BARRIERS TO THE UTILIZATON OF ANTENATAL CARE SERVICES AMONG WOMEN ATTENDING PUBLIC HEALTH FACILITIES IN ELGEYO MARAKWET COUNTY, KENYA

BY

SAWE ANGELA JEPCHIRCHIR

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DECLARATION

DECLARATION BY CANDIDATE

This thesis is my original work that has not been submitted anywhere else in any university for academic purpose or award.

Sawe Angela Jepchirchir

REG: SPH /PGH/ 04/13

Signature: _____ Date:_____

DECLARATION BY SUPERVISORS

This thesis has been submitted for examination with our declaration as the university supervisors.

Dr. Simon Ruttoh

School of Arts and Social Sciences

Department of Psychology, Sociology and Anthropology

Signature: _____ Date:_____

Dr. Lucy Kiyiapi

School of Arts and Social Sciences

Department of Psychology, Sociology and Anthropology

Signature: _____ Date:_____

DEDICATION

I dedicate this report to my children Lavigne and Purity, Thanks. God bless you for your patience.

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I acknowledge all the Moi University staff for their support, my supervisors Dr. S. K. Ruttoh and Dr. L. Kiyiapi for their abundance guidance and support. The authorizing Hospitals, Iten County Referral Hospital, Kamwosor sub-County Hospital and Chebiemit sub-County Hospital where the research was done, all my colleagues for their encouragements and all those who participated in one way or the other in making this work successful. God bless you all.

ABSTRACT

Topic: Barriers to the utilization of antenatal care services among women attending public health facilities in Elgeyo Marakwet County, Kenya.

Introduction: Antenatal Care services provide a crucial opportunity for health care practitioners to collect a proper history, perform a physical examination, and create an antenatal profile, which aids in the detection, treatment, early birth preparation, and prevention of impending difficulties. However, impediments to Antenatal Care Service Utilization in Elgeyo Marakwet County are not extensively documented.

Objectives: The study's objectives were to investigate the impact of socio-demographic variables, assess the role of expectant women's level of knowledge about ANC services, and assess the influence of women's perceptions on the importance of completing the ANC service in accordance with WHO criteria.

Methods: Three health institutions were surveyed using a descriptive cross-sectional quantitative survey design. A total of 358 women who had given birth in the previous year were interviewed using a semi-structured questionnaire with closed and open ended questions. A bivariate analysis was performed to identify the barriers associated with women failing to complete the four ANC visits. The significance of the statistical tests was interpreted using a P value of 0.01.

Results: Of the 353 respondents, 174 (48%) had at least four ANC visits, while 10 (3%) had none. The vast majority (170) were between the ages of 20 and 29, however only 84 had four ANC visits. The vast majority (71.7%) were married, and 35% had four ANC. Only 24% had four ANC visits, although the majority (48%) had a secondary education. The majority (203) were working women, however only (100) completed all four ANC visits. The majority (171) were Protestants (84) who completed the four ANC visits, whereas the non-religious were the fewest (5) but still (2). Only (104) attended the public health institution for the first time between 4 and 6 months, while the majority (165) did not. The majority (169) visited ANC 1-3 times, 165 attended 4–6 times, and only 9 attended 7–9 times, with 118 indicating that the facilities were too far away. The majority (86%) were aware of HIV tests, yet 42% had four ANC visits. Concerning predicted difficulties, 91% said yes, and 45% had four ANC visits. Although 62% were aware that heavy bleeding was a warning sign, only 31% had four ANC visits. The majority (91%) were aware of acute danger signals, despite the fact that only 62% had four ANC visits. 82% believed ANC services were necessary, and 40% had four ANC visits. The majority (97%) believed HIV testing was essential, and 48% completed the four ANC visits. The majority (39%) made their first visit between the fourth and sixth months, making completing the four ANC visits impossible, and 53% chose to attend at that time. The majority (42%) stated that pregnant women should attend the ANC clinic three times or less before delivery, therefore 20% had four ANC visits. Because more than half (49%) paid for ANC services, just 24% had four ANC visits.

Conclusion: Socio-demographic, women's level of knowledge was found to have an influence in the utilization of ANC services. Women's perception though high did not increase the uptake of ANC services.

