

**DETERMINANTS OF TIMELY INITIATION OF  
ANTENATAL CARE AMONG PREGNANT WOMEN  
ATTENDING ANTENATAL CLINIC AT EMBU COUNTY  
REFERRAL HOSPITAL, KENYA**

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**2023**

**Determinants of Timely Initiation of Antenatal Care among Pregnant  
Women Attending Antenatal Clinic at Embu County Referral Hospital,  
Kenya**

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**A Thesis Submitted in Partial Fulfillment of the Requirements for the  
Degree of Master of Science in Nursing (Reproductive  
Health and Midwifery) of the Jomo Kenyatta University of Agriculture  
and Technology**

**2023**

## DECLARATION

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

Signature.....Date.....

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This thesis has been submitted for examination with our approval as University supervisors.

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## **DEDICATION**

I dedicated this study is to my dear mum Florence Muthoni Kinogu, my adoring husband Anthony Muthii Kibuchi and my lovely children Levi Mutugi and Ivy Nyakio.

## **ACKNOWLEDGEMENTS**

I take this opportunity to appreciate all who supported me and contributed to the success of this thesis. Special thanks go to my supervisors Dr. Mutisya A. Kyalo and Ms. Caroline Nyariki for their guidance, relentless advices and encouragement all through the study. I recognize and appreciate Dr. Elijah Mwangi for guiding me in the data analysis. This study achievement would not have been possible without your valuable inputs.

My sincere gratitude goes to my colleagues at Jomo Kenyatta University of Agriculture and Technology for their support and encouragement throughout this study. I am grateful too to the Embu County Training and Referral Hospital for allowing me to conduct my study there. I can't forget my research assistants and all the respondents who took part in this study. This would not have been possible without your dedication and cooperation. May God bless you all?

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## **ABBREVIATIONS AND ACRONYMS**

<b>ANC</b>	Antenatal Care
<b>EL5H</b>	Embu Level 5 Hospital
<b>HIV</b>	Human Immunodeficiency Virus
<b>ICF</b>	International Coach Federation Macro
<b>ICU</b>	Intensive Care Unit
<b>KDHS</b>	Kenya Demographic and Health Survey
<b>KNBS</b>	Kenya National Bureau of Statistics
<b>MCH/FP</b>	Maternal and Child Health and Family Planning
<b>MOH</b>	Ministry of Health
<b>STIs</b>	Sexually Transmitted Infections
<b>TB</b>	Tuberculosis
<b>WHO</b>	World Health Organization

## OPERATIONAL DEFINITION OF TERMS

<b>Antenatal care</b>	Care that is given by trained health-care experts to the pregnant mothers and girls in their adolescence so as to guarantee good health status for both the mother and the newborn prenatally.
<b>Socioeconomic status</b>	Activities involved in supporting live hood financially.
<b>Parity</b>	Number of deliveries.
<b>Cultural factor</b>	Refers to practice of a community.
<b>Health facility factors</b>	Activities related to venues of obtaining health care.
<b>Sociodemographic factors</b>	Refers to a population based on factors education, race sex, income, religion.
<b>Timely initiation</b>	The right time for an activity.

## ABSTRACT

Timely initiation of ANC is fundamental for primary diagnosis of dangers signs in pregnancy .It's also vital in establishing of preventive and promotive health in addition to management of any arising disorders, and essential referrals. The WHO guidelines recommend that, from the minimum of four visits, all pregnant women upturn contacts with their healthcare givers, to eight contacts throughout their gestation period. Regrettably, only 64% of expectant women seek for antenatal care services for at least four or more visits during their pregnancy period globally. This study sought to establish the determinants of timely initiation of antenatal care among pregnant mothers attending antenatal care at Embu Level 5 Hospital. The study was a health facility based analytic cross-sectional utilizing a mixed methods approach. Study population involved all pregnant mothers who sought ANC at the Embu Level 5 Hospital. Systematic random sampling technique was used and structured questionnaires were used for data collection. Statistical Package for Social Sciences (SPSS<sup>®</sup>) v 22 was used for data analysis. The findings showed that about three quarters (146, 73.7%) of the respondents were married with less than a half (83, 41.9%) being college or university level graduates. More than half (117, 59%) were unemployed with few (91, 46%) owing family businesses. A great number of the respondents (132, 66.7%) indicated that the time taken to be attended at the hospital was too long. On timely initiation of ANC, majority (137, 69.2%) initiated within 12 weeks with only few (61, 30.8%) initiating late. Stepwise regression showed that, health workers attitude was important in the process of timely initiation of ANC care. In conclusion, age and waiting time at the health facility had a statistically significant association with timely initiation of ANC. Training of subordinate staff in filling the clients' bio data and taking vital signs as a measure to reduce on the clients waiting time at the health facilities

## CHAPTER ONE

### INTRODUCTION

#### 1.1 Background to the study

As documented by the World Health Organization (WHO, 2016), about 303,000 pregnant women are projected to have died to pregnancy associated complications globally. About 2.6 million infants were stillborn while 2.7 million neonates succumbed during their first 28 days. . Many of these deaths could possibly be prevented prenatally and during delivery if quality health care is given. Unfortunately, worldwide only 64% of expecting women seek prenatal care services for four or more than four visits during their pregnancy. In Kenya and all over the expanses of sub-Saharan Africa, maternal and neonatal mortality remains a foremost health problem (KNBS and ICFM, 2015). It is also reported by KNBS and ICFM, 2015 that the maternal mortality rate In Kenya is 362 deaths per every 100,000 live births. Additionally, the death ratio for the infants is estimated to be 39 deaths per 1,000 live births whereas 52 deaths happen in every 1,000 children below the age of 5 years (KNBS and ICFM, 2015). Excellent maternal health services accessibility is vital for reducing the aforementioned disproportions in health consequences for mothers and newborns. Women having their initial ANC visit within their first trimester remain the best practice.

Antenatal care (ANC) means the package of health care services provided throughout pregnancy, from conception to the commencement of labour. It also comprises attention to the health of the expectant woman and unborn baby, offering quality therapeutic and psycho-social health care, as well as health promotion (Oakley, 2009). The care involves recording the mother's history, examination of her needs, advising and counseling her on pregnancy and delivery, in addition to screening and testing. Counseling on self-care and self-upkeep while pregnant, is also done. The 2016 World Health Organization ANC model aims at providing expectant mothers with reverential, personalized, individual centered care during every contact, and to certify that every contact offers effective

incorporated medical practices. It also aims at providing appropriate and timely information, and to offer psychosocial and emotional care by the health workers with decent medical and interactive skills and also working in healthy-operational health systems (WHO, 2016).

In addition, the 2016 WHO guidelines on ANC recommends that for a positive pregnancy experience, all expectant women to increase their contacts with their healthcare care providers from the least possible four visits to eight contacts during their entire gestation period. This further indicates that increase in the frequency of contacts with the health care providers for prenatal care by pregnant mothers and girls in the adolescent period results to probability of reduced infant mortality. This occurs as a result of more openings that identifies and manages probable conditions (WHO, 2016). There's an indication that as compared to the earlier four visits as the minimum, the now recommended eight minimum contacts for prenatal care services decreases antenatal mortality approximately by eight deaths in 1,000 births.

The reproductive health model raises the maternal and fetal assessments and helps to detect problems earlier and also improve communication amongst the healthcare providers and the pregnant women. In effect, this increases the possibility of positive pregnancy effects. It is recommended that pregnant mothers should have their first contact with a health care provider in their first trimester at first 12 weeks and ensuing contacts booked at 20th, 26th , 30th , 34th , 36th , 38th and 40th week gestation (WHO, 2018).

The Guideline Development Group favors the use of the word “contact” instead of the word “visit”, as it indicates a strong association between the pregnant woman and her health-care provider which is not so with the term “visit”. In the implementation of this recommendation, “contact” is be used in the indigenous settings during communal outreach programs and in the improvement of unprofessional health care providers (WHO, 2018).

Dr. Anthony Costello, who was a maternal, newborn, child, adolescents health director with the WHO, believed that additional and increased contacts among women and their healthcare providers during their pregnancy would enable the uptake of preventive measures and timely diagnoses of dangers (WHO, 2016). This henceforth decreases problems and addresses issues on the health disparities.

Early initiation of antenatal care according to McCormick & Siegel, (2001) is key for the: timely identification of the pregnancy associated dangers signs and establishment of regulations that prevent and promote health. This boosts healthy living routines, therapeutic management of disorders like gestational diabetes, gestational hypertension plus recommendations and timely referrals for other health care services. The services include nutritional care provision and cessation of smoking programs. Further, studies have also stated that pregnant women who do insufficient ANC contacts are more predisposed to pitiable pregnancy outcomes as well as those who initiate antenatal care after the initial trimester. This includes a higher rate of pre-term neonates and babies born with low birth weights (Bhaskar et al., 2015).

In different regions, the attendance for antenatal care in the initial trimester indicates a good to bad reportage globally while some nations' records predominantly very low ANC attendance. For instance, in the United States roughly five out six mothers (84%) initiate ANC in their first trimester (Low et al., 2005). Caribbean and Latin America reports 70% attendance while North Africa and the Middle East regions reports 68%. In Asia, 50% turnout is reported while 24% which is the least turnout is documented in the Sub-Saharan region (Abou-Zahr, 2003).

A Nigerian study done by Galadanci et al., (2007) indicated that 28% of the pregnant women are the ones who initiated care in the first trimester. In a separate study in Kwa-Zulu-Natal in South Africa, 98.6% of women are reported to have sought antenatal care in their initial pregnancy but only 8.4% of them initiated prenatal care during their first trimester (Horwood et al., 2010). The 2014 KDHS reported that only 20% of the pregnant women initiated the first prenatal visit within the first trimester. The survey also revealed

that the average pregnancy duration at the principal prenatal care visit in Kenya is approximately 5.4 months (KNBS & ICFM, 2015).

## **1.2 Statement of the Problem**

Initiation of ANC within the first trimester enables timely assessment, diagnosis and treatment of complications that may arise during pregnancy. It is also vital in establishing a good foundation for quality care during pregnancy, child birth and post-delivery. Most of the complications diagnosed antenatally, intrapartum or postpartum are as a result of poor initiation of ANC (Da Fonseca et al., 2014). Existing evidence indicate that globally, 64% of pregnant women seek prenatal care services but for only four or at least more times during pregnancy (WHO, 2016). Although data is available that indicates gestation at initiation of ANC, the determinants of timely initiation of prenatal care in Kenya are not well understood. Additionally, there is very limited available information on the same.

At the Embu Level 5 Hospital, in the period from January to September 2018, 5563 pregnant women sought ANC from the facility. Out of those clients, only 1184 women did their 4th visit. This is equivalent to 21.3%. Still in the same recorded data only 316 out the 55639 (5.7%) pregnant women initiated ANC during their first trimester. Considering that WHO now recommends eight antenatal contacts, the 21.3% and (5.7%) was far below the expected. Moreover, if meeting four visits appeared a problem, then meeting the 8 contacts as currently recommended by WHO was likely to be a bigger problem. The low achievement of the four ANC visits at the EL5H was therefore a great prod for undertaking this study.

The proposed study therefore sought to understand the determinants of timely initiation of ANC among pregnant mothers seeking antenatal care at the EL5H.

### **1.3 Justification**

Provision of ANC by qualified health care workers is vital in the monitoring of pregnancy and in the reduction of maternal and neonatal mortalities in pregnancy and during delivery. The antenatal period also offers a great opportunity for screening e.g. for HIV, immunization e.g. against tetanus, nutrition counseling and management of conditions like anaemia in pregnancy and HIV/AIDS. Additionally, sexually transmitted diseases are also screened and treated. Frequent ANC facilitates early diagnoses of fatal pregnancy outcomes. Prevention is initiated during pregnancy as early as possible and follow up done up to delivery. Conversely, late initiation of antenatal care results to possibility of undiagnosed or late diagnoses of maternal health conditions as well as untreated complications among the pregnant women hence adding to pregnancy complications and maternal deaths. There is a need to understand the determinants of early antenatal care attendance and design strategies aimed at ensuring that pregnant mothers seek antenatal care at the recommended time. This research will help in identifying the determinants of timely initiation of antenatal care. The results will also be shared with the county reproductive health department for appropriate actions, outreaches and campaigns to create awareness on the importance of timely ANC initiation.

The stage at which ANC appointment is booked has at most significance and guarantees optimum health benefits for both the pregnant mother and the child (Tufa et al., 2020). This also offers an opportunity to establish the baseline info on the overall welfare of the mother, determine the gestational age, and rule out multiple pregnancies and fetal anomalies. The mother is also taught on time the danger signs in pregnancy and pregnancy related complications. This results to timely seeking of suitable obstetric health care (Tsegaye et al., 2020).

Studies show that there are poorer pregnancy outcomes among the pregnant women who do inadequate ANC visits as well as them that initiate antenatal care after the initial trimester. The outcomes include pre-term neonates and low birth weight babies (da



Fonseca et al., 2014; Bhaskar et al., 2015). According to the ANC initiation data documented from January to September 2018, Embu region was wanting in early initiation of ANC. Out of the 5563 women who sought ANC at the EL5H; only (316, 5.68%) women initiated their visits in their first three months of pregnancy. This was therefore a clear indication that conducting the study in the facility was relevant.

#### **1.4 Research questions**

1. What proportion of pregnant women achieve timely initiation of ANC at EL5H?
2. Which sociodemographic factors are associated with timely initiation of ANC among the pregnant women attending ANC at EL5H?
3. Which economic factors are associated with timely initiation of ANC among the pregnant women seeking ANC at EL5H?
4. Which Health facility factors are associated with timely initiation of ANC among the pregnant women seeking ANC at EL5H?

#### **1.5 Objectives**

##### **1.5.1 Broad Objective of the study**

To establish the determinants of timely initiation of antenatal care among pregnant women attending antenatal clinic at EL5H, Kenya

##### **1.5.2 Specific objectives**

1. To determine the proportion of pregnant women who achieve timely initiation of ANC at EL5H?

2. To determine the sociodemographic factors associated with timely initiation of ANC among the pregnant women attending ANC at EL5H
3. To determine the economic factors associated with timely initiation of ANC among the pregnant women attending ANC at EL5H
4. To determine the Health facility factors associated with timely initiation of ANC among the pregnant women attending ANC at EL5H.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter describes literature review on determinants of timely initiation of antenatal care among pregnant women. It comprises the sociodemographic factors, economic factors and the Health facility factors.

