that action.

The findings imply the need for more health education to women to highlight all the unexpected outcomes that can occur during the entire pregnancy, delivery or post-natal period and ways to mitigate the consequences from the same, for which compliance to the antenatal schedule as described by WHO is key.

5.2.2.3 Women's Perceived Benefits associated with the uptake of FANC services

Interestingly the study revealed that although the women understood the benefits of attending ANC, there was no influence on achievement of FANC. Some of the perceived benefits included, reduced risk of experiencing pregnancy related complications, increased chances of early detection of risky conditions associated with pregnancy; Increased opportunity to learn about individual birth preparedness and reduced chances of delaying to seek care during labor. Women also noted that attending ANC clinics allowed them to receive a wide range of preventive interventions such as PMTCT, TTV immunizations, Iron and Vitamin A Supplementation, SP, ITNs, hookworm treatment) for a good pregnancy outcome.

These findings support those from other studies where it was reported that women attend ANC fully to access essential services such as vaccines, supplements and

malaria prophylaxis, monitoring and screening that might benefit their health and that of their babies, as well as to receive education (Banda, 2013; Sebaya, 2012). Another study reported that women believed that attending FANC was to help them secure a place of delivery at the hospital, which they believed would be facilitated by attending ANC (Mbai, 2015).

Interesting to note is that the research findings showed that the women's perceived benefits of FANC were not significantly associated with its uptake. This finding highlights a knowledge-practice gap, which could be a result of the perceived barriers reported by the women and points to the need to go beyond awareness creation about FANC by reducing other barriers it's uptake so that the pregnant women can assess the anticipated benefits.

5.2.2.4 Women's perceived barriers associated with the uptake of FANC services

Perceived barriers decrease the likelihood of FANC achievement; women with a high and moderate levels of perceived barriers were less likely to achieve FANC compared to those with lower levels of perceived barriers. The findings are in agreement with those of Banda (2013) where lack of resources to travel to services outside the community, accessibility of health services and women's perception that health care workers do not treat them respectfully were identified as barriers to achieving FANC. Indeed, lack of finances was found to be one of the barriers reported by most women in this study (60.8%). Other studies also reported the cost of attending clinics in terms of travel and lost time, embarrassment and discomfort with the idea of physical and vaginal examination by medical male practitioners, staff shortages and distance as influencing uptake of ANC services (Oon et al., 2011; Koch, 2013; Yang, 2010).

Most of the barriers mentioned by the women in this study have also been reported in other studies as seen in the preceding paragraph as barriers to ANC attendance and FANC achievement. This study has also shown that unemployment and lack of permission from spouses negatively influenced ANC attendance and FANC achievement. Although the *Linda Mama* programme reduces the financial burden in accessing maternal care services at the hospital, much more needs to be done to address other non-financial barriers like poor means of transport, poor terrain, long distances to health facilities, low male involvement in antenatal care, poor staff attitudes, long waiting times and shortage of staff in the facilities.

This also reinforces the need for the policy makers and practitioners to focus their efforts on countering perceived barriers through introduction of mobile clinics, outreach services targeting the pregnant women as well as improving the road network to make it more friendly or usable for the community, increasing health facility staffing, and finding innovative means to encourage male involvement to improve FANC uptake.

5.2.3 Cues to action associated with the uptake of FANC services

FANC achievement was more likely for women with high and moderate number of cues to action. Women's desire to reduce their chances of suffering pregnancy related complication as witnessed from their close relatives or friends, previous pregnancy complications, desire to discover pregnancy problems, to maintain good health during pregnancy, influence by friends and relatives, and quest for health education that relates to balanced diet during pregnancy are among the cues of action that prompt women fully utilize FANC services. As women tend to agree with these factors, their chances of utilizing FANC tends to improve significantly.

Earlier studies that supported these findings include Mark (2012), where it was established that cues to action that influence utilization of ANC are internal (e.g., persistent headache-hypertensive mothers' dizziness-anemic mothers) or external (e.g., advice from others, previous adverse pregnancy outcome, newspaper article, etc.). A similar study by Ayiasi *et al.*, (2014) established that women who had attended antenatal visits in their previous pregnancy thought that it was beneficial to start ANC early in pregnancy unlike those who did not have this experience and who opted for third trimester enrolment. Supporting this is also study by Richard (2011) in Uganda, whereby it was established that a quarter of the mothers who reported having lost at least one child in the years preceding the current baby sought antenatal care early enough in their recent pregnancy.

This finding could be explained by the fact that human beings are influenced by their environment in their daily interactions (Ayiasi *et al.*, 2014). Women who have interacted with other women with a positive or negative ANC experience will influence their behavior towards ANC. Similarly, women who are exposed to social media, access to television and written literature are more likely to make informed decision towards FANC uptake.

In this study the majority of the women mentioned internal cues to action (detection of possible pregnancy problems, improve pregnancy outcome, to learn how to maintain a healthy pregnancy) while external cues to action (influence from friends and relatives, friend's complications) were mentioned by less than half of the women. It is important to enhance the external cues to action, by creating awareness of the importance of antenatal care among women of reproductive ages through all the possible channels to reach women both the urban and rural settings. In addition,

awareness creation should also aim at curbing the negative influence of traditional beliefs and myths surrounding pregnancy and childbirth on uptake of FANC.

5.2.4 Self-efficacy levels associated with the uptake of FANC services

High and moderate self-efficacy levels increased the likelihood of achieving FANC. The study found out that women believed that the perceived benefits in seeking FANC outweighed the associated barriers hence were able to attend all the required FANC visits. The women were aware of the services they needed to receive at the ANC for a good pregnancy outcome, and were aware of the timing and spacing of the four FANC visits. These findings support a study by Jennifer (2014) who found that mothers had self-belief in their ability to succeed in attending all the four required ANC clinics during pregnancy to derive the benefits despite the barriers they may face.

Self-efficacy or confidence was found to be the most statistically significant concept of health belief in a study conducted among nurses in regard to the practice of Self-Breast Examination (SBE). If a nurse felt satisfied in her ability to perform SBE correctly and detect abnormalities she was more likely engage in SBE (Valorie, 2013)

Self-efficacy is something inherent within all people and it drives us to participate and excel in whatever activities we may choose, including school, work, health activities or personal development. A little confidence in our abilities can go a long way, and any hindrance in self-efficacy can have widespread and sometimes damaging effects (Jennifer, 2014). In the context of this study, the women felt confident in their ability to timely and consistently seek FANC services, and thus overcome associated barriers in seeking and utilizing FANC services. Women's understanding of the FANC

process and its benefits pushes them to be willing to overcome related barriers to achieve FANC.

This study showed that self-efficacy levels among the women were generally high, with the majority confident that they could overcome associated barriers to seeking FANC services during their pregnancy, knowledgeable of the services received during FANC clinic and aware of the four FANC visits. Furthermore, most women perceived benefits in seeking FANC outweighed the associated barriers in seeking the care, were certain about the timings and spacing of the four FANC visits and are able to make birth preparedness plan. This shows that given adequate support, these women can overcome some of the barriers to accessing ANC and achieving FANC. Supporting and encouraging them to engage in income generating activities at the community to empower women to be financially stable, providing them with information about FANC (it's importance, how to access the services), pregnancy danger signs (which were not known by more than half of the women) and birth preparedness should be enhanced through the chief *Barraza's* and other gatherings including the churches and women's groups.

5.3 Conclusions

Based on the objectives and the findings of the study the following conclusion can be made:

- i. FANC uptake is more likely for women who are not married, older than 20 years, those with secondary and tertiary levels of education, those who have some form of employment and those who have fewer living children. The alternative hypothesis that the social-demographic characteristics of women of reproductive age are associated with uptake of focused antenatal care was accepted.

- ii. Perceptions of high susceptibility to pregnancy, labor and post-natal related complications, of high severity of the consequences that could result from pregnancy, labor or post-natal complications increase the likelihood of FANC uptake. On the other hand, perceptions of moderate to high barriers to the uptake of FANC decrease its uptake. The alternative hypothesis that women's perceptions are associated with the uptake of focused antenatal care among women of reproductive age is accepted. Perceived benefits were not significantly associated with uptake of FANC. However, while most of the women perceived that they were highly susceptible to pregnancy, labor and post-natal related complications, and that the complications would be severe, FANC uptake was still found to be low. This highlights a knowledge- practice gap that needs to be addressed.
- iii. Women with moderate to high cues to action were more likely to achieve FANC. The study therefore accepts the alternative hypothesis that women's cues to action were associated with the uptake of focused antenatal care among women of reproductive age was adopted.
- iv. Women with moderate to high-levels of self-efficacy in relation to uptake of FANC were more likely to achieve FANC. The alternative hypothesis that women's self-efficacy levels were associated with the uptake of focused antenatal care among women of reproductive age is accepted.