Recommendations: Financial challenges should be addressed by the government in order to increase the ANC uptake. Health education should be conducted in the county to increase awareness and the importance of these services in all health facilities.

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LIST OF ACRONYMS AND ABREVIATIONS

AIC	African Inland Church
AIDS	Acquired Immune Deficiency Syndrome
ANC	Antenatal Care
APHRC	African Population and Health Research Centre
CBS	Central Bureau of Statistics
EMC	Elgeyo Marakwet County
FANC	Focused Antenatal Care
ICF	International Coaching Federation
ICRH	Iten County Referral Hospital
IPTp-sp	Intermittent preventive treatment of malaria in pregnancy with sulfadoxime pyrimethamine
IREC	Institutional Research and Ethics Committee
KDHS	Kenya Demography and Health Survey
KNBS	Kenya National Bureau of Statistics
MCH	Maternal Child Health
MMRs	Maternal Mortality Ratios
MOH	Ministry of Health
PNC	Post Natal Care
SPSS	Statistical Package for Social Science
UNDP	United Nations Development Program

OPERATIONAL DEFINITIONS OF KEY CONCEPTS AND TERMS

Antenatal (prenatal) care: Services provided by a health care provider to presumed healthy pregnant women, including screening for health and socioeconomic conditions that may increase the likelihood of specific adverse pregnancy outcomes, providing therapeutic interventions that are known to be effective, and educating pregnant women about safe birth planning and emergencies during pregnancy, as well as how to deal with them.

Antenatal visits: Are the routine prenatal appointments that allow the midwife and other members of the health care team to help both the mother and the baby stay healthy, diagnose diseases or complicating obstetric conditions without symptoms, and provide information about lifestyle, pregnancy, and delivery.

Antenatal care services: WHO defines this as the care a pregnant woman receives prior to birth, which includes education, screening, counseling, minor illness treatment, and immunization services.

Barriers: Factors in a person's environment that, by abstention or presence, impair functioning and cause disability.

Comprehensive ANC: A complete ANC package that includes all assessments, examinations, laboratory tests, disease prevention, and health promotion components.

Focused prenatal care (Targeted ANC): This is the individual attention provided to a pregnant woman centered on the women's overall health status, preparation for childbirth, and readiness for challenges or its timely, professional, easy, and safe services to pregnant women.

Guidelines: Systematic statements that help people make judgments about appropriate health care for specific situations based on evidence or study.

Maternal Mortality: Defined as the death of a woman while pregnant or within 42 days following termination of pregnancy, regardless of the duration and location of the pregnancy, from any cause connected to or aggravated by the pregnancy or its management, but not from unintentional or incidental causes (WHO, 2014).

MCH stands for maternal, infant, and adolescent health. It also refers to a public health profession dedicated to improving the health status and future difficulties of these vulnerable populations.

Women: A female human being: a person born with a female sex or a person who considers herself to be a woman.

Neonatal mortality is defined as death occurring within the first 28 days of life (0 to 27 days).

Post-natal care is the care given to the mother and her newborn infant shortly after birth and for the first six weeks of life.

Health Care Providers: Health workers at chosen public MCH facilities who are serving in ANC at the time of the study or have served in the previous year and are accessible for interviews.

Quality of care: Care provided in accordance with WHO standards and national guidelines, based on available evidence, and addressing the needs of the client.

Satisfaction: Being sensitive to and meeting clients' demands in terms of quality, privacy, and confidentiality, as well as meeting clients' needs in a culturally acceptable manner.

Skilled birth/attendance: The process through which a skilled health practitioner provides proper care to a pregnant woman and her infant during pregnancy, labor, birth, and postpartum, as well as the immediate newborn period.

Standards: Statements or expressions that define our best practices and provide guidance on how to reach a certain degree of care.

Utilization: The action of making practical and effective use of something.

WHO health standards: A way of characterizing the degree of quality that healthcare organizations are expected to meet or strive to in order to follow the agreed-upon ways for integrating systems and providing quality care to everybody.