#### **2.2 Antenatal care**

Antenatal care is defined as the care that is given by trained health-care experts to the expectant women and girls in their adolescence so as to guarantee good health status for both the mother and the newborn prenatally World Health Organization (WHO,2016). More so, it facilitates early diagnoses, prevention and treatment of possible complications related to pregnancy and coexisting diseases. This results to a direct reduction for both maternal and perinatal morbidity and mortality. Indirectly, the reduction is by identifying girls and women who are likely to develop complications antenatally, in labour, and during delivery hence early referral to the next approved level of care. It also involves giving of health education and counseling services for promotion of health. A global retrospective study in 2018 indicated that maternal morbidity and mortality remained high (WHO, 2018). In 2015, an estimated 303,000 women succumbed to pregnancy-related causes while 2.6 million babies were born dead (half of them in the third trimester). Still, 2.7 million neonates died in their first month of life (WHO, 2016).

Findings of a research done by Healthy Newborn Network in 10 countries, i.e. Democratic Republic of Congo, Rwanda, Nigeria, Zambia, Egypt, Nepal, Jordan, Haiti, Colombia and Indonesia shows that health care package was still poor among those whose designs of health care services observed the worldwide recommendations. This presented for the first time, a big picture view of the quality of ANC in the middle and low-income nations

(Benova et al., [2018](#)). A study done in the western region Kenya indicated that almost all the pregnant women sought ANC services during their last pregnancy. However, only 20% of the women initiated ANC visits in their first trimester while 54% of the women made at least four ANC visits.

### **2.3 Timing of First Antenatal Care Visit**

A study done in the United States showed that approximately five out of six mothers (84%) initiated ANC during their first trimester (Low, 2005). However in Africa, the following studies indicated poor timing for ANC; a research that was conducted in Addis Ababa Ethiopia involving pregnant mothers who sought health care in public health facilities showed that 42.0% of them initiated their first antenatal visit after 16 weeks of their pregnancy. The median time regarding the first visit was 16 weeks (Gulema, 2017). A comparable study done in Arba Minch, south Ethiopia indicated that the mean standard deviation (sd) gestational stage at the primary ANC initiation was  $5 \pm 1.5$  months. In that study, the percentage of pregnant women who initiated their first ANC contact within the recommended time was only 17.4% (Gebremeskel et al., 2015). In Rwanda, Mkandawire et al., (2019) demonstrated that, in spite of the early universal ANC coverage, only 25% of pregnant mothers started ANC within the timeframe recommended by WHOM. In South Africa, (Nattey et al., 2018), reported that only 43% of women initiated ANC as recommended by the country's health guidelines. Overall, women in this study initiated ANC at a median of 16 weeks gestation. In the same country, another study found that a huge percentage (72%) of the population under study went for their initial antenatal visit after the first three months of pregnancy (Ebonwu et al., 2018). In Gambia, the average gestational age at first antenatal care initiation was  $22.58 \pm 6.96$  weeks (Drammeh et al., 2018). Additionally, the rate of late antenatal care booking by the pregnant women in Ndola District, Zambia was 86.6% (Chewe et al., 2016). A study carried out in Kwale County, Kenya, revealed that early ANC attendance was poor with most of the women (65.6%) delaying initiation of ANC (Wekesa, 2018). Another study done in Murang'a County, Kenya showed that ANC attendance at the first visit was much lower than the

national level (62%), with 27% of the women completing the recommended four visits Mutai and Otieno, (2021).

## **2.4 Influence of sociodemographic factors on initiation of antenatal care**

### **2.4.1 Male involvement**

Most often men in the patriarchal communities and in the developing countries are identified as the makers of decisions in every aspect of daily living. A qualitative research done in Malawi revealed that the refusal by men to accompany their wives for ANC was a key barrier to timely initiation of first ANC visit. The main reason for the refusal was the fear of HIV test. This situation was aggravated by the fact that in that region, there existed a regulation which was mandatory that all women attend the ANC clinic accompanied by their husbands in the initial appointment failure to which they were not offered ANC services (Chimatiro et al., 2018).

According to a study done in Kathmandu Nepal, the 1323 men who responded in the study gave the following reasons for not accompanying their wives for ANC visits; about 53.0% felt that that was a woman's responsibility. Approximately 29.3% were busy meeting other obligations. Further 15.0% suffered embarrassment and (2.7%) suffered lack of knowledge (Thapa et al., 2013). In the same study on the other hand, the following men were recorded to have accompanied their wives for ANC; uneducated men or those who had primary education level, those who were older than 25 years, those who had better financial returns and those who were officially employed. Men of Hindu faith and non-indigenous traditions proved more participation (Thapa et al., 2013).

In Kenya at the Kenyatta National Hospital, a study was done on the factors influencing male participation in antenatal care in Kenya. The study concluded that sociocultural issues affected male involvement in the prenatal clinic. Both men and women remained obstacles to male involvement in antenatal care. They needed to denounce the belief that

reproductive health care was a pregnant woman's matter and that association with her is unmanly (Gathuto et al., 2014).

#### **2.4.2 Level of education**

Several researchers have considered the association between education and antenatal care. Some of these studies have exposed that low educational level is connected to reduced uptake of ANC services. It's also associated with untimely commencement of the care in addition to distraction of such like services. Likewise, based on a preceding research; time and frequency of antenatal care are considerably related with the formal educational level of the pregnant mothers and their partners. According to the results of a study done in Ethiopia, literate women are exposed to social media and are further likely to use both antenatal and neonatal care services (Tsfaye et al., 2017).

The research by Mkandawire and others in south Ethiopia established that there was an educational divide in timely initiation of first ANC. It also established that timely initiation of ANC was limited to pregnant women with higher formal education (Mkandawire et al., 2019).

Study by Raj Paudel in Nepal proposes that the interventions for the improvement of women's level of education have autonomous consequences on timely commencement of antenatal care. Health interventions through evidenced information, education, and awareness programs adapted to local contexts can promote timely ANC checkups. Timely antenatal visits can also be promoted by use of education, information and communication programmes modified to indigenous frameworks which are also health interventions (Paudel et al., 2017).

Research done at Kembata Tembaro Zone Southern Ethiopia indicated that educational status was an independent characteristic among other socio-demographic factors for late initiation of ANC. (Tekelab et al., 2014).

In Kenya, a study done at Mwaluphamba and Kizibe dispensaries in Kwale District in Kenya revealed that low education levels and high parity are some of the factors that affect early initiation and utilization of ANC (Wekesa et al., 2018)

### **2.4.3 Material support**

Most of the studies show positive relationship between socioeconomic status and the utilization of ANC. A study from China established that women who had greater domestic income and support were more probable to have sufficiently utilized ANC services (Ali et al., 2018). Similarly, a study from Ethiopia acknowledged that women with higher income are likely to start ANC early and the probability of uptaking ANC decreases, as the family income gets lower.

It also noted that the desire for material provision from household members was a contributing factor to non-attendance for antenatal care during the first trimester Chitimbe, (2006). In Ethiopia, Gashaw et al., (2018) recommended improving women academically and empowering them through financial reforms and reinforcing programs on family planning. This would lessen unplanned pregnancies and encourage husbands' participation in pregnancy and care, hence decreasing the extraordinary level of late prenatal care in Ethiopia.

In Kenya access to sponsored maternal health vouchers and health insurance covers were related to improved continuity of ANC. However, socio-economic discrepancies in access to care persisted after monitoring the accessibility to numerous health financing approaches. To achieve timely ANC initiation and sustainability of women in the maternal health services, policymakers must focus also on enhancing health financing systems to justifiably decrease financial barriers to care seeking. There should also be emphases on reducing non-financial obstacles and improving quality of care throughout the continuum (Dennis et al., 2019).

#### **2.4.4 Pregnancy intention**

The consequences of pregnancy planning have been established as contributors to the timing of initial ANC contact.

A report by reproductive health journal indicates that, unplanned pregnancy is related to delay in initiation and insufficient uptake of prenatal health care services. Therefore, women who show up with an unintentional pregnancy should be identified for prenatal psychotherapy and services to avoid fatal maternal and antenatal consequences. Furthermore, facilitating knowledge on the significance of preparation and appropriate timing of pregnancies and the ways on how to do so, to every woman within the reproductive ages is vital (Stern et al., 2016). Another of their reports still confirms a relationship between planning of pregnancy, consistency of prenatal care appointments and timely initiation of antenatal care visit. Women, whose pregnancies were reported as ill-timed or unintended, had a higher probability of not seeking antenatal care and if they did; they would attend for lesser than the commended four visits with delayed initiation by then (Stern et al., 2016). A study at Mbekweni Health Centre in Eastern Cape, South Africa showed that among those who participated some were afraid to reveal their pregnancies to their parents. All of these were students in high schools. They concealed their pregnant status as they thought that their sexual involvements would be known. In the same study, Lack of knowledge and ignorance on the possibility of getting pregnant while on a family planning method delayed seeking for antenatal care services early (Kaswa, 2018). Correspondingly, in South Ethiopia, women with unintended pregnancies have a higher probability to initiate antenatal care late as compared to women with planned pregnancies (Mkandawire et al., 2019).

#### **2.4.5 Parity**

Some Studies have demonstrated that the number of children influences the initiation of ANC. These studies show that the higher the parity, the lesser the practice of appropriate booking of antenatal care. Women with more children incline to be dependent on their



previous pregnancies experiences and undervalue the importance of antenatal care (Ali et al., 2018)

A South African study showed that parity was a predictor of early ANC uptake among HIV-positive diagnosed women. Those women who had three or more children were 40% less likely to start ANC early likened to null parity women (Nattey et al., 2018).

A study done in Ndola District, Zambia found parity as the greatest probable indicator for delayed initiation of antenatal care. It also indicated that previous antenatal care exposure was an affirmative predictor for appropriate appointment of ANC. Women without prior knowledge or experience of ANC and women with unintended pregnancies had a higher probability for delayed commencement of antenatal care (Chewe et al., 2016).

The study by Wekesa, (2018) at Mwaluphamba and Kizibe dispensaries in Kwale District in Kenya also exposed that low education levels and high parity are some of the factors that affect early initiation and utilization of ANC.

#### **2.4.6 Marital status**

A study done in South Africa documented that marital status among the women in the rural areas was a significant determinant of timely antenatal care initiation. Women who were married were more probable to start antenatal care later than women who were not married (Ebonwu et al., 2018). This was contrary to literature review from the Journal of Pregnancy and Neonatal Medicine (2018) which indicated that having an uncaring husband or partner was associated with late initiation of ANC for both the adolescents and adult women. In other studies, the scholars concluded that women who received no support from their spouses or partners started ANC almost three weeks later than those who were supported. Likewise, the uptake of ANC was nearly nine times more for women who reported their husbands' approval for ANC service than women whose husbands did not (Ali et al., 2018).

In the study by Nattey et al., (2018), women who had partners as their greatest support during pregnancy, were more likely to initiate ANC early as likened to those who did not. A study done in Tharaka Nithi County, Kenya showed that having a spouse was linked with higher uptake of Focused Antenatal Care (56%) as compared to the unmarried (Eliphas, 2017)

#### **2.4.7 Late ANC booking**

Religious and cultural beliefs influence pregnant women to start ANC later than the 12 weeks (WHO, 2016). Research in Ndola District, Zambia on late ANC booking among the pregnant women showed that age, marital status and parity were key predictors with late initiation of antenatal care (Chewe et al., 2016). In south Africa the following were identified as contributing factors to late booking of ANC; Occupation, unplanned pregnancy, religious and cultural beliefs, long waiting at the health facility, lack of support from a boyfriend or partner travelling long distance to the hospital (Ragolane, 2017).

### **2.5 Economic factors associated with timely initiation of ANC.**

#### **2.5.1 Unemployment**

In Ethiopia, unemployed women had a greater probability of starting ANC late as compared to those who had official employment. Additionally, in the same study women who had average household income less than two thousand Ethiopian Birr had a higher probability of initiating late when evaluated against their counterparts who had a higher income (Gulema et al., 2017).

In Addis Ababa Ethiopia, however, the mothers who were employed in government institutes were less expected to book in early (Abebe et al., 2017).

In another study at Mulango Hospital, Kampala, it was discovered that most pregnant mothers agreed that they had no money to go to the health facility while others assumed that antenatal care services needed to be paid for (Kisuule et al., 2013) Since maternal care

services are not entirely free in Kenya, It's easier to access these services by mothers who are in a position to provide for the costs than those who depend on free service.

### **2.5.2 Family Business**

In Malawi, pregnant mothers failed to initiate ANC early as they waited to have new clothes. Further, this study indicated that being in business had a consequence in resolution in early ANC initiation. They recounted there was a dilemma in balancing between provision for the family and the importance of antenatal care with most women choosing the former (Chimatiro et al., 2018). In Nigeria a study reported that women initiated antenatal care later as it was important to look for transportation money first (Abimbola et al., 2016). A research done in Malawi by Blantyre, found out that husbands did not accompany their spouses because they gave business and others obligations more priority (Nyondo et al., 2014).

## **2.6 Health facility factors and timely initiation of antenatal care**

### **2.6.1 Health workers attitude**

Health care workers poor attitude towards pregnant mothers has also an impact on resolution to initiate early antenatal care as evidenced in the Malawian study where women delayed since health care providers remained uncourteous besides failing to observe confidentiality (Chimatiro et al., 2018).

Research done at Ntcheu District in Malawi reported that, health care staffs poor attitude to pregnant women affected their decision to initiate early ANC (Chimatiro et al., 2018).