5.4 Recommendations

5.4.1 Recommendations from the study

Based on the results, findings and conclusions this study recommends the following:

- i. To facilitate and promote FANC uptake among younger women:

- There is a need to emphasize on strengthening advocacy messages targeted toward promoting utilization of FANC among women of reproductive age despite their age as well as to provide a platform to support teenage expectant mothers to enhance their uptake of FANC.
 - Community units and chief *barazas*, should be used to convey advocacy messages that debunk cultural myths and beliefs should be targeted to encourage women experiencing pregnancy for the first time to start ANC in the first trimester, including preconception care messages for all women of reproductive age.
- ii. To address male dominance in decision-making regarding ANC attendance county officials and stakeholders should make deliberate efforts to encourage male involvement in the uptake of FANC services rather than being a barrier to the uptake of the same.
- iii. To address the financial and non-financial barriers associated with FANC uptake:
- Sensitization of women, particularly those in rural areas, should be carried out to encourage them to register with the *Linda Mama* programme to increase accessibility for the FANC services to all women regardless of their economic status.
 - County government of Nakuru should consider improving the poor road terrain to make it more user friendly for the pregnant women. ANC services should be integrated into existing mobile clinics and outreach services in order to reach the pregnant women at the community level and thus enhance uptake of ANC services and increasing health facility staffing.
- iv. To address the knowledge-practice gap between perceptions of susceptibility, severity and benefits of FANC and its uptake there is a need to go beyond

awareness creation about FANC by reducing other barriers its uptake so that the pregnant women can assess the anticipated benefits.

- v. To address the low cues to action highlighted in the study the MOH and other stakeholders should enhance the external cues to action, by creating awareness of the importance of antenatal care among women of reproductive ages through all the possible channels to reach women both the urban and rural settings. In addition, awareness creation should also aim at curbing the negative influence of traditional
- vi. To address the low self-efficacy factors highlighted in the study the community strategy and chief *barazas* should be utilized to provide targeted advocacy messages to encourage women with low perceived self- efficacy levels and support those with high self-efficacy levels, by providing social support mechanisms, encouraging women to establish income generating activities that will boost their finances, correct misleading misconceptions surrounding pregnancy and strengthen the health education and ANC promotion messages for women of reproductive age to increase FANC uptake in Nakuru county.

5.4.2 Recommendations for further Research

Understand the knowledge-practice gap between perceptions of susceptibility, severity and benefits of FANC among women of reproductive health.

REFERENCES

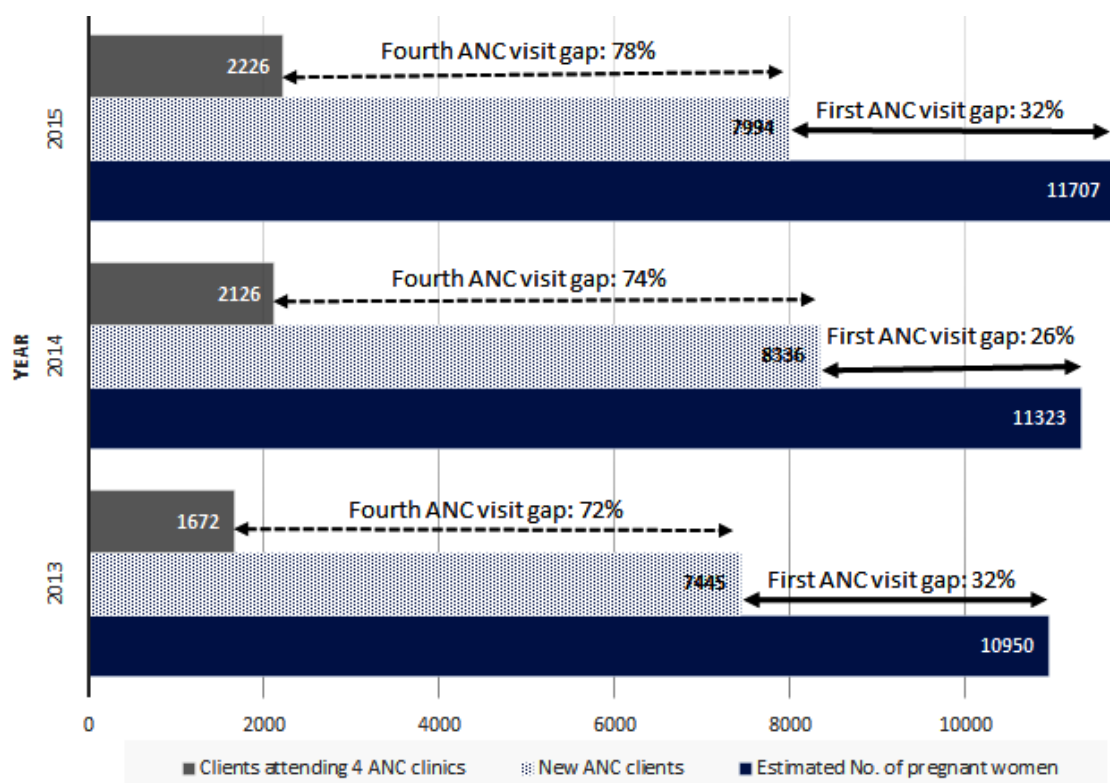
- Adeniyi. (2013). Practice, Knowledge and Perceptions of Antenatal Care Services among Pregnant Women and Nursing Mothers in Southwest Nigeria. *International Journal of Maternal and Child Health* (2013) 7-16.
- Adeniyi F. and Erhabor S. (2015). Barriers to antenatal care use in Nigeria: evidences from non-users and implications for maternal health programming.
- Agus, Yenita, & Horiuchi, S. (2012). Factors influencing the use of antenatal care in rural West Sumatra, Indonesia. *BMC pregnancy and childbirth*, 12(1), 9.
- Ayiasi, R. M., Kasasa, S., Criel, B., Orach, C. G., & Kolsteren, P. (2014). Adherence to four antenatal care visits and newborn care practices among lactating mothers in rural Uganda.
- Aarnio P, Olsson P and Chimhiri A, Kulmala T (2004). Male involvement in antenatal HIV counseling and testing: exploring men's perceptions in rural Malawi.
- Banda, C. L. (2013). *Barriers to utilization of focused antenatal care among pregnant women in Ntchisi District in Malawi*. Unpublished Masters, University of Tampere.
- Bandura, A. (1977). Self-efficacy: toward a unifying theory of behavioral change. *Psychological review*, 84(2), 191.
- Begum N, Rahman M, Nayan S, Zinia S and Khan Z. (2014). Utilization of Antenatal care Services in a selected Rural area in Bangladesh
- Bourbonnais, N. (2013). *Implementing free maternal health care in Kenya: challenges, strategies and recommendations*.
- Brown, L. K., DiClemente, R. J., & Park, T. (1992). Predictors of condom use in sexually active adolescents. *Journal of Adolescent Health*, 13(8), 651-657.
- Callixte Y, George B, Rebero S. (2017). Barriers to Antenatal Care Services Seeking in Africa.
- Cao, Z. J., Chen, Y. and Wang, S. M. 2014. Health belief model-based evaluation of school health education programme for injury prevention among high school students in the community context. *BMC Public Health*, 14, 26. doi:10.1186/1471-2458-14-26
- Chama. (2015). Utilization of focused antenatal care in Zambia: examining individual-and community-level factors using a multilevel analysis. *Health policy and planning*, 30(1), 78-87.
- Chivonivoni, C., Ehlers, V. J., & Roos, J. H. (2008). Mothers attitudes towards using services preventing mother-to-child HIV/AIDS transmission in Zimbabwe: An interview survey. *International journal of nursing studies*, 45(11), 1618-1624.
- Chuma, J., and Thomas Maina. (2013). Free Maternal Care and Removal of User Fees at Primary-Level Facilities in Kenya: Monitoring the Implementation and Impact—Baseline Report.
- Cottrell, R., & McKenzie, J. F. (2011). *Health Promotion & Education Research Methods: Using the Five Chapter Thesis/Dissertation Model*: Jones & Bartlett Publishers.
- Cousens S, Blencowe H, Stanton C, Chou D, Ahmed S, Steinhardt L, et al. (2011). National, regional, and worldwide estimates of stillbirth rates in 2009 with trends since 1995: a systematic analysis.
- Hogan, M. C., Foreman, K. J., Naghavi, M., Ahn, S. Y., Wang, M., Makela, S. M., et al. (2010). Maternal mortality for 181 countries, 1980-2008: a systematic