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background

Antenatal care is the medical attention provided to pregnant women by qualified health care providers. It entails risk identification, screening, prevention and counseling on pregnancy-related or concurrent disorders, as well as health education and promotion (Tekelab et al., 2019). The World Health Organization (WHO) recommends that Antenatal care (ANC) should be initiated within the first trimester of gestation with at least four and optimally eight contact visits during the pregnancy (Tuncalpo et al., 2017). WHO advises pregnant women to initiate ANC contact visits during the first twelve (12) weeks with subsequent contacts taking place at 20, 26, 30, 34, 36, 38, and 40 weeks gestation but from previous research there are reported perceived barriers that are suspected to hinder the mothers from completing these visits (WHO, 2016).

Perceived barriers refers to a person's feelings on the obstacles to performing a recommended health action (WHO, 2016). Earlier studies reported that women who do not complete ANC visits are usually of higher parity, do not stay with partner, are of lower socio-economic status, are less educated, and have lower access to health services (Choulagai B et al., 2013). Women with higher parity initiate their ANC visits late because of culture, experience or had no complications during earlier pregnancies will tend to start late hence may visit less than four times.

Moreover, women will not attend ANC if services are poor, if services are paid or inaccessible or if previous experiences were negative. Epidemiological studies have reported an association between the number of visits and pregnancy outcomes due to

related complications to include maternal mortalities. Maternal mortality ratio is defined as the number of deaths divide by the number live births by 100,000 (WHO, 2020). Maternal mortality refers to deaths due to complications from pregnancy or childbirth (WHO, 2019).

Maternal mortality is unacceptably high globally. About 295 000 women died during and following pregnancy and childbirth in 2017 (WHO, 2020). The vast majority of these deaths (94%) occurred in low-resource settings, and most could have been prevented through the Antenatal Care visits (National Center for Health Statistics, 2020). According to World Health Organization, the global maternal mortality ratio was estimated at 152 deaths per 100,000 live births in 2020, up from 151 deaths per 100,000 live births in 2019 (WHO, 2020). The World Health Organization estimates that almost 295,000 women died from pregnancy-related causes in 2017; that is 808 women every day (WHO, 2020).

Regionally, Sub-Saharan Africa and Southern Asia accounted for approximately 86% (254,000) of the estimated global maternal deaths in 2017. Sub-Saharan Africa alone accounted for roughly two-thirds (196,000) of maternal deaths, while Southern Asia accounted for nearly one-fifth of these deaths (58 000) (National Center for Health Statistics, 2020). Nationally, the maternal mortality ratio, the number of women dying of pregnancy-related causes, stands at 355 deaths per 100,000 live births (Owolabi, et al., 2020). Given the current annual births, this means that there are nearly 5000 women and girls dying annually due to pregnancy and childbirth complications (WHO, 2020).

In Elgeyo Marakwet County, between the years 2018 and 2019, there were six mortalities (due to ruptured uterus and sepsis) (DHIS, 2019). Women who completed 4 ANC visits in 2019 were 645/3806 (16.97%) while those who completed in the year 2020 were

331/2891(11.45%) therefore, the number who completed the 4 visits is still low. Antenatal Care (ANC) remains the recommended preventive measure for maternal mortality. Antenatal care is an important determinant of maternal health outcomes which the life of pregnant women depend on. It is the entry point to the health care system and determines whether a mother will deliver in the same health facility or will need further referral for additional care.

Antenatal Care offers an important opportunity for health care workers to do integrated services to all pregnant women. They do proper history taking, physical examination and counsel on infant feeding in order to help detect, treat and prevent pregnancy-related complications. ANC helps in early birth planning and preparation for both normal and abnormal gynaecological and obstetric emergencies. At the ANC clinic, this is where the mothers get Tetanus Toxoid injections, Iron supplements (IFAS), de-wormers and serologic tests for syphilis, prevention of mother to child transmission of HIV and intermittent malaria treated nets and malaria prophylaxis in malaria prone areas. The Kenyan government provides ANC services in all Dispensaries, health Centres, Sub-County and County hospitals.

In 2016, the *'Linda Mama'* programme was introduced to enable free service to all ANC mothers in all public health facilities (MOH, 2016). However, from the County reports (KDHS, 2018) only 57.9% of the mothers attend the four ANC visits. Therefore, utilization of ANC services is still far below the WHO's expectations of 88% and the recommended eight visits during pregnancy.