A study done in Kitui district hospital, Kenya by Kithua et al., (2015), indicated that Health care workers attitude impacted utilization of prenatal care services. When healthcare providers are approachable to the ANC clients, the clients tend to return back for their next appointments. Once clients are ill-treated, they tend not to honor their subsequent appointments. The study results also recognized that like in other zones in the

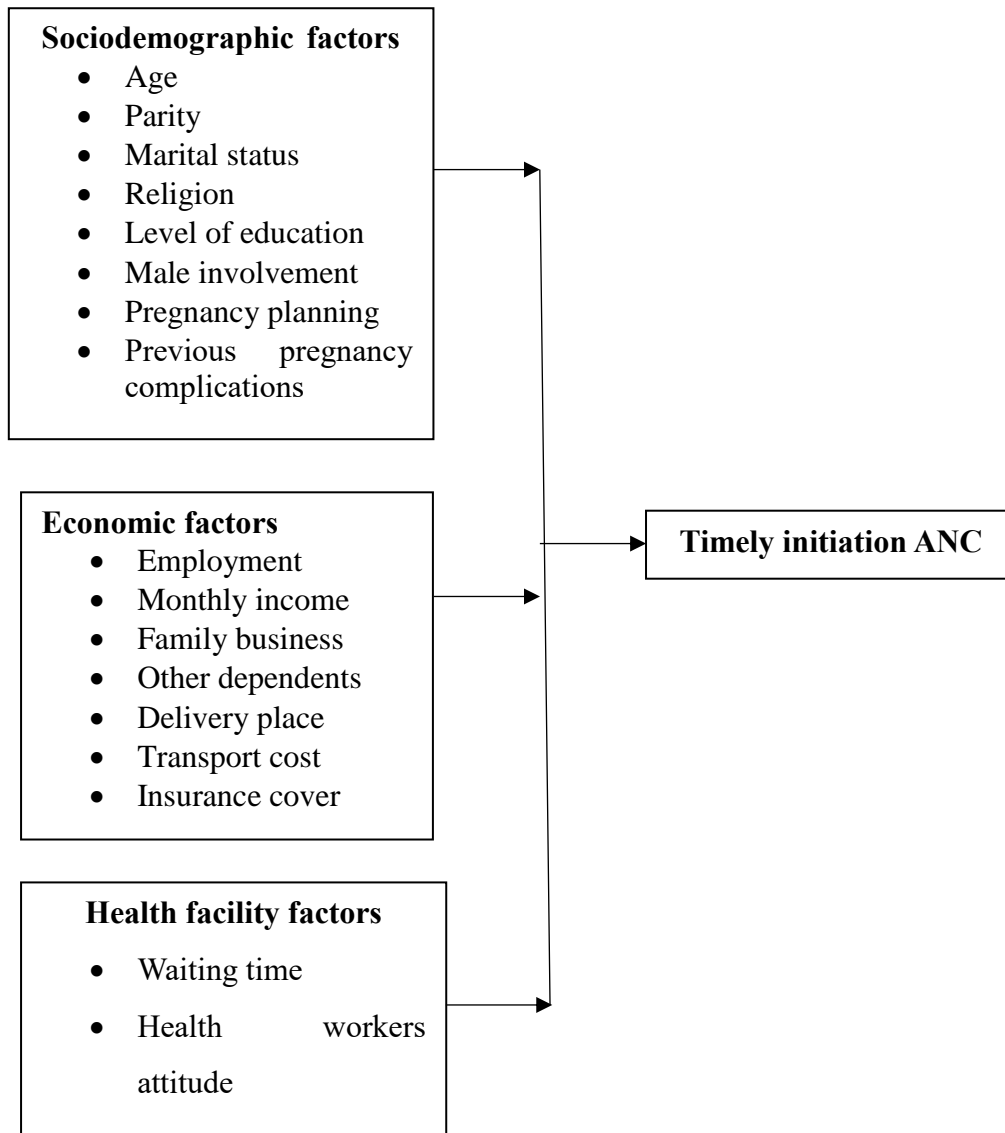
world, privacy of services impacts utilization of antenatal services in Kitui district hospital. Absence of privacy or insufficient privacy can make an antenatal client not to return for subsequent appointments.

### **2.6.2 Waiting time**

Participants in the research by Chimatiro et al., (2018) in Ntcheu District-Malawi reported that the long waiting time taken in accessing care within the health amenities owing to incorporation of ANC services and family planning demotivated women from starting the ANC early. In this facility, family planning clients were attended first. A study done in South East Nigeria established that extended waiting time and numerous ANC follow up program as institutional/systemic dynamics were accountable for delayed booking (Nwaneri et al., 2018). Research done in a multi-ethnic sample in South Auckland, New Zealand showed that spending long time in waiting rooms during antenatal visits and appointments was a determining factor in timely initiation of ANC (Corbett et al., 2014). Long waiting time at the hospital was found to be a contributing factor to reduced uptake of ANC (Kilowua et al., 2019)

Independent variables

Dependent variable



**Figure 2.1: Conceptual framework**

## **2.5 Theoretical Framework**

The study adopted the 1995 Andersen's behavioral model for health service use. The model aimed at establishing the factors that lead to utilization of health services determined by three aspects; predisposing factors, enabling factors and need. In relation to this study, the predisposing factors included the social demographic factors which consisted of; age, parity, religion, marital status, level of education, number of children and occupation status. The enabling factors included the economic factors and the Health facility factors whose variables were as follows; economic factors - monthly income, family business, medical Insurance cover, place of delivery and transport cost. The health facility factors considered were; waiting time at the hospital and the time taken to the health facility. The perceived need was achieving timely initiation of ANC. The study therefore sought to establish the determinants of timely initiation of antenatal care among pregnant mothers attending antenatal clinic at Embu county referral hospital, Kenya.

## **CHAPTER THREE**

### **METHODOLOGY**

#### **3.1 Research design**

The survey engaged a health facility based cross-sectional study design using mixed methods approach (sequential explanatory mixed methods). Initially the quantitative data was collected followed by collection and analysis of the qualitative data in the next stage. This was built on the outcomes of the preliminary quantitative results. Using this method, the combination of these two kinds of data arose at a number of phases: at the data collection, during the data analysis and during the interpretation.

#### **3.2 Study area**

This study was conducted at the Embu Level 5 Hospital which is the county training and referral health facility in Embu County, Manyatta Sub County, Kirimari ward. It is located along the Embu – Meru road approximately one kilometer from Embu town. The hospital has a capacity of 618 beds and 97 cots. It offers emergency services, medical, surgical, paediatric, gynecology, renal, Intensive Care Unit, oncology, maternity and MCH/FP services. The maternity unit has a capacity of 120 beds and 40 cots. The study was collected in the MCH/FP department which is located across the road opposite the general hospital. Approximately 30 ANC clients are seen at the MCH/FP each day.

#### **3.3 Study Population**

The population of study included all pregnant women who sought ANC at Embu level 5 hospital. This particular department delivers services to a mean of 30 pregnant women per day. This is equivalent to an average of 600 women per month new and revisits. Most of these come from within Embu, Chuka, Mbeere, Kirinyaga and Machakos.

### 3.4 Sample size

As required, the sample selected for study ought to be satisfactory to produce statistically substantial outcomes that can be associated or differentiated with other results (Castillo, 2009). The minimum required sample size for the study was determined using the following formulae:

$$\text{Fisher's } n = \frac{(z)^2 p(1-p)}{d^2}$$
$$n = \frac{(1.96)^2 \times 0.2(1-0.2)}{0.05^2} = 246$$

Whereby;

**n** = is the sample size

**z** = is the normal standard deviate for a given level of significance

$$(95\%)z_{\alpha} = 1.96$$

**p** = is the estimate of the proportion of pregnant mothers attending early ANC

**d** = is the desired level of precision (0.05)

A *p* of 0.2 was used based on the findings of the 2014 KDHS (KNBS & ICF Macro 2015).

Thus;

The minimum required sample size for the proposed study was 246 participants. The sampling begun by picking a woman at random then every 4<sup>th</sup> pregnant woman in the frame was selected.



### **3.4.1 Inclusion criteria**

The following pregnant women were involved in the study;

All pregnant mothers attending ANC at EL5H

### **3.4.2 Exclusion criteria**

Mothers diagnosed with comorbidities. This is because from triage they were directed to their specific review and consultation rooms eg. The diabetic ones.

### **3.5 Sampling technique**

Systematic random sampling technique was used. The first respondent was picked at random then every 4<sup>th</sup> woman was picked. This method was used for both the quantitative and qualitative data collection. The sample size was determined using the Fischer's formulae since the study population around the Embu region was more than 10,000.

### **3.6 Data collection**

Data was collected by the researcher with the help of trained research assistants who were senior nursing students. Structured questionnaires were used in collection of quantitative data. The qualitative data was collected using focused groups discussions.

### **3.7 Data collection tools**

#### **3.7.1 Questionnaire**

The questionnaires contained closed and open-ended questions. This helped to identify the precise expression and sequence of the questions when collecting data from the respondents. It was therefore offered a comparatively economical and well-organized technique to gain huge amount of data from a big sample of persons. Data was also gathered comparatively faster. The questionnaires were administered by the researcher

and the assistants. A set of questions was used to collect information for every variable. The questionnaire was organized as follows;

**Part i** - Sociodemographic factors (level of education, parity, pregnancy intention, time at ANC booking and male involvement).

**Part ii** - Proportion of pregnant women that achieve timely initiation of ANC

**Part iii** - Economic factors (employment, family business, cost of transport, possession of a health insurance cover and presence of other dependents)

**Part iv** - Health facility factors (health workers attitude and waiting time).

### **3.7.2 Focus group discussions**

Using this method, nine focus groups discussions were conducted. Each group consisted of five women who were selected randomly and met the inclusion criteria for the study. A FGD guide was used to guide the discussion in the collection of data. The participants signed the consent forms voluntarily as well as the study moderator. In every group, three trained assistants documented the answers. Data from the nine groups was adequate for using this method. Data saturation was arrived at after the 9<sup>th</sup> FGD.

### **3.7.3 Validity and reliability of data collection tools**

The tools were structured questionnaires and a focused group discussion guide. To ascertain validity, the supervisors' appraisal for the two instruments was sought. The selected study participants met the inclusion and exclusion criteria of the research. In focused group discussion the researcher moderated the discussion using a list of the questions. Reliability test for the two tools was done through test-retest method. Results achieved from the quantitative data were related using Pearson moments correlation method. Reliability coefficient of 0.75 was acceptable according to the rule of the thumb if (X it is  $\geq 0.70$ , the acceptable minimum).

### **3.8 Data collection procedure**

With the help of the four recruited assistants, questionnaires with structured questions were administered. Closed and open-ended questions were used. They were written in English but the moderator interpreted and explained where necessary. Field notes were used to conduct the focused group discussions by the assistants. The moderator steered the discussions using a list of the study guide questions.

### **3.9 Data management**

The collected data was thereafter completed, cleaned and coded. It was then subjected to various analyses. In section A, the quantitative data was analyzed as follows; section A; social demographic -factors frequencies and percentages; section B; proportion of pregnant women that achieve timely initiation of ANC - frequency and percentages; Section C; economic factors - means and standard deviation and section D; health facility factors - chi-square. Descriptive statistics was used to describe (and analyse) the variables numerically. Qualitative data was transliterated and analyzed manually by themes. Thematic content Analysis was used to analyze qualitative data. The filled questionnaires and the field notes were reserved under tight security in a cabinet during data collection and were only accessible to the research team.

### **3.10 Ethical considerations**

The ethical consent was obtained from the UoN KNH-ERC. Covid -19 prevention protocols were strictly observed since the data was collected at the pick of Covid -19 pandemic. There was also conformity to the guidelines of the Helsinki declaration. All consenting study participants were requested to sign an informed consent form. To protect confidentiality and anonymity the participant's identity was not related with individual's answers. Encryptions and not names were used on the questionnaire. Respect and privacy was maintained. Further, voluntary participation of respondents in the research was ensured. Participants had the freedom to opt out from the interview at any stage if they

wished to. The study assumed and endorsed non-plagiarism policy by guaranteeing that any information or knowledge gotten from other studies was respectfully recognized by appropriate in-text references and correct citations.

## **CHAPTER FOUR:**

### **RESEARCH FINDINGS**

#### **4.1 Introduction**

This section presents analysis and findings as set out in the research methodology and is presented showing the determinants of timely initiation of antenatal care among pregnant mothers attending antenatal clinic at EL5H, Kenya.

#### **4.2 The Response Rate**

Out of the targeted research sample of 246, 198 (80.16%) respondents filled and returned the questionnaire. A response rate of 50% is adequate for analysis and reporting; a rate of 60% good while a response rate of 70% and over is excellent for the analysis (Mugenda & Mugenda, 2003). The response rate obtained in the study was adequate for analysis & reporting.

#### **4.3 Social Demographic Factors**

The study sought to determine the sociodemographic factors associated with timely initiation of ANC among the pregnant women attending ANC at EL5H as the first variable.

##### **4.3.1 Ages of the Respondents**

The age distribution of the respondents is as shown in table 4.1. The results indicated that, slightly more than half, (115, 58.1%) were aged between 21-30 years while two of them 2(1%) were aged between 41-50 years.

**Table 4.1: Ages of the Respondents**

<b>Item</b>	<b>Category</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Age</b>	10-20 yrs	30	15.2
	21-30yrs	115	58.1
	31-40yrs	51	25.7
	41-50yrs	2	1.0
<b>Total</b>		<b>198</b>	<b>100</b>

### **4.3.2 Marital Status of the Respondents**

Table 4.2 indicates the marital status of the participants. About three quarters (146, 73.7%) of the respondents were married. Slightly more than a quarter, (52, 26.3%) were either single or separated.

**Table 4.2: Marital Status of the Respondents**

<b>Item</b>	<b>Status</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Marital status</b>	Currently married	146	73.7
	Single	32	16.2
	Separated	20	10.1
<b>Total</b>		<b>198</b>	<b>100</b>

### **4.3.3 Education Level of the Respondents**

On the education level of the respondents, Less than half (83, 41.9%) had attained at least college or university education, while (17, 8.6%) had no formal education. The findings are presented in table 4.3 below.

**Table 4.3: Education Level of the Respondents**

<b>Indicators</b>	<b>Details</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Education</b>	No formal education	17	8.6
	Primary school level	46	23.2
	Secondary school level	52	26.3
	College/university level	83	41.9
<b>Total</b>		<b>198</b>	<b>100</b>

#### 4.3.4 Religion of the Respondents

Table 4.4 shows the religion of the Respondents. Most of the respondents (164, 82.8%) were Christians, approximately (24, 12.1%) were Muslims while (10, 5.1%) submitted to other religions.