- analysis of progress towards Millennium Development Goal 5. *The Lancet*, 375(9726), 1609-1623.
- Ishaque S, Yakooob MY, Imdad A, Goldenberg RL, Eisele TP, & ZA, B. (2011). Effectiveness of interventions to screen and manage infections during pregnancy on reducing stillbirths: a review. *BMC Public Health*.
- Israel GD. (2009). The Evidence of Sampling Extension Program Impact. Program Evaluation and Organizational Development, IFAS, University of Florida.
- Jennifer , T. D. (2014). A case study of the self-efficacy of high school aged underrepresented minority females entering the medical pipeline. [Dissertation].
- Kenya National Bureau of Statistics, K. N. B. o. S., National AIDS Control Council, National AIDS/STD Control Programme, Ministry of Public Health and Sanitation, Kenya Medical Research Institute, National Coordinating Agency for Population and Development,. (2010). Kenya Demographic and Health Survey 2008-09.
- KNBS, M., KEMRI, NACC and NCPD. (2014). Kenya Demographic and Health Survey (2014 KDHS).
- Koch, C. M. C.-C. a. S. F. (2013). Utilization of focused antenatal care in Zambia: examining individual- and community-level factors using a multilevel analysis.
- Liu, D. (2014). Determinants of Infant Mortality in Kenya-Analysis of Kenya DHS 2003 and 2008/9.
- Lozano R, Wang H, Foreman KJ, Rajaratnam JK, Naghavi M, M. J., Dwyer-Lindgren L, et al. (2011). Progress towards millennium development goals 4 and 5 on maternal and child mortality: an updated systematic analysis. *Lancet*. 2011, 378 (9797).
- Mark. (2012). The theory of planned behavior and healthy eating. *Health psychology*, 21(2), 194.
- Mbai, C. (2015). *Factors influencing the utilization of antenatal care services among reproductive women: a case of Kibera, Nairobi county, Kenya*.
- MoH. (2007). *Focused Antenatal Care* (4th ed.).
- MoPHS/MoMS. (2012). National guidelines for quality obstetrics and perinatal care.
- Odhiambo, F., Ayisi, J. G., Blokland, I. E., Rosen, D. H., Adazu, K., Slutsker, L., et al. (2012). Use of antenatal services and delivery care among women in rural western Kenya: a community based survey. *Reproductive health*, 3(1), 2.
- Otieno, A. W. (2013, 28 Sep 2013). Kenya's other great catastrophe: women and infants dying in childbirth. *The guardian*. Retrieved 19 October 2014, from <http://www.theguardian.com/profile/aggrey-willis-otieno>
- Oon, S.W., R. Shuib, S.H. Ali, N.H.N. Hussain, J. Shaaban and H.M. Yusoff, 2011. Factors affecting health seeking behaviour among kelantanese women on pap smear screening
- Pell, C., Meãaca, A., Were, F., Afrah, N. A., Chatio, S., Manda-Taylor, L., et al. (2013). Factors affecting antenatal care attendance: results from qualitative studies in Ghana, Kenya and Malawi. *PloS one*, 8(1), e53747.
- Priscilla, K.N.(2008). Determinants of utilization of hospital delivery among post-natal mothers in Thika and Kangundo hospitals, Kenya
- Redding. (2013). The Transtheoretical model and stage of change. *Glanz, K, Rimer, BK and Lewis, FM (2002) Health Behavior and Health Education: Theory, Research, and Practice (3rd edn), Jossey-Bass, San Francisco*.

- Richard, S. K., Bart C, Christopher G, Orach P, Kolsteren P. (2011). Adherence to four antenatal care visits and newborn care practices among lactating mothers in rural Uganda.
- Rosenstock, I. M. (1974). Historical origins of the health belief model.
- Say, L., Chou, D., Gemmill, A., TunÅšalp, Å. z., Moller, A.-B., Daniels, J., et al. (2014). Global causes of maternal death: a WHO systematic analysis. *The Lancet Global Health*, 2(6), e323-e333.
- Sebaya, H. P. K., Sue Gillieatt and Michael P. Alpers,Gail (2012). Antenatal care in Goroka: issues and perceptions. *Papua New Guinea Medical Journal*, Volume 47, No 3-4, Sep-Dec 2012.
- Sharif and Singh (2012). determinants of maternal health services in the rural India.
- Simkhada, B,E. R. Van Teijlingen, M. Porter, and P. Simkhada, "Factors affecting the utilization of antenatal care in developing countries: systematic review of the literature," *Journal of Advanced Nursing*, vol. 61, no. 3, pp. 244–260, 2008.
- Sibiya M.Thembelihle S,Patience N and Thandeka J.b (2018).Access and utilisation of antenatal care services in a rural community of eThekwini district in KwaZulu-Natal
- Teate, A., Leap, N., Rising, S. S., & Homer, C. S. E. (2011). Women's experiences of group antenatal care in Australiaâ€”the CenteringPregnancy Pilot Study. *Midwifery*, 27(2), 138-145.
- Toure, K., Sankore, R., Kuruvilla, S., Scolaro, E., Bustreo, F., & Osotimehin, B. (2012). Positioning women's and children's health in African union policy-making: a policy analysis. *Globalization and Health*, 8.
- UNFPA, U. N. P. F. K. C. o. (2013). Kenya Population Situation Analysis.
- UNICEF, (2008) Progress for Children, A World Fit for Children Statistical Review, 2007, New York, December 2007.
- UNICEF, (2015) Annual report Kenya.
- Valorie, L. H. (2013). The Health Belief Model and Self Breast Examination in Nurses. [Thesis].
- WHO. (2010). *World health statistics 2010*: World Health Organization.
- WHO. (2014). The state of the World's midwifery report.
- WHO, & UNFPA , I. c. o. m. (2014). The state of the World's midwifery.
- WHO, UNICEF, UNFPA, The World Bank and the United Nations Population Division: Trends in maternal mortality: 1990 to 2015
- The Inter-agency Group for Child Mortality Estimation (UN IGME). UNICEF, WHO, The World Bank, United Nations Population Division. New York, USA, UNICEF, 2015.Levels and Trends in Child Mortality. Report 2015.
- Witte K. (2013). Putting the fear back into fear appeals: The extended parallel process model. *Communication Monographs*
- Yang ye. (2010). Factors affecting the utilization of antenatal care services among women in Kham District, Xiengkhouang Province, LaoPDR.

APPENDIXES

Appendix 1: Kuresoi Sub-County uptake of FANC 2013-2015



Appendix 2: Key differences between traditional and focused antenatal care

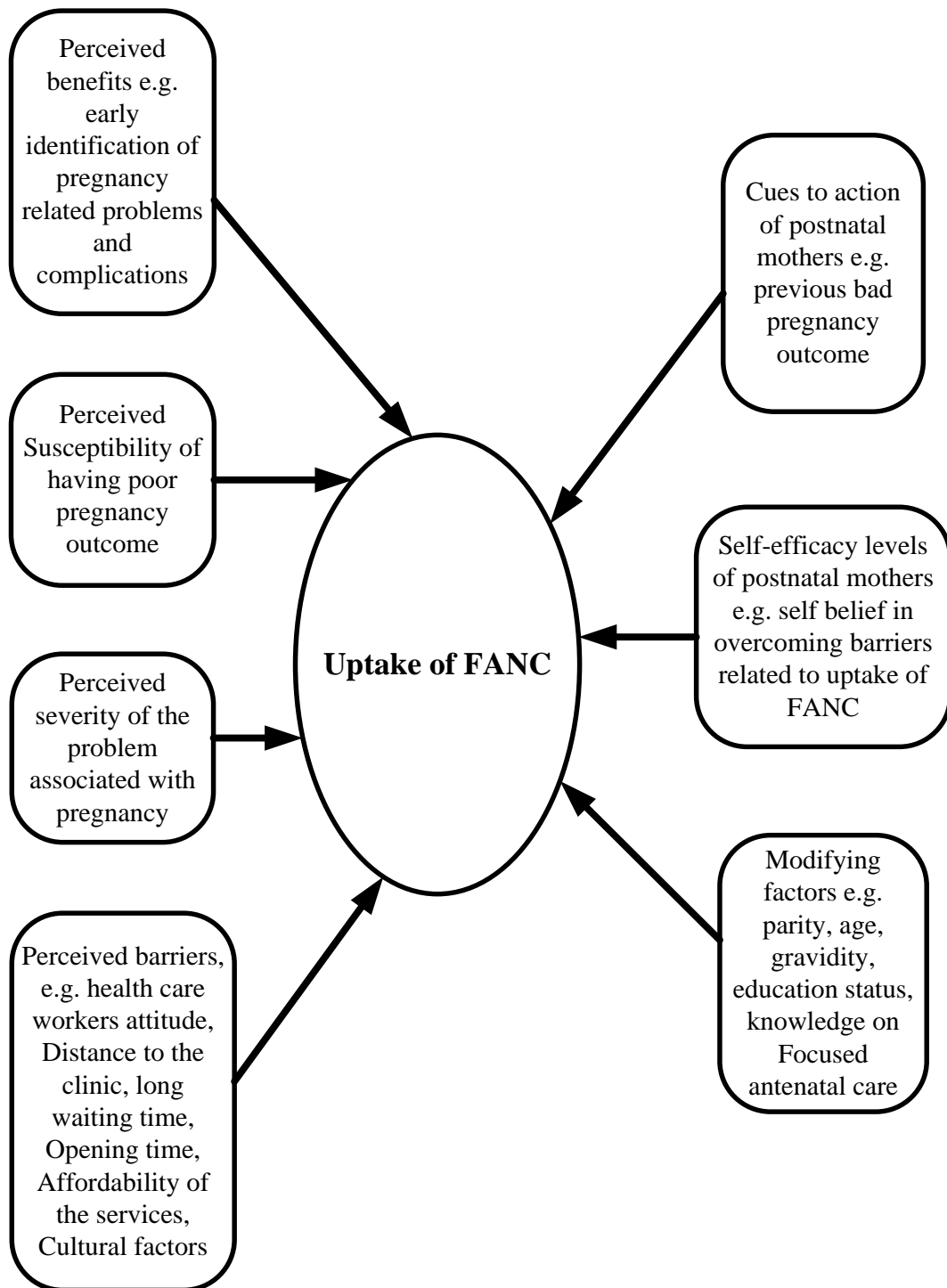
Characteristics	Traditional antenatal care	Focused antenatal care
Number of visits	16–18 regardless of risk status	4 main visits except for high risk pregnancies
Style	Vertical: only pregnancy issues are addressed by health providers	Integrated with PMTCT of HIV, counselling on danger symptoms, risk of substance use, HIV testing, malaria prevention, nutrition, vaccination, etc.
Assumption	More frequent visits for all and categorizing into high/low risk helps to detect problems. Assumes that the more the number of visits, the better the outcomes	Assumes all pregnancies are potentially 'at risk'. Targeted and individualized visits help to detect problems
Use of risk indicators	Relies on routine risk indicators, such as maternal height <150 cm, weight <50 kg, leg oedema, malpresentations before 36 weeks, etc.	Does not rely on routine risk indicators. Assumes that risks to the mother and fetus will be identified in due course