According to Chuma and Thomas (2013), only a minority of pregnant women (36.1%) make the required minimum of four ANC visits in public health facilities in Kenya. The

poor access to low utilization of skilled care during the antenatal, childbirth, and post natal period contributes to high maternal deaths in Kenya. For example, only 62 of live births in the KDHS (2014) were delivered by skilled birth attendant and only 58% of the mothers attended four or more antenatal visits (KNBS, 2014).The mothers do not complete the required ANC visits due to a number of factors that see the maternal mortality increase.

According Pell (2013) the scale of maternal mortality is staggering and this is what is reported to have stalled due to non-prioritizing of funding for maternal health related issues, lack of communication between macro-level policy-making and micro-level community needs (World Bank, 2017). Therefore, the Government of Kenya in the year 2016, introduced the Linda Mama program that is one of Kenya's pro-poor policies intended to benefit the poor and the vulnerable in order to help the mothers access the ANC services (MOH, 2016).

The Kenya government introduced *Linda Mama* programme that is said to have decreased the maternal mortality prevalence by 37% by the year 2015 (WHO, 2014). The deaths are said to have been caused by conditions that would be prevented during ANC hence the need to increase the number of visits to 8 as recommended by World Health Organization (WHO, 2016). A minimum of eight (8) contact for antenatal care could reduce perinatal deaths by up to 8 per 1000 births when compared to a minimum of four visits (WHO, 2016). Under the new guidelines, the first visit was recommended at 12 weeks of gestation, with subsequent visits at 20, 24, 28, 32, 36, 38 and 40 weeks of gestation to ensure a continuum of care during pregnancy, labour, delivery and the post natal period (WHO, 2016).

Haemorrhage is reported to be the leading cause of maternal mortality, accounting for over one quarter (27 per cent) of deaths (WHO, 2019). Similar proportion of maternal deaths were caused indirectly by pre-existing medical conditions aggravated by pregnancy. Hypertensive disorders of pregnancy, especially eclampsia, as well as sepsis, embolism and complications of unsafe abortion also claim a substantial number of lives. Maternal complications occurs without warning at any time during pregnancy and childbirth and therefore this can be prevented if births are attended to by skilled health personnel (doctors and Nurses or midwives) during Antenatal clinics as per world health organization (WHO, 2019).

Despite all these services, antenatal mothers did not complete the recommended eight ANC visits and therefore it still affected the mortality rates and the general pregnancy outcome (WHO, 2020). Therefore the study sought to identify the barriers to the utilization of ANC services among women attending public health facilities in Elgeyo Marakwet County, Kenya. Further the study will determine the socio-demographic factors that may negatively affect utilization of ANC services in the county. Additionally, it will help to identify if there are any gaps in level of knowledge on the utilization of ANC services and perception of mothers on the importance of completing ANC visits as per WHO guidelines. Moreover, the study will inform the design of strategies that will seek to improve the uptake of ANC services thereby positively impacting on reducing maternal mortality rates.

1.2 Problem Statement

Maternal mortality is a major problem worldwide, particularly in developing nations such as Kenya. It is estimated that 25% of maternal deaths occur during pregnancy, delivery, and post-delivery, with variations between nations based on the prevalence of impending difficulties throughout pregnancy (WHO, 2016). In Kenya, the maternal mortality ratio was estimated to be 362 deaths per 100,000 live births (KDHS, 2014), which was connected with inadequate utilization of ANC interventions. In Elgeyo Marakwet County, the percentage of women who had four or more ANC visits throughout pregnancy for their most recent birth was only 57.9%, 34% still delivered at home, and 75% did not attend a postnatal clinic (PNC) (KNBS, 2015).

The reported barriers to ANC service use among pregnant women in Elgeyo Marakwet County include demographic factors, level of information on the value of ANC visits, and perception of ANC services. As a result, one of the approaches implemented by the Ministry of Health (Kenya) was to provide ANC services in all public dispensaries, Health Centres, Sub-County and County hospitals so that women could access them. Programs such as 'Linda Mama' cover were also implemented in 2016 to assist mothers in receiving timely therapy of pregnancy-related problems, hence lowering maternal mortality rates (Mamba et al; 2017). The purpose of this study was to look into some of the barriers to using ANC services in the county of Elgeyo Marakwet (EMC), Kenya.