**Table 4.4: Religion of the Respondents**

<b>Indicators</b>	<b>Details</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Religion</b>	Muslim	24	12.1
	Christianity	164	82.8
	Others	10	5.1
<b>Total</b>		<b>198</b>	<b>100</b>

#### 4.3.5 Obstetric characteristics

Slightly above half, (102, 51.5%) of the study respondents had one previous pregnancy, while (9, 4.5%) had had 6 and above pregnancies. This is as indicated by table 4.5 below.

**Table 4.5: Number of Pregnancies**

<b>No. Of pregnancies</b>	<b>Frequency</b>	<b>Percentage</b>
<b>1</b>	102	51.5
<b>2</b>	39	19.7
<b>3</b>	23	11.6
<b>4</b>	7	3.5
<b>5</b>	3	1.5
<b>6 and above</b>	9	4.5
<b>Total</b>	<b>198</b>	<b>100.0</b>

#### 4.3.6 Number of Children

As indicated by table 4.6 below, slightly less than half (98, 49.5%) of the respondents had one child while, (1, 0.5%) had 5 children. However, more than a third (70, 35.4%) of the respondents were gravid for the first time.

**Table 4.6: Number of Children**

<b>Indicators</b>	<b>Details</b>	<b>Frequency</b>	<b>Percentage</b>
<b>No. of Children</b>	1	98	49.5
	2	17	8.6
	3	6	3
	4	5	2.5
	5	1	0.5
	None	70	35.4

**4.3.7 Pregnancy gestation**

Regarding gestation period, about a third (60, 30.3%) of pregnant women were in their 1<sup>st</sup> -5<sup>th</sup> week of gestation, while (6, 3%) were in their 36<sup>th</sup> -40<sup>th</sup> week. This is as shown by table 4.7 below.

**Table 4.7: Gestation of the current pregnancy**

<b>Age of the pregnancy</b>	<b>Frequency</b>	<b>Percentage</b>
1-5 weeks	60	30.3
6-10 weeks	47	23.7
11-15 weeks	20	10.1
16-20 weeks	21	10.6
21-25weeks	10	5.1
26-30 weeks	16	8.1
31-35weeks	18	9.1
36-40 weeks	6	3.0
<b>Total</b>	<b>198</b>	<b>100.0</b>

**4.3.8 Complications during previous pregnancies**

Data in table 4.8 demonstrates whether respondents had complications with their previous pregnancies. Less than half of the respondents (90, 45.5%) reported having had complications with their previous pregnancies while (108, 54.5%) reported no previous pregnancy complications.



**Table 4.8: Complications during previous pregnancies**

<b>Response</b>	<b>Frequency</b>	<b>Percentage</b>
Yes	90	45.5
No	108	54.5
<b>Total</b>	<b>198</b>	<b>100.0</b>

#### **4.3.9 Pregnancy planning**

Table 4.9 indicates that, most (146, 73.7%) of the present pregnancies were planned while a smaller proportion (52, 26.3%) were not.

**Table 4.9: Planning of pregnancy**

<b>Indicators</b>	<b>Frequency</b>	<b>Percentage</b>
Planned	146	73.7
Unintended/unplanned	52	26.3
<b>Total</b>	<b>198</b>	<b>100.0</b>

#### **4.4 Proportion of mothers who achieved timely initiation of ANC.**

All the respondents who initiated their first ANC contact before or within the 1<sup>st</sup> - 12<sup>th</sup> week of pregnancy were termed as having achieved timely initiation of ANC. On the other hand, any women who made their first visit after the 12<sup>th</sup> week of gestation were recorded as having late initiation of ANC. In this respect, more than half (137, 69.2%) achieved timely initiation of ANC while (61, 30.8%) did not. table 4.10 below shows how timely initiation of ANC was achieved.

**Table 4.10: Timely Initiation of ANC**

	<b>1<sup>st</sup> visit within 12 weeks gestation</b>			
	<b>Frequency</b>	<b>Percentage</b>	<b>Valid Percent</b>	<b>Cumulative Percent</b>
NO	61	30.8	30.8	30.8
YES	137	69.2	69.2	100
<b>Total</b>	<b>198</b>	<b>100</b>	<b>100</b>	

#### **4.5 Support to the respondents during pregnancy.**

Majority (167, 84.3%) of the respondents were supported financially by their spouses/partners and/or their close family while (31, 15.7%) were not. In response to the best person to advise on ANC; half of the respondents, (99, 50%) said the best person was their partner while, (1, 0.5%) preferred religious leaders. Responding on spouse/partners' company during ANC, more than half (156, 78.8%) were not accompanied while (42, 21.2%) were accompanied. In response to the reasons for unavailability of the partners company majority (137, 69.2%) reported partner's lack of time, while (3, 1.5%) talked of the spouse/partner working far from home. This is demonstrated by table 4.11 below.

**Table 4.11: Diverse support during pregnancy**

	<b>Response</b>	<b>Frequency</b>	<b>Percent</b>
<b>Support by spouse/partner</b>	<b>Yes</b>	167	84.3
	<b>No</b>	31	15.7
<b>Total</b>		<b>198</b>	<b>100.0</b>
<b>Advisor on ANC</b>	Spouse	99	50.0
	Biological Mother	27	13.6
	Mother in-law	12	6.1
	Sister	2	1.0
	Religious leader	1	.5
	CWH	54	27.3
	Friends	3	1.5
	<b>Total</b>		<b>198</b>
<b>Reasons for starting ANC late</b>	Lack of time	137	69.2
	Ignorance on when to start ANC	41	20.7
	Ignorance	16	8.0
	Lack transport money	3	1.5
	Misunderstandings	1	.5
	<b>Total</b>		<b>198</b>
<b>Why spouse/partner didn't accompany</b>	Lack of time	156	78.8
	Working far from home	3	1.5
	No reasonable answer	39	19.7
<b>Total</b>		<b>198</b>	<b>100.0</b>

#### **4.6 Clients perception on sociodemographic factors and ANC utilization**

As demonstrated by the qualitative data results, the major causes of late initiation of ANC were; unborn child welfare, being busy and lack of time, ignorance and spousal misunderstandings as shown by table 4.12 below.

**Table 4.12: Causes of late ANC initiation.**

<b>Themes</b>	<b>Sub-Themes</b>	<b>References</b>	<b>Verbatim Statements</b>
	Unborn child welfare	25	To ensure the child’s health before birth (respondent 2;FDG 4)
Causes of late initiation of ANC	Being busy and lack of time	25	Some are too busy with other daily living activities (respondent 1;FDG 1)
	Ignorance	20	Most don’t know the right time to initiate ANC (respondent 3;FDG 4)
	Spousal misunderstandings	15	Sometimes misunderstandings with spouses hence not given money to go to hospital (respondent 2;FDG 5)

**4.7 Why the married women initiate ANC early;**

Support from the spouses, biological mothers and mothers-in-law and not being ashamed of the pregnancy were the major reason why the married women initiated ANC early. table 4.3 indicates this with the references.

**Table 4.13: Why the married women initiate ANC early.**

<b>Themes</b>	<b>Sub-Themes</b>	<b>References</b>	<b>Verbatim Statements</b>
Why the married women initiate ANC early	Support from the spouses, biological mothers and mothers-in-law	38	Some get social and financial support from their partners, biological mothers, mothers-in-law among others (respondent 3;FDG 4)
	No shame with the pregnancy	20	Because they are not ashamed of the pregnancy (respondent 1;FDG 5)

#### **4.8 Relationship between Social demographic factors and timely initiation of ANC.**

On crosstabulation of the social demographic factors and timely initiation of ANC, there was a statistically significant relationship between age and timely initiation of ANC. The chi-square obtained was 14.949 with a degree of freedom (DF) of 3 and  $p = 0.002$ . The rest of the social demographic variables did not have any significant relationship with timely initiation of ANC. This is as indicated by table 4.14.

**Table 4.14: Relationship between Social demographic factors and timely initiation of ANC**

		Age of respondents					Total	Chi-square	Df	P-value
Timely initiation of ANC		10-20 yrs	21-30yrs	31-40yrs	41-50yr					
	NO	2	34	24	1	61				
	YES	28	81	27	1	137	14.949	3	0.002	
	<b>Total</b>	<b>30</b>	<b>115</b>	<b>52</b>	<b>2</b>	<b>198</b>				
<b>Marital status</b>										
Timely initiation of ANC		Married	Single	Separated/divorced						
	NO	47	8	6		61				
	YES	99	24	14		137	0.644	2	0.725	
	<b>Total</b>	<b>146</b>	<b>32</b>	<b>20</b>		<b>198</b>				
<b>Education level</b>										
Timely initiation of ANC		Primary	Secondary	College/university	None					
	NO	4	12	17	28	61				
	YES	13	34	35	55	137	1.324	3	0.724	
	<b>Total</b>	<b>17</b>	<b>46</b>	<b>52</b>	<b>83</b>	<b>198</b>				
<b>Religion</b>										
Timely initiation of ANC		Muslims	Christians	Others						
	NO	8	51	2		61				
	YES	16	113	8		137	0.626	2	0.731	
	<b>Total</b>	<b>24</b>	<b>164</b>	<b>10</b>		<b>198</b>				
<b>Parity</b>										
Timely initiation of ANC		1	2	3	4	5	None			
	NO	32	4	4	1	1	19	61		
	YES	66	14	2	4	0	51	137	7.359	
	<b>Total</b>	<b>98</b>	<b>18</b>	<b>6</b>	<b>5</b>	<b>1</b>	<b>70</b>	<b>198</b>	5	

<b>Number of pregnancies</b>												
Timely initiation of ANC		1	2	3	4	5	6 & >	None				
NO		32	14	6	4	1	3	1	61			
YES		70	25	17	3	2	6	14	137	7.144	6	0.308
<b>Total</b>		<b>102</b>	<b>39</b>	<b>23</b>	<b>7</b>	<b>3</b>	<b>9</b>	<b>15</b>	<b>198</b>			
<b>Previous pregnancy complications</b>												
Timely initiation of ANC			Yes				No					
NO			25				36		61			
YES			65				72		137	0.711	1	0.399
<b>Total</b>			<b>90</b>				<b>108</b>		<b>198</b>			
<b>Pregnancy planning</b>												
Timely initiation of ANC			Yes				No					
NO			49				12		61			
YES			97				40		137	1.977	1	0.16
<b>Total</b>			<b>146</b>				<b>52</b>		<b>198</b>			

#### 4.9 Binary Logistic regression between Age and Timely initiation of ANC

As indicated by table 4.15 below, there was a statistically significant relationship between the age of the client and timely initiation of ANC. The odds of making a timely ANC visit was reduced by 61.4% with every increase of age by one year ( $p = <0.001$ ). This means that the young the woman was, the high the probability of timely initiation of ANC.

**Table 4.15: Binary Logistic regression between Age and Timely initiation of ANC**

		<b>B</b>	<b>S.E.</b>	<b>Wald</b>	<b>Df</b>	<b>Sig.</b>	<b>OR</b>
<b>Step 1a</b>	Age	-0.951	0.259	13.517	1	<0.001	0.386
	Constant	2.901	0.607	22.84	1	<0.001	18.197

**Variable(s) entered on step 1: age.**

#### 4.10 Relationship between economic factors and timely initiation of ANC

As indicated on table 4.16, there was no significant relationship between economic factors and timely initiation of ANC ( $p>0.05$ ).



**Table 4.16: Relationship between economic factors and timely initiation of ANC**

		Employment status						Total	Chi-square	Df	P.value
Timely		Unemployed			Employed private/public						
Initiation of	NO		32			29	61	1.604	1	0.205	
ANC	YES		85			52	137				
	<b>Total</b>		<b>117</b>			<b>81</b>	<b>198</b>				
<b>Monthly income in Ksh</b>											
Timely		1,000-	11,000-	21,000-	31,000-	41,000-	Above				
Initiation of		10,000	20,000	30,000	40,000	50,000	50,000				
ANC	NO	30	19	4	2	4	2	61	5.258	5	0.385
	YES	85	39	5	2	3	3	137			
	<b>Total</b>	<b>115</b>	<b>58</b>	<b>9</b>	<b>4</b>	<b>7</b>	<b>5</b>	<b>198</b>			
<b>Family business</b>											
Timely			YES			NO					
Initiation of	NO		30			31		61	0.368	1	0.544
ANC	YES		61			76		137			
	<b>Total</b>		<b>91</b>			<b>107</b>		<b>198</b>			
<b>Existence of other dependents</b>											
Timely			YES			NO					
Initiation of	NO		33			28		61	2.982	1	0.544
ANC	YES		56			81		137			
	<b>Total</b>		<b>89</b>			<b>109</b>		<b>198</b>			
<b>Possession of an insurance cover</b>											
Timely			Yes			No					
Initiation	NO		52			9		61	2.845	1	0.092
of ANC	YES		102			35		137			
	<b>Total</b>		<b>154</b>			<b>44</b>		<b>198</b>			

**Transport cost per month in Ksh**

Timely		Below 1000	1001-2000	2001-3000				
Initiation of	NO	53	7	1	61	3.847	1	0.146
ANC	YES	111	26	0	137			
	<b>Total</b>	<b>164</b>	<b>33</b>	<b>1</b>	<b>198</b>			

**Place of delivery**

Timely		Hospital	Home					
Initiation of	NO	60	1	61	0.009	1	0.924	
ANC	YES	135	2	137				
	<b>Total</b>	<b>195</b>	<b>3</b>	<b>198</b>				

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#### 4.11 Relationship between health facility factors and timely initiation of ANC

Upon the cross tabulation of the health facility factors and timely initiation of ANC, only waiting time as a variable had a statistically significant relationship with timely initiation of ANC. ( $p = 0.019$ ). The chi-square obtained was 7.975 with a degree of freedom (df) of 2 and  $p = 0.019$ .

#### 4.12 Relationship between time taken to hospital and timely initiation of ANC

Most of the respondents (165, 83.3%) took less than 30 minutes to reach the hospital while only (1, 0.5%) took 4 hours. The chi-square obtained was 8.945 with a degree of freedom (df) of 4 and  $p = 0.062$ . There was therefore no statistically significant relationship between time taken to hospital and timely initiation of ANC as indicated by table 4.17.