Prepares the family	To be solely dependent on health service providers	Shared responsibility for complication readiness and birth preparedness
Communication	One-way communication (health education) with pregnant women only	Two-way communication (counselling) with pregnant women and their husbands
Cost and time	Incurs much cost and time to the pregnant women and health service providers, because this approach is not selective	Less costly and more time efficient. Since majority of pregnancies progress smoothly, very few need frequent visits and referral
Implication	Opens room for ignorance by the health service provider and by the family in those not labelled 'at risk', and makes the family unaware and reluctant when complications occur	Alerts health service providers and family in all pregnancies for potential complications which may occur at any time

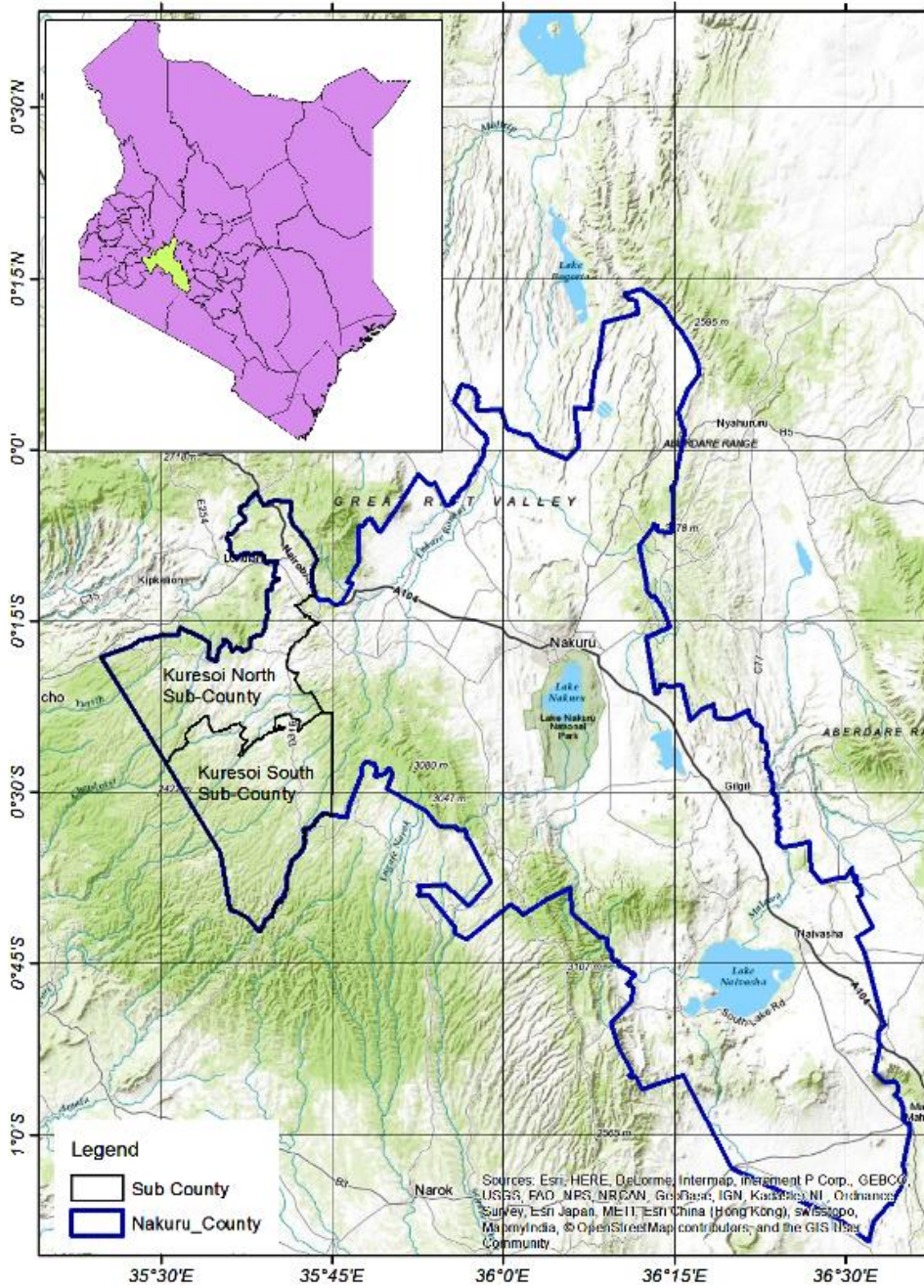
Appendix 3: Focused antenatal care (FANC) model outlined in WHO clinical guidelines, World Health Organization (2004)

First Visit (<16 weeks)	Second Visit (16-28 weeks)	Third Visit (28-32 weeks)	Fourth Visit (32-40 weeks)
5. Confirm pregnancy and expected date of delivery, classify women for basic ANC (four visits) or more specialized care.	10. Assess maternal and fetal well-being.	15. Assess maternal and fetal well-being.	20. Assess maternal and fetal well-being.
6. Screen, treat and give preventive measures such as iron and folate supplements, and sulfadoxine pyrimethamine in malaria endemic zones.	11. Exclude pregnancy induced hypertension and anemia.	16. Exclude pregnancy induced hypertension, anemia and multiple pregnancies.	21. Exclude pregnancy induced hypertension, anemia, multiple pregnancy and malpresentation
7. Provision of PMTCT services.	12. Give preventive measures such as iron supplements, tetanus toxoid vaccine (TTV) as per the TT schedule	17. Give preventive measures such as iron and second TTV administration if need be.	22. Give preventive measures such as iron supplements.
8. Develop a birth and	13. Review and modify birth and emergency plan.	18. Review and modify birth and emergency plan.	23. Review and modify birth and emergency plan.
	14. Continue advising and counseling.	19. Continue advising and counseling	24. Repeat advice given from previous visits.

emergency plan. 9. Advice and counsel on reproductive health, breastfeeding, tobacco and alcohol use.			
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Appendix 4: The Health Belief Model modified from Rosenstock 1974.

Appendix 5: Maps showing the location of the study area
 (Source: Google tracks 4 Africa)



Appendix 8: Budget

No	Item	Quantity	Cost	Total
1	Typing proposal	50 pages	20.00	1,000.00
2	Printing proposal- 1st Draft	30 pages	20.00	600.00
3	Printing proposal- 2nd Draft	50 pages	20.00	1,000.00
4	Printing proposal- Final Draft	480 pages	20.00	9,600.00
5	Binding proposal	9 pieces	100.00	900.00
6	Photocopying questionnaires	660 pages	5.00	3,330.00
7	Folders	5 pieces	200.00	1,000.00
8	Notebooks	6 pieces	100.00	600.00
9	HB pencils	10 pieces	20.00	200.00
10	Sharpeners	10 pieces	20.00	200.00
11	Erasers	10 pieces	10.00	100.00
12	Ball pens	10 pieces	20.00	200.00
13	Snacks for FGDs	4 Groups (15 packs)	2,500.00	10,000.00
14	Research assistant allowance (5 Days	5 persons	1,000.00	25,000.00
15	Recorders (Hiring for 3 days)	2 pieces	1,000.00	6,000.00
16	Data analysis		30,000.00	30,000.00
17	Printing thesis	5 pieces	1,000.00	5,000.00
18	Binding report	5 pieces	200.00	1,000.00
19	Institution remission		5,000.00	5,000.00
Total				100,730.00

Appendix 9: Informed consent

My name is Catherine Muthingu Munguti. I am a Masters student from Kenyatta University. I am conducting a study on “Uptake of Focused Antenatal Care services among women of reproductive age in Nakuru County, Kenya” The information will be used by the Ministry of Health to improve uptake of focused antenatal services among women of reproductive age in Nakuru county as well as other counties in Kenya.