1.3 Justification

Pregnant women in Sub-Saharan Africa (SSA) frequently fail to receive the four required ANC services (WHO, 2012). In Sub-Saharan Africa (SSA), for example, 71% of pregnant women attend formal ANC at least once, whereas just 44% attend four or more ANC visits. According to regional statistics, the former North Rift had an estimated 57.9% ANC women attending less than four visits (KDHS, 2014), which includes Elgeyo Marakwet County, which is why this study was conducted. The identification of barriers to ANC service utilization is critical because it will offer women with relevant information during pregnancy, birth, and the postnatal period, lowering maternal death rates in Elgeyo Marakwet County. The study is significant because, after the hurdles have been identified, the county government will look into ways to address the anomalies if it has the capacity to do so, and will involve the National Government if policies need to be modified to reduce maternal death rates.

1.4 Research Questions

1. What Socio-demographic factors affect the utilization of ANC services among women attending antenatal clinics in Elgeyo Marakwet County (EMC)?
2. What is the level of knowledge of pregnant women on the importance of utilization of ANC services?
3. What influences the pregnant women perception on the importance of completing the ANC visits as per WHO guidelines among women attending antenatal services in Elgeyo Marakwet County (EMC)?

1.5.0 Objectives

1.5.1 General objective

The general objective of the study was to examine barriers to utilization of ANC services in Elgeyo Marakwet County.

1.5.2 Specific objectives

The specific objectives of the study were to;

1. Determine the influence of Socio-demographic factors on the utilization of Antenatal Care (ANC) services among women attending antenatal clinic in Elgeyo Marakwet County (EMC).
2. Assess the level of knowledge of pregnant women on the importance of utilization of ANC services among women attending antenatal clinic in EMC.
3. Assess the influence of pregnant women perception of completing the ANC visits as per WHO guidelines among women attending antenatal clinic.

1.6 Significance of the Study

Understanding the barriers to ANC utilization in Elgeyo Marakwet County is essential towards lowering maternal mortality. The identification of these hurdles would help the ministry of health (MOH) advocate for pregnant women, allowing them to complete their ANC visits in line with WHO guidelines.

The results of this study can be replicated in other counties, nationally, and regionally to promote safe deliveries. Increased understanding among women will promote better ANC behaviors and practices, ensuring that treatments are obtained on a regular and timely basis. Delays in seeking and receiving care will be addressed, allowing women to reap the greatest benefits from their care. Finally, pregnancy-related morbidities and mortality will be decreased, resulting in healthy mothers and a society that can contribute meaningfully to its development goal.

1.7 Limitations

The study was conducted at only three high-volume public health institutions, therefore the results may not be generalizable to populations served by private hospitals and low-volume public health facilities. Due to time and financial constraints, data could not be collected from all of the county's health facilities, but just a subset of them to represent the entire county.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

Several studies suggest that most maternal deaths and pregnancy-related complications can be prevented if pregnant women can attend four or more Antenatal care visits as recommended by World Health Organization (WHO, 2016). ANC is the routine health care of presumed healthy pregnant women without symptoms (screening), in order to diagnose diseases or complicating obstetric conditions without symptoms, and to provide information about lifestyle, pregnancy and delivery (Backer et al., 2012). It is further described as care given to a pregnant woman which is focused on tracking baby`s growth and monitoring for any health problems affecting the woman or the baby.

2.2 Antenatal care service utilization

ANC is an opportunity to promote the benefits of skilled attendance at birth and to encourage women to seek postpartum care for themselves and their newborn. It is also an ideal time to counsel women about the benefits of child spacing (WHO, 2013). The main aim of ANC service is to ensure decrease in number of maternal mortality and have a health outcome (WHO, 2016). For women with normal pregnancies, World Health Organization (WHO) recommends that they do a minimum of four visits during their pregnancy and should start as early as 12 weeks or even earlier (WHO, 2016). According to (Kithua A., 2015), ANC coverage is a success story in Africa, since over two-thirds of pregnant women (69%) have at least one ANC contact visit.