**Table 4.17: Relationship between time taken to hospital and timely initiation of ANC**

Timely Initiation of ANC		Time taken to reach the hospital					Total	Chi-Square	Df	P-value
		<30 minutes	1 hour	2 hours	3 hours	4 hours				
	NO	49	7	2	2	1	<b>61</b>	8.945	4	0.062
	YES	116	20	1	0	0				
	<b>Total</b>	<b>165</b>	<b>27</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>198</b>			

#### 4.13 Relationship between time taken to be attended and timely initiation of ANC

Majority of the respondents (132, 66.7%) said they took too long to be attended at the hospital while (24, 12.1%) said they took a short time to be attended. The chi-square obtained was 7.975 with a degree of freedom (df) of 2 and  $p =$  value of 0.019. There was therefore a statistically significant relationship between time taken to be attended at the hospital and timely initiation of ANC. This is shown by table 4.18.

**Table 4.18: Relationship between time taken to be attended and timely initiation of ANC**

		Time taken to be attended at the hospital			Total	Chi-square	Df	P-value
		Too Long	Long	Short				
Timely Initiation of ANC	NO	49	9	3	<b>61</b>	7.975	2	<b>0.019</b>
	YES	83	33	21	<b>137</b>			
	<b>Total</b>	<b>132</b>	<b>42</b>	<b>24</b>	<b>198</b>			

#### 4.14 Rating of Services at the health facility.

Most of the respondents (130, 65.7%) rated the services provided as very satisfactory while (3, 1.5%) rated the services provided as very unsatisfactory. Table 4.19 indicates the rating of services.

**Table 4.19: Rating of Services at the health facility.**

Indicators	Frequency	Percent	Valid Percent	Cumulative Percent	95% Confidence Interval	
					Lower	Upper
Very Satisfactory	130	65.7	65.7	65.7	58.6	72.7
Satisfactory	50	25.3	25.3	90.9	19.2	31.8
Neither satisfactory nor unsatisfactory	15	7.6	7.6	98.5	4	11.6
Very unsatisfactory	3	1.5	1.5	100	0	3.5
<b>Total</b>	<b>198</b>	<b>100</b>	<b>100</b>		<b>100</b>	<b>100</b>

#### 4.15 Binary logistic regression between waiting time and timely initiation of ANC

Table 4.20 indicates that, there was a statistically significant relationship between the time taken to be attended at the hospital and timely initiation of ANC. The clients who said they took too long to be attended at the clinic were 75.8% less likely to initiate timely ANC visit as compared to those who said that it took shorter time to be attended ( $p = 0.024$ )

**Table 4.20: Binary logistic regression between waiting time and timely initiation of ANC**

		<b>B</b>	<b>S.E.</b>	<b>Wald</b>	<b>Df</b>	<b>Sig.</b>	<b>OR</b>
<b>Step 1a</b>	Rate			7.419	2	0.024	
	Too long	-1.419	0.643	4.87	1	0.027	0.242
	Long	-0.647	0.723	0.8	1	0.371	0.524
	Constant	1.946	0.617	9.94	1	0.002	7

#### **4.16 Reasons for long waiting at the health facility**

Table 4.21 shows the FGD responses as; large number of clients, few health workers in the health facility and Health workers' negative attitude.

**Table 4.21: Reasons for long waiting at the health facility**

<b>Themes</b>	<b>Sub-Themes</b>	<b>References</b>	<b>Verbatim Statements</b>
Reasons for long waiting at the health facility	Large number of clients	38	Because of the huge number of the people seeking services in the hospital (respondent 3; FDG 3)
	Few health workers in the health facility	25	Due to the shortage of health care workers (respondent 3; FDG 1)
	Health workers' negative attitude	15	Some healthcare providers have negative attitude towards the clients. (respondent 1; FDG 2)

## **CHAPTER FIVE;**

### **DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS**

#### **5.1 Introduction**

This chapter provides research discussion, conclusions, and recommendations of the study findings and areas of further studies.

#### **5.2 Discussion;**

##### **5.2.1 Proportion of the pregnant mothers who achieved timely initiation of ANC.**

The Kenya Demographic and Health Survey 2014 report documents that, only a small proportion of the expectant women initiate ANC within their initial trimester. The timing of ANC denotes more to insufficient ANC uptake than does the number of contacts. According to the WHO recommendations, this study recorded all the pregnant women who made their principal ANC visit before or within 12<sup>th</sup> week of their pregnancy as having achieved timely initiation of ANC. In this respect, more than half (137, 69.2%) attained timely initiation while (61, 30.8%) did not. On the other hand understandably, any pregnant woman who initiated her first ANC visit after 12<sup>th</sup> week of gestation was recorded as having initiated ANC late. These results were comparable with a study conducted in the United States where approximately five out of six mothers (84%) initiated ANC during their first trimester (Low, 2005). The study also compared with a research done in Caribbean and Latin America which reported 70% attendance while North Africa and the Middle East regions reported 68%. In Asia, 50% attendance was indicated while an attendance of only 24% was documented in the Sub-Saharan region (Abou-Zahr et al., 2003).

### **5.2.2 Social Demographic Factors and their association with timely initiation of ANC.**

There was a statistically significant relationship between the age of the clients and timely initiation of ANC. The odds of making a timely ANC visit was reduced by 61.4% with every increase in age by one year ( $p = <0.001$ ). These findings concurred with a study done in a Northwest Ethiopia health facilities whereby mothers of age less than or equal to 25 years were found to be more likely to initiate ANC early, as compared to others (Tesfu et al., 2022). On the contrary, a study done in rural Southern Ghana showed that; the age of a pregnant woman was considerably related with timing of ANC visit amongst primigravidas. In that study, older women tended to start ANC visit in the first trimester as likened to the younger women (Manyeh et al., 2020). This research also found that most of the pregnant women were married and they initiated ANC early. The findings were similar with a South Africa study which documented that women who were married were more probable to start antenatal care earlier than the unmarried (Ebonwu et al., 2018). However in this study, there was no significant relationship between marital status and early initiation of ANC. It was the wish of the expectant mothers to be accompanied by their partners to ANC. Lack of support from husbands or partners was associated with late initiation of ANC for both the adolescents and adult women. This was similar to results of a study done in Tanzania, where women who received no support from their spouses or partners started ANC almost three weeks later than those who were supported. (Mgata & Maluka., 2019). Likewise, the uptake of ANC was nearly nine times more for women who reported their husbands' approval for ANC than women whose husbands did not approve (Ali et al., 2018). The findings also noted that there were some linkage between education and antenatal care though not statistically significant. The more literate the women were, the earlier they initiated ANC. Previous studies have exposed that low educational level is connected to reduced uptake of ANC services (Gebremeskel, et al., 2015). More than half of the respondents did not have advanced education. They had either secondary school education or primary level education. They relied on information from their partners, mothers, mothers-in-law and religious leaders among others. This is further,

supported by a study done at Mwaluphamba and Kizibe dispensaries in Kwale District in Kenya. The results there revealed that low education level and high parity are some of the factors that affect timely initiation and utilization of ANC (Wekesa et al., 2018) Religious faith was not a major indicator of early initiation and utilization of ANC. This contradicted a study done in the rural and urban setting in South Africa, which reported that psychosocial aspects such as pregnancy desire, religious grounding and partner characteristics e.g. age and education level, were more probable to be linked with timing of ANC initiation, compared to community level measures, like social funding and social capital (Muhwava et al., 2016). The results also contradicted a study done in Malawi that found that; religious opinions influenced a mother's resolve to seek ANC. The pregnant mothers acknowledged that some religious assemblies encouraged their worshippers to get care from the pastoral staff as an alternative to the hospital. These Women were not constantly sure which churches endorsed this message but a number of them assumed the Apostolic and Church of Christ partook in this practice (Roberts et al., 2017).

It was noted that the expectant mothers who started their ANC late were less than half of the sampled respondents. Initiating the ANC visits early may have been contributed by the support received from parents, in-laws, friends and partners among other persons. The support may be the reason as to why more than three quarter of the respondents indicated that they had planned their pregnancies and some respondent were aware on when a woman should initiate the first ANC visit. The findings of this study were in line with those by (Nattey et al., 2018) who found that women who had support from husbands, had better outcomes during pregnancy and were probably more likely to initiate ANC early as likened to those who received support from their other family. The planning of pregnancies may have contributed to early initiation and utilization of ANC. Booking of the ANC clinic late may show poor planning and may contribute to wrongly timing of the first antenatal care visit.

Previous complications in pregnancies were associated with early initiation of ANC. This was comparable with the (Ali et al., 2020) study that was done among the ANC mothers from the United Arab Emirates which showed that, the educated pregnant mothers and



those who had preceding infertility treatment or prior abortions were all more likely to attain apt ANC initiation (Nasloo et al., 2020). This also concurred with a study that was done among the health care givers in a Maternal Obstetrics Units (MOU) and Primary Healthcare Centres (PHC) in Gauteng South Africa. Another study showed that patients' individual factors like having a history of abortions, obstetric complications, and nulliparity are related with early ANC initiation (Jinga, et al., 2019).

Most of the women were aware of the specific time they were supposed to start their ANC while another group did not seem to be sure of the starting time. They also had different preference on advisers. Money for transport was mentioned as an economic challenge which seemed a factor of starting antenatal care late. In this regards, there was no enough money to pay for the trips to and fro the hospital for ANC services and therefore, some chose to make one or two before delivery which means they started ANC very late. Most men were not able to accompany their spouses for ANC clinics because they were engaged far from home by economic and social activities. Others felt it's the responsibility of a woman to go for ANC clinics while others saw it as a shame to go for such activities. All in all this study found that 80% of the women received support during their pregnancy.

### **5.2.3 Economic factors and their association with timely initiation of ANC.**

There was no statistically significant association between economic factors and timely initiation of ANC. Some respondents were reported to have started their ANC late due to lack of finances and external financial support. In support of this, the collected data exhibited that slightly more than half (59.1%) of the study respondents were unemployed. This could be the reason there was poor timely initiation of antenatal care to some mothers compared to 40.9% of the respondents who were employed in both public and private sectors. Women who had an average household income less than Ksh 10,000 had a higher probability of initiating ANC late when evaluated against their counterparts who had a higher income. This is because a woman is required to spend money on transport, lunch and buying mother dresses among other expenses. In this regard, employed women may have a greater chance of starting ANC early as compared to those who are not employed.

The findings in this study indicated that the employed had a higher prospect of starting ANC early as compared to those who were not. These findings were similar with a study by (Gulema et al., 2017) who found that women who had an average household income less than two thousand Ethiopian Birr had a higher likelihood of initiating late when evaluated against their counterparts who had a higher income. Those who were not employed received support from their partners, parents, friends or religious leaders. The findings of this study concurred with the findings by (Kisuule et al., 2013) at Mulango Hospital, Kampala, who reported that most pregnant women had no money to go to the health facility, while others assumed that antenatal care services needed to be paid for. The findings of this study also showed no difference with those published by (Abimbola et al., 2016).

Family business was one of the sources of income and this enabled the respondents to cater for several expenses. This also showed that they had good planning as well as good advisers on the financial solution through insurance cover.

#### **5.2.4 Health facility factors and their association with timely initiation of ANC.**

There was a statistically significant relationship between the time taken to be attended at the hospital and timely initiation of ANC. The client who said they took too long to be attended at the clinic were 76% less likely to initiate timely ANC contact as compared to those who said that it took shorter time to be attended ( $p = 0.024$ ). This agreed with a research done in a multi-ethnic sample in South Auckland, New Zealand which showed that spending long time in waiting rooms during antenatal visits and appointments was a determining factor in timely initiation of ANC (Corbett et al., 2014). For example, those who were delivering for the second time and above indicated that waiting time was critical in determining whether many would start ANC early. The findings of this study were supported by (Nwaneri et al., 2018) whose study showed that, in South East Nigeria, extended waiting time and numerous ANC follow up program as institutional/systemic dynamics were accountable for delayed booking. It also corresponded with another study in the same region - South East Nigeria which established that extended waiting time and

numerous ANC follow up visits as institutionally programed, were accountable for poor timely booking for ANC (Nwaneri et al., 2018).

When seeking services in the hospital, the respondents indicated that some health service providers were friendly while others were not. Males were considered friendlier compared to female health workers. The respondents indicated that the services provided in the hospital as at then were not enough; others said the services were not badly off while others said the services were 50% satisfactory

### **5.3 Conclusion**

- Based on the study findings, the following conclusions were arrived at:
- Majority (137, 69.2%) of the pregnant women achieved timely initiation of ANC. However even the few (61, 30.8%) that did not achieve matters.
- Age as a social demographic factor had a statistically significant relationship with timely ANC initiation.
- None of the assessed economic factors had any statistically significant relationship with timely initiation of ANC.
- The waiting time at the hospital before being attended by the health workers was the only variable among the health facility factors that had a statistically significant relationship with timely initiation of ANC.

## **5.4 Recommendations**

The study recommends were as follows:

- Aggressive creation of awareness on the importance of timely initiation of ANC as per WHO recommendations by the ministry of health, county government and the community at large.
- Training of subordinate staff in filling the clients' bio data and taking vital signs as a measure to reduce on the clients waiting time at the health facilities.
- Further studies on;
- Cultural influence on timely initiation of ANC
- Men's perception and involvement in pregnancy and ANC

## REFERENCES

- Abebe, T., Letta, S., Gebrehana, E., & Feyera, B. (2017). Timely Booking and Factors Associated with First Antenatal Care Attendance among Pregnant Women in Public Health Centers, Addis Ababa. *East African Journal of Health and Biomedical Sciences*, 1(2), 21-28.
- Abimbola, J. M., Makanjuola, A. T., Ganiyu, S. A., Babatunde, U. M. M., Adekunle, D. K., & Olatayo, A. A. (2016). Pattern of utilization of ante-natal and delivery services in a semi-urban community of North-Central Nigeria. *African health sciences*, 16(4), 962-971.
- Abou-Zahr, C. L., Wardlaw, T. M., & World Health Organization. (2003). Antenatal care in developing countries: promises, achievements and missed opportunities: an analysis of trends, levels and differentials, 1990-2001..
- Ali, N., Elbarazi, I., Alabboud, S., Al-Maskari, F., Loney, T., & Ahmed, L. A. (2020). Antenatal Care Initiation Among Pregnant Women in the United Arab Emirates: The Mutaba'ah Study. *Frontiers in public health*, 8, 211. <https://doi.org/10.3389/fpubh.2020.00211>
- Ali, S. A., Dero, A. A., Ali, S. A., & Ali, G. B. (2018). Factors affecting the utilization of antenatal care among pregnant women: a literature review. *J Preg Neonatal Med*, 2(2).
- Benova, L., Tunçalp, Ö., Moran, A. C., & Campbell, O. M. R. (2018). Not just a number: examining coverage and content of antenatal care in low-income and middle-income countries. *BMJ global health*, 3(2), e000779.
- Bhaskar, R. K., Deo, K. K., Neupane, U., Chaudhary Bhaskar, S., Yadav, B. K., Pokharel, H. P., & Pokharel, P. K. (2015). A case control study on risk factors associated

with low birth weight babies in Eastern Nepal. *International journal of pediatrics*, 2015.