Procedures to be followed

Participation in this study will require that I ask you some questions. I will record the information from you in a questionnaire/ tape recorder/notes. The interview will take approximately half an hour.

Participation in this study is voluntarily. This means that you are free to refuse to participate, to refuse to respond to any questions and you may stop an interview at any time, without any negative repercussions. You may ask questions related to the study at any time.

Discomforts and Risks

Some of the questions you will be asked are on intimate subject and may make you uncomfortable. If this happens, you may refuse to answer these questions if you so choose. You may also stop the interview at any time. I would also like to assure you that since your anonymity will be preserved the information you provide cannot be linked to you.

Benefits

If you participate in this study you will help us to learn how to improve the uptake of Focused Antenatal Care services in Kenya that can improve the health of women and reduce the risk of bad pregnancy outcomes.

Reward

If you agree to participate in this study, lunch will be provided (for those participating in focused group discussions).

Confidentiality and Anonymity

The interviews will be conducted in private sitting at household level. Your name will not be recorded on the questionnaire and will not appear on any of the results reports. The information you provide will be kept in a locked cabinet for safe keeping, with only the research team having access. Everything will be kept private.

Contact Information

If you have any questions you may contact any of the following:

- 1. Dr. Justus Osero on 0724869330 2.Dr. Eunice Chomi on 0713917511
- 3. The Kenyatta University Ethical Review Committee Secretariat on chairman.kuerc@ku.ac.ke, secretary.kuerc@ku.ac.ke, ercku2008@gmail.com

Participant’s statement

The above information regarding my participation in the study is clear to me. I have been given a chance to ask questions and my questions have been answered to my satisfaction. My participation in this study is entirely voluntary. I understand that my records will be kept private and that I can leave the study at any time.

Name of Participant.....

Signature or Thumbprint

Date

Investigators statement

I, the undersigned, have explained to the volunteer in a language she understands, the procedures to be followed in the study and the risks and benefits involved

Name of Interviewer.....

Signature or Thumbprint

Date

Appendix 10: Informed consent – Kiswahili Version

Jina langu ni Catherine Muthingu Munguti. Mimi ni mwanafunzi kutoka Chuo Kikuu cha Kenyatta. Nafanya utafiti juu ya " Uptake of Focused Antenatal Care services among women of reproductive age in Nakuru County, Kenya" Matokeo ya utafiti utatumika na Wizara ya Afya kuboresha matumizi ya huduma za kliniki miongoni mwa wanawake wenye umri wa kuzaa katika Kata ya Nakuru na pia wilaya nyingine nchini Kenya.

Taratibu za kufuatwa

Kushiriki katika utafiti huu itahitaji nikuulize baadhi ya maswali. Nitayaandika habari kutoka kwako/kwenu katika dodoso / kinasa sauti / maelezo andishi. Mahojiano itachukua takriban nusu saa. Kushiriki katika utafiti huu ni kwa hiari yako. Hii ina maana kwamba una huru kukataa kushiriki, kukataa kujibu maswali yoyote na unaweza kukatiza mahojiano wakati wowote, bila madhara yoyote hasi. Unaweza kuuliza maswali kuhusiana na utafiti wakati wowote.

Tahadhari

Baadhi ya maswali utaulizwa ni juu ya hisia binafsina inaweza kufanya uhisi vibaya. Hali kama hi ikitokea, unaweza kukataa kujibu maswali iwapo utaonelea ni vyema. Unaweza pia kukomesha mahojiano wakati wowote. Ningependa pia kukuhakikishia kuwa jina lako halitatajwa popote na kitambulisho chako kuhifadhiwa vyema.

Faida

Ukishiriki katika utafiti utatuwezesha kujua jinsi ya kuboresha utumizi za huduma za kabla ya kujifungua nchini Kenya ambayo inaweza kuboresha afya ya wanawake na kupunguza hatari na matokeo mabaya ya mimba.

Zawadi

Kama utakubali kushiriki katika utafiti huu, chakula cha mchana zitatolewa (kwa wale wanaoshiriki katika majadiliano ya vikundi).

Faragha na kutojulikana

Mahojiano itafanyika katika kikao binafsi katika kaya. Jina lako si halitandikwa katika dodoso na haitaonekana kwenye ripoti yoyote. Majibu yako yatawekwa katika kabati inayofungwa kwa ajili ya kulindwa, timu ya utafiti pekee ndiyo itaweka kuziona. Kila kitu yatawekwa kwa siri.

Maelezo ya kuwasiliana

Kama una maswali yoyote unaweza kuwasiliana na yoyote ya yafuatayo:

1. Dr. Justus Osero on 0724869330 2. Dr. Eunice Chomi on 0713917511

3. The Kenyatta University Ethical Review Committee Secretariat on
chairman.kuerc@ku.ac.ke, secretary.kuerc@ku.ac.ke, ercku2008@gmail.com

Kauli mshiriki

Habari za hapo juu kuhusu ushiriki wangu katika utafiti huu ni wazi kwangu. Nimepewa nafasi ya kuuliza maswali na na kupata jawabu zinazoniridhisha. Ushiriki wangu katika utafiti huu ni kwa hiari kabisa. Naelewa kwamba rekodi yangu yatawekwa kwa siri na kwamba naweza kuondoka utafiti wakati wowote.

Jina la Mshiriki

Tia Sahihi

Terehe

Kauli ya Wachunguzi

Mimi aliyetia, nimemwelezea mshiriki katika utafiti huu katika lugha inayoeleweka kwake, taratibu za kufuatwa katika utafiti na hatari na faida ya kushiriki.

Tia Sahihi

Terehe

Appendix 11: Questionnaire**UPTAKE OF FOCUSED ANTENATAL CARE SERVICES AMONG WOMEN OF REPRODUCTIVE AGE IN NAKURUCOUNTY**

Questionnaire No.:

Date:

Village:

Name of interviewer:

INSTRUCTIONS

- (a) Explain the purpose of the interview to the mother,
- (b) Ask for consent before proceeding with the interview
- (c) Make sure all questions are answered
- (d) Tick as appropriate

PART A: RESPONDENTS PERSONAL CHARACTERISTICS

1. How old are you?

- (a) 11-20
- (b) 21-30
- (c) 31-40
- (d) 41-50

2. What is your marital status?

- (a) Married
- (b) Single
- (c) Divorced
- (d) Widowed
- (e) Separated

3. What is your religion or denomination?

- (a) Christian
- (b) Muslim
- (c) No religion
- (d) Others (Specify).....

4. Have you ever attended school?

- (a) Yes
- (b) No

5. If yes, what is your highest level of education?

- (a) Primary
- (b) Secondary
- (d) Tertiary

6. What do you do for a living?

- (a) self-employed
- (b) Employed
- (c) Casual jobs
- (d) Not working

7. How many deliveries have you ever had?

- (a) None
- (b) One
- (c) Two
- (d) Three
- (e) Four

(f) More than four

8. How many children are alive?

(a) None

(b) One

(c) Two

(d) Three

(e) Four

(f) More than four

9. Which month of pregnancy did you start attending clinic for antenatal care?

(a) 0-3 months

(b) 4-6 months

(c) 7-9 month

10. Which months of the pregnancy did you attend antenatal care? (Allow multiple answers)

(a) 0 – 4 months (0-16 Weeks)

(b) >4 – 7 months (17-28 Weeks)

(c) >7 – 8 months (29-32weeks)

(d) > 8 months (> 33 weeks)

(d) Don't Know

PART B: QUESTIONS ON MOTHER'S PERCEPTION TOWARDS FANC.

The following questions are related to your experience and practice in relation to uptake of FANC services. There no right or wrong answers and you do not have to have practiced FANC to complete the survey. Please tick the number that best describes your feelings about each statement.

1=Strongly Disagree (SD), 2=Disagree (D), 3=Neutral (N), 4=Agree (A), 5=Strongly Agree (SA)

a) Questions on perceived susceptibility		1	2	3	4	5
11	It is extremely likely I will get pregnancy related complications					
12	I fear I will have a difficult pregnancy period.					
13	There is a good possibility I will get complications related to delivery and postpartum period					
14	My chances of getting pregnancy related complications are great					
15	I am more likely than the average woman to get bad pregnancy outcome.					
16	Even if I do not receive FANC services, I believe that I am too healthy to suffer from any pregnancy, delivery or post-delivery related complications.					
17	If I do not receive the FANC services, I believe that I am at risk for developing pregnancy, delivery or post-delivery complications.					
b) Questions on perceived Severity		1	2	3	4	5
18	Problems I would experience with pregnancy and delivery would last a long time.					
19	Pregnancy complications would threaten the relationship with my partner.					
20	Pregnancy related complications can lead to permanent changes in life.					
21	If I got pregnant, the pregnancy would not last to term					
22	If I got pregnant I am scared my baby would not survive the pressure that comes with labour and delivery.					
23	If I got pregnancy related complications, I fear I won't survive it.					
24	If I got pregnant I fear my baby will be born prematurely.					
c) Questions on perceived benefits		1	2	3	4	5
25	When I attend FANC clinics I feel good about myself.					
26	Attending my FANC clinics allows me to learn on the progress of my pregnancy.					
27	When I attend my FANC visits timely I don't worry much about my pregnancy and its' outcome.					
28	If I complete my FANC visits I will decrease my chances of pregnancy related complications.					
29	If I complete my FANC visits I will learn on individual birth preparedness and reduce my chances of delaying to seek care during labour.					