However, to achieve the full life-saving potential that ANC promises for women and babies, four contact visits providing essential evidence based interventions, a package often called focused antenatal care (FANC) had been initiated but failed (Vogel et al.,2013). In the year 2016, the "Linda Mama program" that is meant to help pregnant women have free ANC services was introduced but despite the efforts from the MOH and WHO, pregnant women still do less than four ANC contact visits which is assumed to be as a result of various factors.

2.3 Factors associated with Antenatal Care Service Utilization

According to Li et al., (2016) a behavioral framework model on the impact of health service utilization, access to and use of a particular health service is a function of three main characteristics which includes predisposing factors, enabling and need factors (Li et al., 2016).

Predisposing factors: These take into consideration the socio-demographic factors

Enabling factors: This takes into consideration the occupational status, income level of the individual, availability of the health service and the distance

Need factors: This take into consideration how women view the need to use the service; how important is the service to them, any unforeseen problems in relation to their pregnancy and any policy recommendation they know.

2.3.1 Knowledge and perception as predisposing factors for ANC utilization

Knowledge of pregnant women on the importance of ANC services is believed to be a major influential factor which will majorly trigger the decisions made by the pregnant women on the utilization of ANC services.

Reports from various parts of the world have shown that increased levels of knowledge among pregnant mothers in terms of antenatal care have an impact on their utilization (WHO, 2018). Most of the women 85% knew about the benefits in terms of antenatal care and had sufficient knowledge about the importance of antenatal care. Some of the women experience of abortion and stillbirth increased the probability of using antenatal care because they knew the danger signs (Dulla et al., 2017). But Low level of education of some of the mothers, poor decision-making, low economic status of the mother, poor perception also affected them. Majority of the women 92.2% knew that, pregnant women needs at least five visits of antenatal follow up throughout her pregnancy and about 7.8% of the women did not know (Dulla et al., 2017). About 39.8% of the women did not know about the complications, which may arise with pregnancy like hypertension, that women with high blood pressure will affect the fetus growth in pregnancy (Akhtar et al., 2018). Use of antenatal care was associated with the degree of woman knowledge regarding the level of nutritional use during pregnancy and its importance. Women receiving antenatal care pointed to the importance of acceptable intake of protein, vegetables, fruits and milk during pregnancy. They also knew that green leafy vegetables and organ meat were helpful in preventing anemia ((Akhtar et al., 2018). Knowledge of the importance of ANC, however, does not seem to be directly related to initiation of ANC early Wolde et al., (2019). In their study in Texas, Wolde et al., (2019) reported that from their research study that women were aware of the importance of ANC services and had the money to pay for the services, but some of them did not initiate ANC early and therefore they concluded that there was no significant relationship between level of knowledge and early antenatal booking ($p = 0.279$). Wolde et al., (2019), in their cross-sectional survey

in Malaysia discovered that pregnant women's level of knowledge on the importance of ANC services was low (Alkema et al., 2016).

In investigating women's knowledge on ANC, they questioned women about complications that may occur during pregnancy and the benefits of ANC services. Results of their study showed that of the women who had received ANC, 54.5% did not have sufficient knowledge of the service, and only 45.5% had good knowledge (Wekesa et al., 2018). Alkema et al., (2016), compared women with good knowledge and those with poor knowledge of ANC. The results revealed that sufficient knowledge of the benefits of ANC and of the complications associated with pregnancy plays an important role in the utilization of ANC services. Being knowledgeable about ANC was associated with higher utilization of ANC services, as more knowledgeable women were 6.5 times (95% CI = 2.4–17.6) more likely to utilize ANC services than those who had poor knowledge. Low level of education of the mothers, poor decision-making, low economic status of the mother, poor perception also affected the women. Another study on the effectiveness of antenatal care on birth weight in Mexico found that women who received poor antenatal care had a 76% excess risk of low birth weight associated with premature delivery compared to those who received adequate antenatal care (Coria-Soto, Bobadilla, & Notzon, 2015).