Castillo, R., Castillo, E., Guerra, R., Johnson, V. E., McPhail, T., Garg, A. K., & Guerrero, T. (2009). A framework for evaluation of deformable image registration spatial accuracy using large landmark point sets. *Physics in Medicine & Biology*, *54*(7), 1849.

Chewe, M. M., Muleya, M. C., & Maimbolwa, M. (2016). Factors associated with late antenatal care booking among pregnant women in Ndola District, Zambia. *African Journal of Midwifery and Women's Health*, *10*(4), 169-178.

Chimatiro, C. S., Hajison, P., Chipeta, E., & Muula, A. S. (2018). Understanding barriers preventing pregnant women from starting antenatal clinic in the first trimester of pregnancy in Ntcheu District-Malawi. *Reproductive health*, *15*(1), 158.

Chitimbe E. Determinants of utilization of antenatal health care services by pregnant mothers during the first trimester in Nsanje. 2006.da Fonseca, C. R. B., Strufaldi, M. W. L., de Carvalho, L. R., & Puccini, R. F. (2014). Adequacy of antenatal care and its relationship with low birth weight in Botucatu, São Paulo, Brazil: a case-control study. *BMC pregnancy and childbirth*, *14*(1), 255.

Corbett, S., Chelimo, C., & Okesene-Gafa, K. (2014). Barriers to early initiation of antenatal care in a multi-ethnic sample in South Auckland, New Zealand. *NZ Med J*, *127*(1404), 53-61.

Da fonseca, C.R.B., Strufaldi, M.W.L., deCarvalho, L.R., & Puccini. R.F.(2014).Adequacy of antenatal care and its relationship with low birth weight in Botucatu, Sao Paulo, Brazil: a case control- study *BMC pregnancy and child birth*,*14*(1), 1-12

- Dennis, M. L., Benova, L., Abuya, T., Quartagno, M., Bellows, B., & Campbell, O. M. (2019). Initiation and continuity of maternal healthcare: examining the role of vouchers and user-fee removal on maternal health service use in Kenya. *Health Policy and Planning*, 34(2), 120-131.
- Drammeh, B., Hsieh, C. J., Liu, C. Y., & Kao, C. H. (2018). Predictors of antenatal care booking among pregnant women in The Gambia. *African Journal of Midwifery and Women's Health*, 12(2), 65-71.
- Ebonwu, J., Mumbauer, A., Uys, M., Wainberg, M. L., & Medina-Marino, A. (2018). Determinants of late antenatal care presentation in rural and peri-urban communities in South Africa: A cross-sectional study. *PloS one*, 13(3), e0191903
- Friedman, M. (1974). *Treating Type A behavior and your heart. Fawcett Crest.*
- Eliphas Gitonga, "Determinants of Focused Antenatal Care Uptake among Women in Tharaka Nithi County, Kenya", *Advances in Public Health*, vol. 2017, Article ID 3685401, 4 pages, 2017.
- Galadanci, H. S., Ejembi, C. L., Iliyasu, Z., Alagh, B., & Umar, U. S. (2007). Maternal health in Northern Nigeria—a far cry from ideal. *BJOG: An International Journal of Obstetrics & Gynaecology*, 114(4), 448-452.
- Gashaw, B. T., Magnus, J. H., & Schei, B. (2018). Intimate partner violence and late entry into antenatal care in Ethiopia. *Women and Birth*
- Gathuto, M.N. (2014). Factors influencing male participation in antenatal care in Kenya:a case of Kenyatta national hospital, Nairobi, Kenya.
- Gebremeskel, F., Dibaba, Y., & Admassu, B. (2015). Timing of first antenatal care attendance and associated factors among pregnant women in Arba Minch

Town and Arba Minch District, Gamo Gofa Zone, South Ethiopia. *Journal of environmental and public health*, 2015.

Gulema, H., & Berhane, Y. (2017). Timing of First Antenatal Care Visit and its Associated Factors among Pregnant Women Attending Public Health Facilities in Addis Ababa, Ethiopia. *Ethiopian journal of health sciences*, 27(2), 139–146. <https://doi.org/10.4314/ejhs.v27i2>.

Horwood, C., Haskins, L., Vermaak, K., Phakathi, S., Subbaye, R., & Doherty, T. (2010). Prevention of mother to child transmission of HIV (PMTCT) programme in KwaZulu-Natal, South Africa: an evaluation of PMTCT implementation and integration into routine maternal, child and women's health services. *Tropical Medicine & International Health*, 15(9), 992-999.

Jinga, N., Mongwenyana, C., Moolla, A. *et al.* Reasons for late presentation for antenatal care, healthcare providers' perspective. *BMC Health Serv Res* **19**, 1016 (2019).

Kaswa, R., Rupesinghe, G. F. D., & Longo-Mbenza, B. (2018). Exploring the pregnant women's perspective of late booking of antenatal care services at Mbekweni Health Centre in Eastern Cape, South Africa. *African journal of primary health care & family medicine*, 10(1), e1–e9.

Kenya National Bureau of Statistics (KNBS) and ICF Macro. 2015. *The 2014 Kenya Demographic and Health Survey*. Calverton, Maryland: KNBS and ICF Macro

Kilowua, L. M., & Otieno, K. O. (2019). Health System Factors Affecting Uptake of Antenatal Care by Women of Reproductive Age in Kisumu County, Kenya. *International Journal of Public Health and Epidemiology Research*, 5(2), 119-124.



- Kisuule, I., Kaye, D.K., Najjuka, F. *et al.* Timing and reasons for coming late for the first antenatal care visit by pregnant women at Mulago hospital, Kampala Uganda. *BMC Pregnancy Childbirth* **13**, 121 (2013).
- Kithua, A. M. (2015). *Determinants of utilization of antenatal care services by mothers: a case of Kitui district hospital, Kitui county, Kenya* (Doctoral dissertation, University of Nairobi).
- Low, P., Paterson, J., Wouldes, T., Carter, S., Williams, M., & Percival, T. (2005). Factors affecting antenatal care attendance by mothers of Pacific infants living in New Zealand.
- Manyeh, A. K., Amu, A., Williams, J., & Gyapong, M. (2020). Factors associated with the timing of antenatal clinic attendance among first-time mothers in rural southern Ghana. *BMC pregnancy and childbirth*, *20*(1), 1-7.
- McCormick, M. C., & Siegel, J. E. (2001). Recent evidence on the effectiveness of prenatal care. *Ambulatory Pediatrics*, *1*(6), 321-325.
- Mgata, S., & Maluka, S. O. (2019). Factors for late initiation of antenatal care in Dar es Salaam, Tanzania: A qualitative study. *BMC Pregnancy and Childbirth*, *19*, 1-9.
- Mkandawire, P., Atari, O., Kangmennaang, J., Arku, G., Luginaah, I., & Etowa, J. (2019). Pregnancy intention and gestational age at first antenatal care (ANC) visit in Rwanda. *Midwifery*, *68*, 30-38.
- Mugenda, O. M., & Mugenda, A. G. (2003). *Research methods: Quantitative & qualitative approaches* (Vol. 2, No. 2). Nairobi: Acts press.
- Muhwava, L.S., Morojele, N. & London, L. Psychosocial factors associated with early initiation and frequency of antenatal care (ANC) visits in a rural and urban

setting in South Africa: a cross-sectional survey. *BMC Pregnancy Childbirth* **16**, 18 (2016). <https://doi.org/10.1186/s12884-016-0807-1>

Mutai, K. T., & Otieno, G. O. (2021). Utilization of focused antenatal care among expectant women in Murang'a County, Kenya. *The Pan African medical journal*, *39*, 23.

Nasloon, A., Iffat, E., Souha A., Fatima, A., Tom, L., & Luai, A. A (2020) *Antenatal Care Initiation among Pregnant Women in the United Arab Emirates: The Mutaba'ah Study*

Natthey, C., Jinga, N., Mongwenyana, C., Mokhele, I., Mohomi, G., Fox, M. P., & Onoya, D. (2018). Understanding Predictors of Early Antenatal Care Initiation in Relationship to Timing of HIV Diagnosis in South Africa. *AIDS patient care and STDs*, *32*(6), 251-256.

Nikiéma, B., Beninguise, G., & Haggerty, J. L. (2009). Providing information on pregnancy complications during antenatal visits: unmet educational needs in sub-Saharan Africa. *Health policy and planning*, *24*(5), 367-376.

Nwaneri, A.C., Ndubuisi, I.F., Okoronkwo, I.L., Ezike, O.C., & Nkiruka, U. (2018). Determinants of late booking for antenatal care among pregnant women in selected hospitals in South East Nigeria. *International Journal of Nursing*, *10*, 74-80.

Nyondo, A. L., Chimwaza, A. F., & Muula, A. S. (2014). Stakeholders' perceptions on factors influencing male involvement in prevention of mother to child transmission of HIV services in Blantyre, Malawi. *BMC Public Health*, *14*(1), 691.

Oakley, L., Gray, R., Kurinczuk, J. J., Brocklehurst, P., & Hollowell, J. (2009). A systematic review of the effectiveness of interventions to increase the early

initiation of antenatal care in socially disadvantaged and vulnerable women. *Final report. National Perinatal Epidemiology Unit, University of Oxford.*

Paudel, Y. R., Jha, T., & Mehata, S. (2017). Timing of first antenatal care (ANC) and inequalities in early initiation of ANC in Nepal. *Frontiers in public health, 5*, 242.

Ragolane, Victoria Joyce (2017) Factors contributing to late antenatal care booking in Mopani District of Limpopo Province, University of South Africa, Pretoria,

Roberts, J., Hopp Marshak, H., Sealy, D. A., Manda-Taylor, L., Mataya, R., & Gleason, P. (2017). The role of cultural beliefs in accessing antenatal care in Malawi: a qualitative study. *Public Health Nursing, 34*(1), 42-49.

Stern, J., Salih Joelsson, L., Tydén, T., Berglund, A., Ekstrand, M., Hegaard, H., ... & Kristiansson, P. (2016). Is pregnancy planning associated with background characteristics and pregnancy-planning behavior?. *Acta obstetricia et gynecologica Scandinavica, 95*(2), 182-189.

Tekelab, T., & Berhanu, B. (2014). Factors associated with late initiation of antenatal care among pregnant women attending antenatal Clinic at Public Health Centers in Kembata Tembaro zone, southern Ethiopia. *Science, Technology and Arts Research Journal, 3*(1), 108-115.

Tesfaye, G., Loxton, D., Chojenta, C., Semahegn, A., & Smith, R. (2017). Delayed initiation of antenatal care and associated factors in Ethiopia: a systematic review and meta-analysis. *Reproductive health, 14*, 1-17.

Tesfu, A. A., Aweke, A. M., Gela, G. B., Wudineh, K. G., & Beyene, F. Y. (2022). Factors associated with timely initiation of antenatal care among pregnant women in Bahir Dar city, Northwest Ethiopia: Cross-sectional study. *Nursing open, 9*(2), 1210–1217.

- Thapa, D. K., & Niehof, A. (2013). Women's autonomy and husbands' involvement in maternal health care in Nepal. *Social Science & Medicine*, 93, 1-10.
- Tsegaye, B., & Ayalew, M. (2020). Prevalence and factors associated with antenatal care utilization in Ethiopia: an evidence from demographic health survey 2016. *BMC Pregnancy and Childbirth*, 20(1), 1-9.
- Tufa, G., Tsegaye, R., & Seyoum, D. (2020). Factors associated with timely antenatal care booking among pregnant women in remote area of bule hora district, Southern Ethiopia. *International Journal of Women's Health*, 657-666.
- Wekesa, N. M., Wanjihia, V., Makokha, A., Lihana, R. W., Ngeresa, J. A., Kaneko, S., & Karama, M. (2018). High Parity and Low Education are Predictors of Late Antenatal Care initiation among Women in Maternal and Child Health Clinics in Kwale County, Kenya. *Journal of Health, Medicine and Nursing*, 50, 1-11.
- World Health Organization. (WHO, 2016). WHO recommendations on antenatal care for a positive pregnancy experience. World Health Organization. Retrieved from <https://apps.who.int/iris/handle/10665/250796>
- World Health Organization. (WHO, 2018). *WHO recommendations on antenatal care for a positive pregnancy experience: summary: highlights and key messages from the World Health Organization's 2016 global recommendations for routine antenatal care* (No. WHO/RHR/18.02). World Health Organization.

## APPENDICES

### Appendix I: Questionnaire

#### **Title of the study**

Determinants of timely initiation of antenatal care among pregnant women attending antenatal clinic at Embu County Referral Hospital, Kenya

#### **Principal Investigator;**

Ann Beatrice Wambui Muthoni

**Instructions;** fill the gaps and put a tick (✓) in the questions with boxes provided.

#### **Institutional affiliation:**

Jomo Kenyatta University of Agriculture and Technology

Date: \_\_\_/ \_\_\_/ \_\_\_ (dd/mm/yyyy)

Code #: \_\_\_\_\_

#### ***Part I Sociodemographic information:***

1. Age: \_\_\_\_\_ years
2. Marital status: 1.  currently married 2. Single 3.  Separated/ Divorced/  
Widowed
3. Education: 1.  No formal education 2.  Primary 3.  Secondary 4.   
College/University
4. Religion: 1.  Muslim 2.  Christian 3.  Other. Specify.....
5. Number of children: \_\_\_\_\_

#### ***Obstetric characteristics***

6. Parity: \_\_\_\_\_
7. Gestation age: \_\_\_\_\_ weeks
8. Previous obstetric complications: 1.  Yes 2.  No
9. Was this pregnancy planned or was it unintended/ unplanned? 1.  Planned 2.   
Unintended/unplanned

***Details on ANC contacts***

10. Is this the first ANC contact? 1.  Yes 2.  No
11. If no; a. how many ANC contacts have you made including the current one?  
\_\_\_\_\_ b. What was the gestation age at first ANC contact? \_\_\_\_\_ weeks
12. When should a pregnant woman attend the first ANC clinic? \_\_\_\_\_ weeks
13. Where did you get this information from? 1.  Partner 2.  Mother 3.   
Mother in law 4.  Sister 5. Religious leader 6.  Community health worker 7.   
Friends 8.  Radio 9.  TV 10.  Other. Specify \_\_\_\_\_
14. If no, what are the reasons?  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
15. Generally, what are the reasons why pregnant mothers in this area start the clinic late? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

***Partner involvement***

16. Has your partner ever accompanied you to ANC clinic during the current pregnancy?

1.  Yes 2.  No

17. If no, what are the reasons?

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18. In your opinion, has the partner been supportive during the current pregnancy? 1.