30	If I complete my FANC visits it will help me to receive a wide range of services (preventive interventions such as PMTCT, TTV immunizations, Iron and Vitamin A Supplementation, SP, ITNs, hookworm treatment) for a good pregnancy outcome.					
31	If I attend FANC clinic I increase my chances in early detection of risk conditions associated with pregnancy					
d) Questions on perceived barriers.		1	2	3	4	5
32	I find it difficult to attend FANC clinics					
33	The thought of interacting with the doctors and nurses at the FANC clinic bothers me.					
34	The long distance to the health facility during pregnancy makes it difficult for me to access FANC services					
35	The poor terrain makes it uncomfortable to travel to the FANC clinic.					
36	Being examined by male staffs at the FANC clinic is embarrassing to me					
37	It is very tiring to attend all the FANC visits.					
38	It is necessary for me to ask for permission before attending the FANC clinic					
39	Means of Transport is a problem when it comes to accessing FANC services.					
40	Finances are a big problem when seeking FANC services.					
41	I don't have enough privacy in the FANC clinic					
42	The very long queue at the FANC clinic makes me very uncomfortable.					
43	Shortage of staffs at the FANC clinic makes me to skip some of the clinics.					
PART C: QUESTIONS ON MOTHERS CUES TO ACTION TOWARDS UPTAKE OF FANC						
		1	2	3	4	5
44	I want to discover pregnancy problems early					
45	Maintaining good health during pregnancy is extremely important to me					
46	I attend FANC so s to gather new information for my health during pregnancy					
47	I feel it is important to carry out activities which will improve my health and pregnancy outcome during pregnancy.					
48	I attend FANC clinic to learn on the choice of diet during pregnancy					
49	I learnt about the benefits of regular health check-ups during my pregnancy period from my previous					

	pregnancy.					
50	I learnt about the importance of (IFAS) Iron Folic Acid Supplementation for a health pregnancy through the media					
51	I started FANC clinics because I was told it's important by a friend or relative.					
52	Due to my previous pregnancy complications I ensured that I attended FANC in my recent pregnancy.					
53	I attended FANC clinics not suffer pregnancy complication as my close relative or friend did.					
PART D: QUESTIONS ON MOTHERS SELF-EFFICACY LEVELS TOWARDS UPTAKE OF FANC						
		1	2	3	4	5
54	I am aware of the four required FANC clinics during pregnancy					
55	I am confident that I can attend all the required FANC visits					
56	In my future pregnancies I will attend all the FANC visit					
57	I am sure of the danger signs to watch during pregnancy					
58	I am able to prepare my birth preparedness plan by myself.					
59	I am sure of the services that I need to receive at the FANC clinic for a health pregnancy and good pregnancy outcome.					
60	I am certain about the timings and spacing of the FANC visits					
61	I am confident that I can overcome associated barriers while seeking FANC services during my pregnancy.					
62	The perceived benefits in seeking FANC outweigh the associated barriers in seeking the care.					
63	I am able to identify false labour and true labour pains.					
64	From the services in table four (attached) I received all the services by the end of the antenatal period.					
65	From all the services received above, I was very satisfied.					

Appendix 12: Questionnaire-Kiswahili Version**MATUMIZI YA HUDUMA YA KLINIKI MIONGONI MWA WANAWAKE
WANAOJIFUNGUA NAKURUCOUNTY**

Dodoso:.....

No:.....

Tarehe:.....

Kijiji:.....

Jina la mhoji:.....

MAELEKEZO (A) Eleza madhumuni ya mahojiano na mama, (B) Omba ruhusa kabla ya kuendelea mahojiano (C) Kuhakikisha maswali yote ni akajibu (D) Jibu ifaavyo**SEHEMU A: MAELEZO KUHUSU WAHOJIWA BINAFSI**

1. Una umri gani?

(a) 11-20 (c) 31-40 (B) 21-30 (d) 41-50

2. Nini hali yako ya ndoa?

(a) Ndoa (c) Talaka (e) Kuachane/kutengana (b) Hajawai olewa (d) Mjane

3. Dini yako au dhehebu ni nini?

(a) Mkristo (c) Mkafiri (B) Waislamu (d) Wengine (Taja)

4. Umewahi kuhudhuria shule?

(a) Ndiyo (b) La/Hapana

5. Kama ndiyo, ni nini ngazi yako juu cha elimu?

(a) Msingi (b) Sekondari (d) Chuo

6. Nini kufanya kwa ajili ya kuendesha maisha?

(a) Ajiara ya binafsi (c) Kawaida kazi (b) Walioajiriwa (d) Hana ajira

7. Umewai kujifungua mara ngapi maishani?

(a) Hakuna (b) Mara moja (d) Mara Tatu (c) Mara mbili (e) Mara Nne (f) Zaidi ya nne

8. Watoto wangapi hai?

(a) Hakuna (b) mmoja (c) Wawili (d) Watatu (E) Wamne (f) Zaidi ya wanne

9. Ni mwezi gani wa ujauzito ulipoanza hudumaza kliniki

(a) Miezi 0-3 (b) Miezi 4-6 months (c) Miezi 7-9 month

10. Ni mwezi gani wa ujauzito amabao ulianza huduma za kliniki?

(A) Miezi 0 - 3 (0-12 Weeks) (b) Miezi 4 - 6 (13-24 Weeks) (C) Miezi 7 - 9 (25-36weeks) (d) Sijui

KIFUNGU CHA B: MASWALI JUU YA MTAZAMO WAMAMA KUELEKEA FANC.

Maswali yafuatayo ni kuhusiana na uzoefu wako na mazoezi katika mahusiano na wanaohitaji uduma za FANC. Hakuna majibu sahihi au isiyo sahihi na si lazima uwe umetumia huduma za FANC ndio uweze kuhudhuria utafiti huu. Tafadhali weka alama kwa jawabu/chaguo bora inafafanua hisia zako juu ya kila kauli. 1 = Sikubali kabisa (SD), 2 = Sikubali (D), 3 = Sina msizamo/uamuzi (N), 4 = Nakubali (A), 5 = Nakubali Kabias(SA)

A	Perceived susceptibility	SD	D	N	A	SA
		1	2	3	4	5
11	Ni uwezekano sana mimi kupata matatizo yanayohusiana na ujauzito					
12	Mimi uhofia ujauzito ngumu/iliyo na matatizo					
13	Kuna uwezekano mkubwa mimi kupata matatizo yanayotokana na ujauzito, kujifungua au kipindi baada ya kujifungua					
14	Nafasi yangu ya kupata mimba matatizo yanayohusiana na ni kubwa					
15	Nina nafasi zaidi kuliko wanawake wastani/wa kawaida kupata matokeo mbaya ya ujauzito					
16	Mawazo ya mimba hunitatanisha sana					
17	Naogopa sana maumivu ya kuelekea kujifungua and kujifungua yenyewe					
B	Perceived Severity	SD	D	N	A	SA
		1	2	3	4	5
18	Matatizo ya ujauzito na kujifungua huwa kwa muda mrefu.					
19	Matatizo ya mimba kutishia uhusiano na mpenzi wangu					
20	Kama nitapata mimba, maisha yangu yote itakuwa na mabadiliko					
21	Kama nitapata mimba, haitaka kwa muda unaofaa					
22	Kama nitapata mimba, nina hofu mtoto wangu hatastahimili shinikizo ya uchungu kuelekeas kujifungua na kujifungua					
23	Hata kama sitapata huduma za FANC, naamini kuwa nina afya njema mno na siwezi pata shida ya kujifungua, au matatizo baada ya kujifungua					
24	Kama mimi sitapata huduma za FANC, naamini kwamba nitakuwa katika hatari ya matatizo kwa ajili ya kuendeleza ujauzito, kujifungua au baada ya kujifungua					
C	Perceived benefits	SD	D	N	A	SA
		1	2	3	4	5
25	Nikihudhuria kliniki ya FANC hujisikia vizuri					
26	Kuhudhuria kliniki ya FANC inaniruhusu kujifunza juu ya maendeleo ya mimba yangu.					
27	Kuhudhuria kliniki ya FANC kwa wakati ufaayo siwi na wasiwasi sana kuhusu mimba yangu na 'matokeo yake.					
28	Nikikamilisha ziara nne za FANC,naamini nitapunguza uwezekano ya matatizo kuhusiana ya mimba					
29	Nikikamilisha ziara nne za FANC, nitajifunza juu jinsi ya kijianda kwa					