2.3.2 Financial difficulties as enabling factors for ANC utilization

Due to the underutilization of ANC services in most of the developing countries as per WHO (2016) recommendations, many studies have tried to find out why this low uptake. Among some of the difficulties found to be a factor is financial difficulties. The difficulties can be in terms of transportation cost to the facility or services charges. Due

to the poverty levels or unemployment in most of the developing countries, financial in ability hinders most of the women from completing the recommended ANC visits leading to an increase in the maternal mortality rate. This now becomes worse for women who are not employed or have low income.

A study in Japan provides evidence that family income is one of the most significant predictors of utilization of ANC services. Women with high income were 2.6 times (95% more likely to have received ANC than women with low income (Kruk et al., 2014). In Ethiopia, studies have also shown that economic status of a mother is a strong determinant of utilization of antenatal care services Elkamel, F., (2019). Birmeta et al., (2013) showed that exposure to modern care givers was associated with attending to ANC centers. In a study conducted in South West Nigeria, it was interesting to note that the low-income women were more likely to use private clinics compared to women with higher income (UNICEF, 2014). This may be because low cadre workers may have less control over their time at work and therefore have to seek ANC outside the normal clinic hours. According to (Yeoh et al., 2016) women from low-income families were less likely to seek prenatal care, visit the town health Centre or local private clinic; whereas women from high-income families used country hospitals or higher medical institutes which provided better quality care. These findings led to the recommendation that low income should be taken as “high-risk factor” for poor maternal health (Yeoh et al., 2016). Say et al., (2014) argues that millions of women cannot afford to use maternal health services even when formal fees are low or non-existent because women often face hidden fees and expenses for transport, drugs, and food. And therefore the poorer the women are, the more likely fees are to affect their use of health services (Mathe, M., 2017). In order

to improve utilization of ANC services, efforts to relieve poverty and empower women economically are needed.

2.2 Socio-demographic factors as predisposing factors affecting utilization of ANC services

Utilization of ANC services is influenced by demographic factors such as age, marital status, level of education, employment and religious affiliation A study is Somalia showed that a majority (116) of young persons of age 25-29 years attended ANC Clinics (Fardowsa M.O., (2016). Another study in Uganda found no evidence of an association between age and initiation of ANC (Rukundo, et al., (2015).

Gross et al., (2012) found no evidence of delayed initiation of ANC by adolescents in south-eastern Tanzania when comparisons were made between adolescents and adults, although adolescent women initiated ANC slightly earlier than older women, with a mean of 5.0 months (SD = 1.2, range 2—8). However, multiparous and adolescents started ANC considerably later than their counterparts, with a mean of 5.5 months (SD 1.20, t = 1.43).

A study carried out later in south-western of Ethiopia revealed that younger women initiated ANC later than older women (Ejeta et al., 2017). According to (Chewe et al., 2016) women who were younger than 25 were more likely to book in later than older women (OR = 8.3, 95% CI: 1.10—62.65) which is attributed to traditional beliefs in the south-western of Ethiopia. The younger women believed that since pregnancy was not a disease, they did not see the need to start the ANC early.

While a study in Damascus according to (Matyukira, S. P. 2014) found that being young (less than 20 years) was significantly associated with initiating the first ANC visit early

(OR = 2.9; 95% CI: 1.1-7.7). Kifle et al., (2017) reports that in Eastern Ethiopia, age at first pregnancy was proved to be associated with the utilization of ANC services. According to (Kifle et al., 2017), women who were 20 years or below in their first pregnancy were three times more likely to utilize ANC services than women whose age at first pregnancy was more than 20 years (AOR = 2.94 95%CI: 1.66-5.20). Dulla et al., (2017) attributed to the premise that younger women were more careful with their first pregnancy and childbirth, and therefore seek institutional care early.

Marital Status could influence health care seeking behaviors. Unmarried pregnant women are less likely to seek ANC services due to a lack of economic and social support from parents, guardians and spouses (Gram et al., 2018). Married pregnant adolescents may also lack social independent and decision making powers to seek ANC services. There may be pressure or oppression from the spouse or influential members of the extended family forcing pregnant women to accept the decision made on their behalf (Gram et al., 2018).