Yes 2.  No

***Part ii: Economic aspects***

19. Working status: 1.  Unemployed 2.  Employed (Public/Private/Self)

20. Average monthly family income: KSh. \_\_\_\_\_

21. Do you have a family business? 1. Yes 2. No.

22. Do you have other direct dependents? 1. Yes 2. No.

23. Do you have a health insurance cover? 1. Yes 2. No.

24. How much do you use on transport (two ways) when visiting the hospital? KSh.

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***Part iii: Cultural aspects***

25. Did you consult or seek somebody's advice before starting attending ANC clinic? 1.

Yes 2.  No

26. If yes, who did you consult or seek advice from? 1.  Partner 2.  Mother 3.   
Mother in law 4.  Sister 5. Religious leader 6.  Community health worker 7.   
Friends 8.  Other. Specify \_\_\_\_\_

27. Do you need to seek consent or permission in order to start ANC clinic? 1.  Yes 2.  
 No

28. If yes, from who? 1.  Partner 2.  Mother 3.  Mother in law 4.  Sister 5.  
Religious leader 6.  Community health worker 7.  Other. Specify  
\_\_\_\_\_

29. Where would you prefer to deliver? 1. Hospital 2. Home.

***Part iv: Health facility related aspects***

30. How far is the hospital from home: \_\_\_\_\_ kilometers

31. Time taken to reach the hospital from home: \_\_\_\_\_ minutes

32. Rate the time taken to be attended at the hospital. 1.  Too long 2.  Long 3.   
Short

33. Overall, how would you rate the services provided at the clinic? 1.  Very  
satisfactory 2.  Satisfactory 3.  Neither satisfactory nor unsatisfactory 4.   
Unsatisfactory 5.  Very unsatisfactory



## **Appendix II: Questionare Consent Form**

### **Title of Study:**

**Determinants of timely initiation of antenatal care among pregnant women attending antenatal clinic at Embu County Referral Hospital, Kenya**

### **Principal Investigator;**

Ann Beatrice Wambui Muthoni

### **Institutional affiliation:**

Jomo Kenyatta University of Agriculture and Technology

### **Introduction:**

This consent form gives the information needed to decide whether or not to participate in this study. You are permitted to seek clarification about the purpose of this research, your rights as a participant, any possible risks or benefits and whatever else that is unclear concerning the research. If you agree to participate in the study, you will sign your name on this form. You should understand that these general principles apply to all medical researches:

- i) Participation is voluntary
- ii) You may opt out any time without victimization.
- iii) You'll still be served adequately in this facility even if you withdraw from the study participation.

### **WHAT IS THIS STUDY ABOUT?**

The study is searching for the determinants of timely initiation of antenatal care among pregnant women attending antenatal clinic at Embu County Hospital, Kenya

The researcher listed above is interviewing pregnant women attending antenatal care in EL5H only. The purpose of the interview is to find out the determinants of timely initiation of antenatal care among pregnant women attending antenatal clinic at Embu County Hospital, Kenya.

Approximately 247 respondents in this study will be randomly chosen. Your consent will be considered to participate in this study.

**WHAT WILL HAPPEN IF YOU DECIDE TO BE IN THIS RESEARCH STUDY?**

If you resolve to contribute in this research, the following will happen:

A trained interviewer will interview you in an isolated area. The interview will take approximately 20 minutes. Your participation in this study will be kept in confidence and we will use only numbers and not your name. Confidentiality of information obtained from you or from your record will be protected through such processes as using code numbers for concealed identity and soft copy will be protected by use of password to limit the number of people with access to the information.

**ARE THERE ANY RISKS, HARMS DISCOMFORTS ASSOCIATED WITH THIS STUDY?**

There are no risks, harm or discomfort from you getting involved in this study.

**ARE THERE ANY BENEFITS BEING IN THIS STUDY?**

There are no direct benefits for you as an individual but your involvement will help in finding the response to the research question stated in the research proposal. There are no benefits to the community at this stage of the research, but future generations can benefit from the published document. Information obtained from the study will be published

### **WILL BEING IN THIS STUDY COST YOU ANYTHING?**

No, being in this study will not cost you anything and neither will there be any financial gain for you.

### **WHAT IF YOU HAVE QUESTIONS IN FUTURE?**

Questions or apprehensions about participating in this study can be explained through the number provided at the bottom of this page.

More information about rights as a study participant can be clarified by the Secretary/ Chairperson, Kenyatta National Hospital-University of Nairobi Ethics and Research Committee Telephone No. 2726300 Ext. 44102 email uonknh\_erc@uonbi.ac.ke.

The study staff will pay you back for your charges to these numbers if the call is for study-related communication.

### **WHAT ARE YOUR OTHER CHOICES?**

Participation in this research is voluntary. You are at liberty to not participate and can withdraw at any time without victimization.

### **CONSENT FORM (STATEMENT OF CONSENT)**

#### **Participant's statement;**

I have read this consent form or it has been clarified to me. My questions have been answered in a language that I comprehend. I understand there are no risks or any benefits to me. I also understand that my contribution in this research is deliberate and that i am free to opt out any time. I therefore liberally accept to participate in this study.

I understand that any information regarding my private identity is confidential.

**Participant name:** .....

**Signature / Thumb stamp**.....**Date** .....

**Researcher's statement**

I, the undersigned below, have entirely clarified the significant details of this study to the respondent named above and believe that she has understood and has liberally given her consent.

**Researcher's Name:**..... **Date:**

.....

**Signature** .....

**Role in the study:** ..... *[I.e. study staff who explained informed consent form.]*

For more information contact .....

### **Appendix III: Focused Group Discussion Guide**

1. Why do mothers delay in attending ANC?
2. Who attends the clinic earlier the married or the married?
3. What is the explanation for the answer above?
4. Is it important for a male partner to accompany his wife to clinic?
5. What is the role of a mother or elderly women during pregnancy?
6. Are the health insurance covers important during pregnancy?
7. Where do you access health services?
8. How friendly are health service providers?
9. How adequate are the health services currently provided in hospitals?

**Appendix IV: Focused Group Discussion Consent Form**

Only one consent form for the focus group discussions will be signed by the researcher to show

that all the participants have accepted to take part in the study.

Identification of the focused group discussion.....

Number of participants in the FDG.....

Date of the FDG...../...../..... Place of the FDG.....

Moderator's name.....

Each of the participants has either read the information sheet. I have also explained to the participants the information contained in the information sheet. They have assured me that they fully understand that if they agree to participate in the study, they will have a group discussion of between 6-12 persons which will take 45minutes -1hr. They understand that they are free to withdraw from the discussion at any time and this will not have any adverse effects. They also understand that the discussion will be tape recorded.

The participants have agreed to take part in the study.

Name of the researcher.....

Signature..... Date.....

## Appendix V: Kiswahili Questionnaire

### Anwani ya utafiti:

Viamuzi vya wakati ufaao wa kuhusishahuduma za ujauzito kati ya kina mama wajawazito ambao hutembelea kliniki kabla ya kujifungua katika hospitali ya kaunti ya embu nchini kenya

### Mtafiti mkuu;

Ann Beatrice Wambui Muthoni

### Taasisi ya tafsiri ya kumbukumbu:

Chuo kikuu cha jomo Kenyatta cha ukulima na teknolojia

**Maagizo;** jaza pengo na uweke alama(✓) kwa maswali unayojibu

Tarehe \_\_\_/ \_\_\_/ \_\_\_ (t/mm/mmmm)

Kodi #: \_\_\_\_\_ *sehemu ya kwanza:* *maelezo ya kidemografia*

1. Umri : \_\_\_\_\_ miaka
2. Hali ya ndoa: 1.  nimeoa/olewa 2.  Sijao/olewa 3.  tumetengana/tumeachana/  
mjane
3. Elimu: 1.  sijasoma 2.  msingi 3.  sekondari 4.  Chuo cha elimu/chuo kikuu
4. Dini: 1.  muislamu 2.  mkristo 3.  nyingine. Fafanua.....
5. Idadi ya watoto: \_\_\_\_\_

### *Sifa za ukunga*

6. usawa: \_\_\_\_\_
7. umri wa ujauzito: \_\_\_\_\_ wiki

8. Je kuna matatizo yaliyotokana na ujauzito wa kwanza: 1.  Ndio 2.  La
9. Je, ujauzito huu ulikuwa umepangiwa ama haukuwa umepangiwa? 1.   
Ulipangiwa 2.  haukutarajiwa/haukupangiwa

***Maelezo ya kabla ya kuzaa***

10. Je, haya ndio mazungumzo ya kwanza ya ujauzito? 1.  Ndio 2.  La
11. Kama la; a. umeenda kliniki mara ngapi ukijumlisha hata mara yako ya mwisho?  
\_\_\_\_\_ b. ulikuwa na ujauzito wa miezi mingapi mara ya kwanza ulipotembelea  
kliniki ya ujauzito? \_\_\_\_\_ wiki
12. Mwanamke njamzito anapaswa kutembelea kliniki ya wajawazito lini kwa mara ya  
kwanza? \_\_\_\_\_ wiki
13. Je, ulipata ujumbe huu kutoka wapi? 1.  mwenzi 2.  Mamako 3.  mamamkwe  
4.  dadako 5. Kiongozi wa dini 6.  mfanyikazi wa afya 7.  FMarafiki 8.   
Radio 9.  Televisheni 10.  Zingine. Fafanua \_\_\_\_\_
14. Je, ulienda kliniki ya kwanza wakati ufaao? 1.  Ndio 2.  La
15. Kama \_\_\_\_\_ la, \_\_\_\_\_ toa \_\_\_\_\_ sababu \_\_\_\_\_ zozote?  
\_\_\_\_\_
16. Kwa ujumla, kuna sababu zozote za akina mama wajawazito katika eneo hili kuanza  
kliniki wakiwa wamechelewa? \_\_\_\_\_

***Ushirikiano wa mwenzi***

17. Je mmewahi kufuatana ma mwenzio kwenda kliniki tangu upate ujauzito huu? 1.   
Ndio 2.  La



18. Kama \_\_\_\_\_ la, \_\_\_\_\_ sababu \_\_\_\_\_ ni  
zipi? \_\_\_\_\_

19. Je , mwenzio amesimama na wewe wakati huu wa ujauzito? 1.  Ndio 2.  La

***sehemu ii: kipengele cha kifedha***

20. Hali ya kikazi: 1.  sijaajiliwa 2.  nimeajiriwa (Umma/Binafsi/Mwenyewe)

21. Kiwango cha mapato ya familia kila mwezi \_\_\_\_\_

22. Je una biashara ya kifamilia? 1. Ndio 2. La.

23. Je, kuna watu wengine ambao hukutegemea moja kwa moja? 1. Ndio 2. La.

24. Je, uko na bima ya afya? 1. Ndio 2. La.

25. Je, unatumia nauli ya pesa ngapi kila mara unapoenda kliniki (kwenda na kurundi)?

KSh.

***sehemu iii: maelezo ya kitamanduni***

26. Je, ulikuwa umetafuta maagizo kuhusu ujauzito kabla ya kuanza kliniki 1.  Ndio 2.

La

27. Kama ndio, ulikuwa umetafuta kwa nani? 1.  mwenzio 2.  Mama 3.

Mamamkwe 4.  Dadako 5. Kiongozi wa dini 6.  Mfanyikazi wa kiafya 7.

Marafiki 8.  wengine. fafania \_\_\_\_\_

28. Je, unafaa kuomba rufu kwa yeyote kabla ya kuanza kliniki ? 1.  Ndio 2.  La

29. Kama ndio, kutoka kwa nani? 1.  mwenzio 2.  Mama 3.  Mama mkwe 4.

Dadako 5. Kiongozi wa dini 6.  Mfanyikazi wa afya 7.  Wengine. fafania  
\_\_\_\_\_

30. Je, ungetaka kujifungulia wapi? 1. Hospitalini 2. Nyumbani.

*sehemu iv: maelezo kuhusiana na huduma za afya*

31. Umbali wa kutoka nyumbani hadi kwenye kituo cha afya ni kilomita ngapi: \_\_\_\_\_  
kilomita
32. Unachukua mda gani kufika hospitalini: \_\_\_\_\_ dakika
33. Kiasi cha mda unaotumika hospitalini wakati unapoenda kliniki. 1.  Mrefu sana 2.  
mrefu 3.  mfupi
34. Kwa ujumla, ulitosheka na jinsi mhudumu alivyokuhudumia kwenye kliniki? 1.   
alinitosheleza kabisa 2.hakutosheleza  3.  hakutosheleza wala si mtoshelevu 4.  
 Simtoshelevu 5.  si mtoshelevu kamwe

## **Appendix VI: Kiswahili Focused Group Consent Form**

### **Anwani ya utafiti:**

Viamuzi vya wakati ufaao wa kuhusishahuduma za ujauzito kati ya kina mama wajawazito ambao hutembelea kliniki kabla ya kujifungua katika hospitali ya kaunti ya embu nchini kenya

### **Mtafiti mkuu;**

Ann Beatrice Wambui Muthoni

### **Taasisi ya tafsiri ya kumbukumbu:**

Chuo kikuu cha jomo Kenyatta cha ukulima na teknolojia

### **Dibaji:**

sababu ya fomu hii ya mapatano ni kukupa ujumbe unaohitaji ili kukusaidia kuamua kama utakubali au la kushiriki katika utafiti. Jiskie huru kuuliza swali lolote kuhusu sababu ya utafiti, kitakachokufanyikia ukishiriki katika utafiti, hatari na faida, kibali chako kama mtu aliyejitolea kupeana ujumbe kwa hiari, na swali lingine lolote lile kuhusu utafiti huu ama fomu hii ambalo halieleweki kwako.tukishajibu maswali yote kulingana na utoshelevu wako, unaweza amua kushiriki katika utafiti huu au la.utaratibu huu unaitwa ‘idhini ya maelewano’. Iwapo utaelewa kila kitu na ukubali kushiriki katika utafiti,nitakuomba uandike jina lako kwenye hii fomu. Unafaa pia kuelewa kanuni ambazo huwa kwa washirika wowote wale kwenye mambo ya kiafya:

- i) Uamuzi wako wa kushiriki ni wa kujitolea bila kusukumwa.
- ii) Unaweza vile vile kujiondoa kutoka kwa utafiti huu wakati wowote ule bila hata ya kupeana sababu ya kujiondoa huko
- iii) Kukataa kushiriki katika utafiti hakutahusiana na huduma ambazo unafaa kuzipata katika kituo hiki cha afya au wala huduma zingine zozote zile.