	kujifungua na kupunguza nafasi ya kuchelewesha kutafuta huduma uchungu wa kizazi inapoanza					
30	Nikikamilisha ziara nne za FANC, atanisaidia kupokea huduma mbalimbali ya (hatua za kuzuia kama PMTCT, TTV chanjo, Iron na vitamini A Nyongeza, SP, vyandarua vyenye dawa, safura matibabu) kwa ajili ya matokeo mema ya mimba					
31	Nikikamilisha ziara nne za FANC,naongeza nafasi yangu katika kutambua hali ya hatari zinazohusiana na ujauzito mapema					
D	Perceived barriers.	SD	D	N	A	SA
		1	2	3	4	5
32	Napata ugumu kuhudhuria kliniki za FANC					
33	Mawazo ya mazungumzo na madaktari na wauguzi katika zahanati za FANC hunisumbua					
34	Umbali mrefu ya kituo cha afya wakati wa ujauzito inafanya kuwa vigumu mimi kupata huduma za FANC					
35	Njia ya eneo mbovu inanita wasiwasi kusafiri kwenda kliniki za FANC.					
36	Kukaguliwa na wafanyakazi kiume katika kliniki FANC ni inanita aibu					
37	Kuhudhuria ziara zote za FANC inanita uchovua					
38	Ni muhimu kwa ajili yangu niombe ruhusa kabla ya kuhudhuria kliniki za FANC					
39	Njia za usafiri na uchukuzi ni tatizo unapozungumzia suala la kupata huduma FANC					
40	Fedha ni tatizo kubwa wakati wa kutafuta huduma za FANC					
41	Sina faragha ya kutosha katika kliniki FANC					
42	Foleni ndefu sana katika kliniki za FANC hunitia mimi wasiwasi sana					
43	Uhaba wa wafanyakazi katika kliniki FANC hufanya mimi ruka baadhi ya kliniki					
E	Mothers Cues to Action Towards Uptake Of FANC	SD	D	N	A	SA
		1	2	3	4	5
44	Nataka kugundua matatizo ya mimba mapema					
45	Kudumisha afya njema wakati wa mimba ni muhimu sana kwangu					
46	Ujauzito ni mumimu sana kwangu					
47	Mimi hutafuta habari mpya kwa afya yangu wakati wa ujauzito					
48	Najisikia ni muhimu kufanya shughuli ambayo inaboresha afya yangu na matokeo ya ujauzito wakati wa ujauzito					
49	Mimi kuhakikisha nimepata lishe bora wakati wa ujauzito					
50	Nafanya kukaguliwa kiafya kila mara nikiwa mjamzito hata kama sijihisi kuwa mgonjwa					
51	Nilijifunza kuhusu IFAS kupitia vyombo vya habari					
52	Nilianza kliniki za FANC kwa sababu niliambiwa ni muhimu na rafiki					

	au ndugu					
53	Kutokana na matatizo yangu ya mimba awali,nahakikisha kwamba nahudhuria FANC katika mimba yangu ya hivi ya karibuni					
54	Nilihudhuria kliniki za FANC ili niepuke na matatizo ya mimba/ujauzito kama jamaa yangu wa karibu au rafiki alivyofanya					
F	Mothers Self-Efficacy Levels Towards Uptake of FANC	SD	D	N	A	SA
		1	2	3	4	5
55	Ninatambua kliniki nne za FANC zinazotakikana wakati wa ujauzito					
56	Nina hakika kwamba nawezakuhudhuria ziara zote za kliniki za FANC					
57	Katika mimba yangu ya baadaye nitahudhuria ziara zote za kliniki za FANC					
58	Nina hakika ya dalili za hatari za kuangalia wakati wa ujauzito					
59	Nina uwezo wa kufanya maandalizi/mpango ya kuzaa kwa mwenyewe					
60	Nina hakika na huduma ambayo inafaa nipate katika kliniki ya FANC kwa ajili ya mimba za afya na matokeo nzuri ya ujauzito					
61	Nina hakika kuhusu nyakati na muda ya ziara nne za FANC					
62	Nina hakika kwamba ninaweza kushinda vizuizi kuhusishwa wakati wa kutafuta huduma za FANC nikiwa mjamzito					
63	Faida za kutafuta huduma za FANC inazidi vikwazo kuhusishwa katika kutafuta huduma					
64	Nina uwezo wa kutambua maumivu ya kizazi ya uongo na maumivu ya kizazi ya kweli					
65	Kutokana na huduma katika Table four (masharti) nilipata huduma zote ifikapo mwishoni mwa kipindi kabla ya kujifungua					
66	Niliridhika sana kutokana na huduma za FANC nilizopokea					

Appendix 13: Focused group discussion guide

UPTAKE OF FOCUSED ANTENATAL CARE SERVICES AMONG WOMEN OF REPRODUCTIVE AGE IN NAKURU COUNTY.

Introduction

Greetings

My name is _____ and my colleagues is _____. We would like to discuss your views on uptake of focused antenatal care services. This will better help us understand how to improve the services offered and the number of women seeking the FANC services.

It is my hope that you will assist us in this endeavor. The way we have organized this is activity is like a ‘discussion’ that will enable us to get the information we seek. We would encourage you to contribute as much as you can remember. There is no right or wrong answer. All the discussions here will remain confidential and will only be used for research purposes only.

My colleague will try as much as possible to write all that we discuss but just as a backup we have recorder that we can fall back on since you are likely to speak faster than we write. I hope that this is okay. This discussion will take at least 45 minutes

If there are no questions, let us begin...

QUESTIONS.

25. What do you understand by focused antenatal care?

Probe:

26. How many visits does one make in FANC?
 27. At what gestation should one start FANC?
 28. How frequent does one attend the FANC visits?
 29. What services are offered during each FANC visit?
 30. Who should use FANC services?
 31. What do you think can go wrong if you failed to attend FANC services?

Probe:

32. Did you attend FANC in your previous pregnancy?

33. Give reasons for your response above?
34. What are your greatest fears in relation to not attending FANC?
35. Do you think you are at any risk if you failed to attend FANC?
36. Give reasons for your response above?
37. What are some of the serious consequences do you think you would suffer if you did not attend FANC

Probe:

38. Have you seen any woman who experienced serious problems after failing to attend FANC?
39. If yes above what were the problems?
40. In your understanding what are the benefits of attending FANC?

Probe:

Assess if a mother received the health education on:

41. Nutrition and breast feeding
42. Personal hygiene
43. Danger signs in pregnancy
44. Exclusive breast feeding
45. Harmful habits e.g. drug abuse, smoking
46. Use of traditional medicine
47. Plans for delivery
48. Schedule for next visit
49. Plan for postpartum
50. Effects of STI
51. What would you say are the barriers that prevent you from using FANC services?

Probe:

52. Find out personal, social, cultural and any other barriers to uptake of FANC.
53. What are some of the reasons that would make a pregnant woman not come for the FANC clinic?
54. What factors would make you attend FANC services?

Probe?

55. What are some of the reasons that would make a pregnant woman attend FANC clinic?
56. Who in your community can influence men and women take up FANC?
57. What are the views in the community about attendance to FANC?
58. Are you satisfied by the services offered at FANC clinic? Give reasons for your answer?
59. Who influences uptake of FANC services in your community?
60. How can mothers be assisted to improve their FANC attendance?
61. In a scale of 1-5 how would you rate your confidence level to practicing FANC and why?
 1. Very confident
 2. Confident
 3. Not sure
 4. Not confident
 5. Extremely not confident

Probe reasons for self-rating

62. Are you able to maintain the four visits throughout your pregnancy period?
Give reasons for your response

Appendix 14: Focused group discussion guide- Kiswahili Version

Kiambatisho 2: Majadiliano na akina mama baada ya kujifungua MASWALI.

63. Je, eleza unachokielewa kwa huduma unaolenga wajawazito?

Chunguza:

- 64. Nambari za ziara mjamzito anafanya katika FANC?
- 65. Muda upi wa ujauzito lazima mama aanze FANC?
- 66. Ni kwa muda gani mama anafaa kuhudhuria FANC?
- 67. Ni huduma zinazotolewa wakati wa ziara ya kila FANC?
- 68. Nani anapaswa kutumia huduma FANC?

- 69. Unafikiri nini yaweza enda vibaya kama wewe hutahudhuria huduma za FANC?

Chunguza:

- 70. Je, ulihudhuria FANC katika mimba yako ya awali?
- 71. Toa sababu za majibu yako hapo juu?
- 72. Hofu kubwa wako katika ya kutohudhuria FANC ni nini?
- 73. Je, unafikiri unaweza kuwa katika hatari yoyote kama wewe hutahudhuria FANC?
- 74. Toa sababu za majibu yako hapo juu?

3 Je, ni ani baadhi ya madhara makubwa unaofikiri unaweza pata kama wewe hakuhudhuria FANC

Chunguza:

- 75. Umeona mwanamke yeyote ambaye uzoefu matatizo makubwa baada ya kushindwa kuhudhuria FANC?
- 76. Kama ndiyo hapo juu ni gani matatizo

4 Vile unavyoelewa, nini ni faida ya kuhudhuria FANC?

Chunguza:

Tathmini kama mama alipata elimu ya afya juu ya:

- 77. Lishe na kunyonyesha
- 78. Usafi binafsi
- 79. Ishara ya hatari katika mimba
- 80. Kunyonyesha kwa kipekee
- 81. Madhara ya kutumia madawa ya kulevya, uvutaji
- 82. Matumizi ya dawa za jadi
- 83. Mipango kwa ajili ya utoaji
- 84. Ratiba ya ziara ijayo
- 85. Mpango wa baada ya kujifungua
- 86. Madhara ya magonjwa ya zinaa

5. Nini unaweza kusema ni vikwazo kwamba kuzuia kutoka utumizi ya huduma za FANC?

Chunguza:

87. Ulizia vikwazo binafsi, kijamii, kiutamaduni na nyingine yoyote inayozuia utumizi ya FANC.
88. Ni nini baadhi ya sababu ambazo zingewezazua mwanamke mjamzito kufika kwa kliniki FANC?

6. Ni mambo gani bila kufanya kuhudhuria ibada FANC?

Chunguza:

89. Nini baadhi ya sababu ambazo zingewezasha mwanamke mjamzito kuhudhuria FANC kliniki?
90. Ni nani katika jamii yako inaweza kushawishi wanaume na wanawake kuchukua FANC?
91. Ni ipi maono ya jamii juu ya mahudhurio ya FANC?
92. Je, umeridhika na huduma zinazotolewa katika FANC kliniki? Toa sababu za jibu lako?
93. Ni nani mvuto katika matumizi ya huduma FANC katika jamii yako?
94. Ni jinsi gani akina mama wanaweza kusaidiwa ili kuboresha mahudhurio ya FANC?

7. Katika uzani wa 1-5 jinsi gani kiwango cha imani yako na huduma za FANC na kwa nini?

95. 1 Nina Imani sana
96. 2 Nina Imani ti
97. 3Sina hakika
98. 4-Sin Imani
99. 5 Sina Imani kabisa

Chunguza sababu

Je, mnaweza kudumisha ziara nne katika kipindi chote cha ujauzito? Toa sababu za majibu yako.

Appendix 15: Household distribution table

Sampled Village Names	Households	Sample Interval	Sample Households	Proportion	Sample
Kapkures	101	13	8	0.02	7
Kiptenden	124	13	10	0.03	9
Kiplelecghi	74	13	6	0.02	5
Chebitet	75	13	6	0.02	6
Kabianga	120	13	9	0.03	9
Koisegem	82	13	6	0.02	6
Cheptebe	61	13	5	0.01	4
Kasimotwo	101	13	8	0.02	7
Chesupeno	74	13	6	0.02	5
Terenu	123	13	9	0.03	9
Tanzanku	132	13	10	0.03	10

Langas	116	13	9	0.03	9
Kiptagich	120	13	9	0.03	9
Kiwanja	130	13	10	0.03	10
Chebarus	119	13	9	0.03	9
Chepsin	73	13	6	0.02	5
Sorigwet	80	13	6	0.02	6
Sigowet	74	13	6	0.02	5
Kiptendet	99	13	8	0.02	7
Seya	68	13	5	0.01	5
Gachakage centre	101	13	8	0.02	7
Sirikwa centre	101	13	8	0.02	7
Cheptagum	66	13	5	0.01	5
Zachoran	91	13	7	0.02	7
Siribwet"b"	61	13	5	0.01	4
Kangawa ii	81	13	6	0.02	6
Gitwamba	70	13	5	0.02	5
Bondeni	88	13	7	0.02	6
Nyakiagua centre	70	13	5	0.02	5
Highlands	67	13	5	0.01	5
Tombo "a"	79	13	6	0.02	6
Teach-asis	66	13	5	0.01	5
Kemugul	71	13	5	0.02	5
Kondamet	86	13	7	0.02	6
Tangit	71	13	5	0.02	5
Baringo	67	13	5	0.01	5
Ngania	177	13	14	0.04	13
Moto kaheho	459	13	35	0.10	34
Moto maemdeleo	547	13	42	0.12	40
Set-kotes	143	13	11	0.03	10
Moto kandeto	79	13	6	0.02	6
Wood stock	46	13	4	0.01	3
TOTAL	4633		356	1.00	340

Appendix 16: Approval by the Kenyatta University Graduate School



**KENYATTA UNIVERSITY
GRADUATE SCHOOL**

E-mail: kubps@yahoo.com
dean-graduate@ku.ac.ke
 Website: www.ku.ac.ke

P.O. Box 43844, 00100
 NAIROBI, KENYA
 Tel. 810901 Ext. 57530

Internal Memo

FROM: Dean, Graduate School **DATE:** 17th October, 2016

TO: Ms. Munguti C. Muthingu **REF:** Q57/NKU/PT/24180/13
 C/o Department of Community Health
 Kenyatta University

SUBJECT: APPROVAL OF RESEARCH PROPOSAL

We acknowledge the receipt of your revised Research Proposal entitled “**Uptake Focused Antenatal Care Services among Women of Reproductive Age in Nakuru County, Kenya**” as per recommendations raised by the Graduate School Board of 21st September, 2016

You may now proceed with your Data collection, subject to clearance with the Director General, National Commission for Science, Technology & Innovation.

As you embark on your data collection, please note that you will be required to submit to Graduate School completed supervision Tracking Forms per semester. The form has been developed to replace the progress Report Forms. The Supervision Tracking Forms are available at the University’s Website under Graduate School webpage downloads.

Thank you.

REUBEN MURIUKI
FOR: DEAN, GRADUATE SCHOOL

c.c. Chairman, Department of Community Health
 Supervisor

1. Dr. Justus O. S. Osero
 C/o Department of Community Health
 Kenyatta University
2. Dr. Eunice Chomi
 C/o Department of Community Health
 Kenyatta University

RM/cao

Appendix 17: Ethical approval by the Kenyatta University Ethical Review Committee



KENYATTA UNIVERSITY
ETHICS REVIEW COMMITTEE
 Moi Library 1st Floor, Office No. 25

Fax: 8711242/8711575
 Email: chairman.kuerc@ku.ac.ke
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P. O. Box 43844,
 Nairobi, 00100

Tel: 8710901/12

Our Ref: KU/ERC/APPROVAL/VOL.1 (10)

Date: 12th January, 2017

Munguti Catherine Muthingu
 Kenyatta University
 P.O. Box 43844
 NAIROBI

Dear Munguti,

APPLICATION NUMBER PKU/603/1688 – “UPTAKE OF FOCUSED ANTENATAL CARE SERVICES AMONG WOMEN OF REPRODUCTIVE AGE IN NAKURU COUNTY, KENYA” – VERSION 2

1. IDENTIFICATION OF PROTOCOL

The application before the committee is with a research topic “Uptake of Focused Antenatal Care Services among Women of Reproductive Age in Nakuru County, Kenya” Version 2 received on 22nd December, 2016 and discussed on 10 January 2017.

2. APPLICANT

Munguti Catherine Muthingu

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 Ethics Review Committee Guidelines AND APPROVED that the research may proceed for a period of ONE year from 12th January, 2017.

5. ADVICE/CONDITIONS

- 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.

CONDITIONS

- 1. You must report to the County Commissioner and the County Education Officer of the area before embarking on your research. Failure to do that may lead to the cancellation of your permit.**
- 2. Government Officer will not be interviewed without prior appointment.**
- 3. No questionnaire will be used unless it has been approved.**
- 4. Excavation, filming and collection of biological specimens are subject to further permission from the relevant Government Ministries.**
- 5. You are required to submit at least two(2) hard copies and one (1) soft copy of your final report.**
- 6. The Government of Kenya reserves the right to modify the conditions of this permit including its cancellation without notice**



REPUBLIC OF KENYA



National Commission for Science, Technology and Innovation

RESEACH CLEARANCE PERMIT

Serial No. A **13251**

CONDITIONS: see back page

**Appendix 19: Permission to collect data from Ministry of health Nakuru County-
Department of reproductive health**

**REPUBLIC OF HEALTH
NAKURU COUNTY GOVERNMENT
DEPARTMENT OF HEALTH SERVICES**

Telegrams "PROVMED" Nakuru
Tele: Nakuru 2216710 Fax 2210350



COUNTY DIRECTOR
ADMINISTRATION AND PLANNING
P.O. BOX 2060
NAKURU

When replying please quote

Ref No: DHS/CDAP/2016/057

2ND NOVEMBER, 2016.

**SCMOH
KURESOI NORTH**

Dear Sir/Madam,

**RE: PERMISSION TO COLLECT DATA ON UPTAKE OF FANC AMONG
WOMEN OF REPRODUCTIVE AGE- BY CATHERINE M. MUNGUTI.**

I would like to introduce to you the above officer who is pursuing MPH at Kenyatta University.

Please give her any necessary assistance to collect the data for her study.

**DR. BEN OSORE
COUNTY DIRECTOR, ADMINISTRATION AND PLANNING
NAKURU COUNTY**



Appendix 20: Sample Filled Questionnaire