Tutakupea nakala ya fomu hii kwa ajili ya rekodi zako.

### **UTAFITI HUU UNAHUSU NINI?**

Utafiti huu unahusu kuangalia viamuzi vya wakati unaofaa kuhusiswa kwa kina mama wajawazito kwenye huduma za ujauzito kwa kina mama wajawazito ambao hutembelea kliniki za wajawazito katika hospitali ya kaunti ya embu

Mtafiti aliyenukuliwa hapo juu anahoji mama mjamzito ambaye ametembelea kliniki ya wajawazito kwa EL5H pekee. Kiini cha hojaji ni kutafiti viukilia vya wakati ufaao kushirikisha huduma za ujauzito kwa kina mama wajawazito ambao wanahudhuria hizo kliniki kwa EL5H pekee. Kiini cha hojaji ni kutafiti kuhusu viukilia vya wakati ufaao kuhusishwa kwa kina mama wajawazito kwenye huduma zinazolenga ujauzito kwa kina mama wanaotembelea kliniki za ujauzito katika hospitali ya embu nchini Kenya.

Kutakuwa na takriban washiriki 247 katika utafiti huu ambao wamechaguliwa bila ubaguzi wowote. Tunakuomba tu kibali chako ili uweze kushiriki katika utafiti huu.

### **.ITAKUFANYIKIAJE UKIKUBALI KUSHIRIKI KATIKA UTAFITI HUU?**

Iwapo utakubali kushiriki katika utafiti huu, mambo yafuatayo yatafanyika:

Utahojiwa na mhoji aliyefunzwa jinsi ya kuendeleza hiyo shughuli mahali faraghani ambapo utahisi ukiwa na uhuru wa kujibu maswali:

Utafiti utaendelea kwa takribani dakika 20.kushiriki kwako katika utafiki huu kutawekwa katika siri na tukatumia nambari pekee badala ya jina lako halisi.

Usiri wa ujumbe tutakaopata kutoka kwako ama kutokana na rekodi zako utazuiliwa kwa njia hizo ama kwa kutumia kodi za nambari ili kuficha utambulisho na jumbe ambazo zitakuwa za kielektronikina tutazizuia kwa kutumia nywila ili kuweza kuwa na idadi ndogo tu ya watu ambao wanaweza pata ujumbe huo.

### **JE KUNA HATARI ZOZOTE, DHURU, KUTOTOSHEKA AMBAKO KUNAENDANISHA NA UTAFITI HUU?**

Hakuna hatari, dhuru wala kutotosheka kutokana na wewe kushiriki katika utafiti huu.

### **KUNA FAIDA ZOZOTE ZA KUSHIRIKI KWENYE UTAFITI HUU?**

Hakuna faida zozote za moja kwa moja kwa mtu binafsi lakini kushiriki kwako kutasaidia kutafuta majibu kwa hojaji iliyotajwa kwenye fomu ya hojaji.hakuna pia faida kwa wanakijiji katika kitengo hiki cha utafiti, lakini vizazi vijavyo vyaweza faidika kutokana na nakala iliyochapishwa. Ujumbe utakaopatikana kwenye utafiti utachapishwa.

## **JE KUSHIRIKI KATIKA UTAFITI HUU KUTAKUGHARIMU CHOCHOTE?**

La, kuwa katika utafiti huu hakutakugharimu chochote na wala hautapewa hata pesa kwa kushiriki

## **JE NA IKIWA UTAKUWA NA MASWALI SIKU ZA USONI?**

Ikiwa utakuwa na maswali mengine kuhusu kushiriki katika utafiti huu, tafadhali piga simu au utume ujumbe mfupi kwa kamati ya watafiti kwa nambri ambayo imenakiliwa hapo chini ya ukurasa huu.

Kwa ujumbe zaidi kuhusu kibali chako kama mshirika kwenye utafiti unaweza wasiliana na karani/ mwenyekiti, hospitali Kuu ya Kenyatta- chuo kikuu cha Nairobi kuhusu maadili na utafiti

Nambari ya kamati; No.2726300 Ext; 44102 barua pepe; [uonknh\\_erc@uonbi.ac.ke](mailto:uonknh_erc@uonbi.ac.ke).

Kamati ya utafiti itakulipa pesa utakazokuwa umetumia kuwasiliana nao kama mawasiliano yanahusu utafiti.

## **JE, UNAWEZA KUWA NA NAKAWA ZINGINE?**

Uamuzi wako wa kushiriki katika utafiti huu ni wa hiari. Uko huru kukataa kushiriki katika utafiti na unaweza kujiondoa katika utafiti wakati wowote ule bila pingamizi

## **FOMU YA MAPATANO (UJUMBE WA MAKUBALIANO)**

### **Ujumbe wa mshiriki**

Nimesoma fomu hii ya makubaliano au nimeelewa ujumbe niliosomewa kutoka kwa fomu hii. Nimepata nafasi ya kujadili utafiti huu na mwelekezi wa utafiti.maswali yangu yamejibiwa kwa lugha niliyoelewa. Nimeelezewa pia kuhusu Faida na hasara. Nimeelewa kuwa kushiriki kwangu katika utafiti huu ni kwa hiari na naweza amua kutoshiriki wakati wowote ule. Nimekubali kwa hiari kushiriki katika utafiti huu.

Nimeelewa pia kila juhudi zitafanywa kuweka ujumbe huu kunihusu mimi binafsi ukiwa siri kubwa.

**Jina la mhusika lililochapishwa:**

.....

**Sahihi ya mhusika / sahihi ya kidole.....Tarehe .....**

**Taarifa ya mtafiti**

Mimi, niliyeteuliwa, nimeelezea kinagaubaga maelezo yote muhimu ya utafiti huu kwa mhusika aliyetajwa hapo juu na ninaamini ya kwamba mhusika ameelewa na kwa hiari yake, amepeana kibali chake.

**Jina la mtafiti.....**

**Tarehe.....**

**Sahihi .....**

Jukumu kwenye utafiti: ..... *[kama vile mwanakamati wa utafiti aliyefafanua fomu ya makubaliano.]*

Kwa maelezo zaidi zungumza na .....

## **Appendix VII: Kiswahili Focused Group Discussion Guide**

1. Kwa nini akina mama huchelewa kuanza kliniki za wajawazito?
2. Ni kikundi kipi cha kina mama wajawazito huanza kliniki mapema, walioolewa au wasioolewa?
3. Sababu za jibu ulilopata hapo juu ni zipi?
4. Je, kuna umuhimu wowote wa baba kufuatana na mama mjamzito kwenye kliniki?
5. Je, wajibu wa mama au mzee wakati wa ujauzito ni upi?
6. Je, bima ya afya husaidia wakati wa ujauzito?
7. Je, wewe huwa unatafuta wapi huduma za afya?
8. Wahudumu wa afya hukuhudumia kwa usahibu?
9. Huduma za afya zina utoshelevu katika hospitali siku hizi?

## **Appendix VIII: Kiswahili Focused Group Researcher Consent Form**

Fomu moja pekee ya kikundi cha majadiliano ndio tu itakayotiwa sahihi na mtafiti kuonyesha kwamba washiriki wote wamekubali kushiriki kwenye utafiti utambulisho wa kikundi kilicholengwa.....

idadi ya washiriki kwenye FDG.....

Tarehe ya...../...../..... Mahali pa FDG.....

Jina la msimamizi mkuu.....

Kila mhusika amesoma ujumbe wa nakala.Pia nimeelezea kwa wahusika ujumbe ambao uko kwenye nakala ya maelezo.na wamenihakikishia ya kwamba wameelewa kwa kina ya kuwa, wakikubali kushiriki kwenye utafiti huu, watakuwa na vikundi vya kujadili vya idadi ya watu kati ya 6-12 ambayo itachukua muda wa dakika 45- saa moja.pia wanaelewa kuwa wako huru kujiondoa kwenye mahojiano wakati wowote na hilo halitakuwa na hasara yoyote kwao.pia wanaelewa kuwa, mahojiano yatarekodiwa.

Wahusika wamekubali kushiriki kwenye utafiti;


Jina la mtafiti.....

Sahihi..... Tarehe.....



**Appendix IX: Retest Approval Letter**

**COUNTY GOVERNMENT OF KIRINYAGA**

  
**COUNTY DEPARTMENT OF HEALTH**

E- mail: dmohkirinyaga@gmail.com or  
gkaroki@kirinyaga.go.ke

When replying please quote:

**REF: REF; CDH/RES/VOL.II/123**

COUNTY DIRECTOR OF HEALTH  
KIRINYAGA,  
P. O. BOX 24,  
KERUGOYA

**23<sup>RD</sup> DECEMBER, 2019**

**ANN B.W. MUTHONI  
JKUAT**

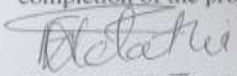
**RE: APPROVAL TO CONDUCT A PRETEST OF A RESEARCH PROJECT  
AT KERUGOYA COUNTY REFERRAL HOSPITAL ON DETERMINANTS  
OF TIMELY INITIATION OF ANTENATAL CARE AMONG PREGNANT  
MOTHERS ATTENDING ANTENATAL CARE**

We acknowledge your application for approval to carry out a pretest of the research project on "determinants of timely initiation of antenatal care among pregnant mothers attending antenatal care" at Kerugoya county referral hospital.

The student is studying a Master's Degree at JKUAT.

You are hereby granted approval to conduct this Pretest in the Hospital.

You are **Expected to Submit** the findings to the County Department of Health on completion of the project.

  
**FLORENCE NDATHI  
RESEARCH OFFICER  
For COUNTY DIRECTOR OF HEALTH  
KIRINYAGA COUNTY.**

*The above document  
has been approved  
Kindly send the  
necessary documents  
H.A. [Signature]*


## Appendix X: Data Collection Approval Letter

**EMBU COUNTY GOVERNMENT**  
**DEPARTMENT OF HEALTH**

Telephone: 068-2231055/56  
Cellphone: 0722406595  
Email: [pghembu@gmail.com](mailto:pghembu@gmail.com)

When replying please quote our reference

Ref. C.20/VOL.IV /28



OFFICE OF THE  
MEDICAL SUPERINTENDENT  
EMBU LEVEL 5 HOSPITAL  
P.O. BOX 33  
EMBU  
Date 7<sup>th</sup> May, 2019

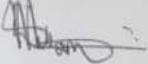
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To University of Nairobi/KNH  
Ethics and Research Committee

**RE: APPROVAL TO COLLECT DATA FOR ANN BEATRICE WAMBUI MUTHONI**




The above named has sort permission to collect data on **“Determinants of timely initiation of antenatal care among pregnant mothers attending antenatal clinic”** in Embu Level 5 Hospital.

This facility has not objection and hereby gives her, an approval to collect data



**DR. ESTHER NJIRU**  
**MEDICAL SUPERINTENDENT**  
**EMBU LEVEL 5 HOSPITAL**

## Appendix XI: Knh-Uon Erc Clearance Letter



UNIVERSITY OF NAIROBI  
COLLEGE OF HEALTH SCIENCES  
P O BOX 19679 Code 00202  
Telegrams: varsity  
Tel:(254-020) 2726300 Ext 44355

KNH-UON ERC  
Email: uonknh\_erc@uonbi.ac.ke  
Website: <http://www.erc.uonbi.ac.ke>  
Facebook: <https://www.facebook.com/uonknh.erc>  
Twitter: @UONKNH\_ERC [https://twitter.com/UONKNH\\_ERC](https://twitter.com/UONKNH_ERC)

KENYATTA NATIONAL HOSPITAL  
P O BOX 20723 Code 00202  
Tel: 725300-9  
Fax: 725272  
Telegrams: MEDSUP, Nairobi

Ref: KNH-ERC/A/408

1<sup>st</sup> November, 2019

Ann Beatrice Wambui Muthoni  
Reg. No. HSN 311-2618/2017  
School of Nursing  
College of Health Sciences (CoHES)  
J.K.U.A.T

Dear Ann,

**RESEARCH PROPOSAL: DETERMINANTS OF TIMELY INITIATION OF ANTENATAL CARE AMONG PREGNANT MOTHERS ATTENDING ANTENATAL CLINIC AT EMBU COUNTY HOSPITAL, KENYA (P415/05/2019)**

This is to inform you that the KNH- UoN Ethics & Research Committee (KNH- UoN ERC) has reviewed and **approved** your above research proposal. The approval period is 1<sup>st</sup> November 2019 – 31<sup>st</sup> October 2020.

This approval is subject to compliance with the following requirements:

- Only approved documents (informed consents, study instruments, advertising materials etc) will be used.
- All changes (amendments, deviations, violations etc.) are submitted for review and approval by KNH-UoN ERC before implementation.
- Death and life threatening problems and serious adverse events (SAEs) or unexpected adverse events whether related or unrelated to the study must be reported to the KNH-UoN ERC within 72 hours of notification.
- Any changes, anticipated or otherwise that may increase the risks or affect safety or welfare of study participants and others or affect the integrity of the research must be reported to KNH- UoN ERC within 72 hours.
- Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. (*Attach a comprehensive progress report to support the renewal.*)
- Submission of an *executive summary* report within 90 days upon completion of the study. This information will form part of the data base that will be consulted in future when processing related research studies so as to minimize chances of study duplication and/ or plagiarism.

Protect to discover