Educational level is considered as a determining factor to utilization of ANC services for many women (Birmeta et al., 2013). Several studies have shown that women's use of health facility delivery services is influenced by their level of education in that women with secondary education or above are more likely to attend the ANC services, while those living within a distance of more than five kilometers away from a dispensary were less likely to attend despite the education (Bustreo et al., 2013). A study carried out among expectant mothers in Ghana by (Song, 2013) which established that women from households with highest educational level were more likely to demand institutional

maternal services, by 18 percent points, compared with women in the lowest educational level whose attendance to these maternal services was not a priority.

Galle et al., (2015) added that when women have higher incomes, they tend to start ANC early. Other studies have reported that income earned by women is associated with booking for early ANC while women who have lower income book late for ANC compared with women with a higher income (WHO, 2015).

Religion has been found to be associated with the utilization of maternal health care services. For example, a study done in Ethiopia (Ethiopian Demographic and Health Survey, 2014) reports that individuals professing Orthodox/Catholic, Muslim and Protestant faiths tended to use more maternal health services than those following traditional beliefs (Kalule-Sabiti. I, 2014) while Birmeta et al., (2013) found that women who followed traditional beliefs had a 50% lower chance of receiving antenatal care services compared with those who followed Orthodox/Catholic faiths.

2.4 Expectant women knowledge on the importance of ANC services

Expectant women knowledge on the importance of ANC services may be a major factor in determining the extent of antenatal services use. Some of the services which women are supposed to be knowledgeable about are their HIV status, type of blood group, urine tests, sexually transmitted disease if tested and the significance of each result. If they know any of the danger signs in pregnancy and what to do if they get any of them.

Reports from various parts of the world have shown that increase in knowledge among pregnant women in terms of antenatal care have an impact on their utilization (WHO, 2018). Most of the women 85% knew about the benefits in terms of antenatal care and had sufficient knowledge about the importance of antenatal care. Some of the women's

experience about abortion and stillbirth increased the probability of using antenatal care because they knew the danger signs (Dulla et al., 2017). But Low level of education of some of the women, poor decision-making, low economic status, poor perception also affected them. Majority of the women 92.2% knew that pregnant women needs at least five visits of antenatal follow up throughout their pregnancy and about 7.8% did not know (Dulla et al., 2017). About 39.8% of the women did not know about the complications during pregnancy. For example, women with high blood pressure is a danger sign during pregnancy because this can affect the fetal growth in utero (Akhtar et al., 2018). They also knew that green leafy vegetables and organ meat were helpful in preventing anemia ((Akhtar et al., 2018). Knowledge of the importance of ANC, however, does not seem to be directly related to initiation of ANC early Wolde et al., (2019), in their study in Texas, found that although women in their research reported that they were aware of the importance of ANC and had the money to pay for the service, some of them did not initiate ANC early and therefore they concluded that there was no significant relationship ($p = 0.279$) between level of knowledge of ANC services and early antenatal booking. In their cross-sectional survey in Malaysia they discovered that pregnant women's level of knowledge and the importance of ANC, screening tests, and complications of diabetes and hypertension during pregnancy was poor (Alkema et al., 2016).

In investigating knowledge on ANC, they questioned women on complications that may occur during pregnancy and the benefits of ANC services. Results of their study showed that of the women who had received ANC, 54.5% did not have sufficient knowledge of the service, and only 45.5% had good knowledge (Wekesa et al., 2018). Alkema et al.,

(2016), compared women with good knowledge and those with poor knowledge of ANC. The results revealed that sufficient knowledge of the benefits of ANC and of the complications associated with pregnancy plays an important role in the utilization of ANC services. Being knowledgeable about ANC was associated with higher utilization of ANC services, as more knowledgeable women were 6.5 times (95% CI = 2.4–17.6) more likely to utilize ANC services than those who had poor knowledge. Low level of education of the mothers, poor decision-making, low economic status of the mother, poor perception also affected the women.

Another study on the effectiveness of knowledge baby's birth weight in Mexico found that women who received poor antenatal care had a 76 % excess risk of low birth weight associated with premature delivery compared to those who received adequate antenatal care (Coria-Soto, Bobadilla, & Notzon, 2015).

Therefore, to promote the health and survival of mothers and babies, Kenya has adapted the WHO recommendations on ANC package that promotes interventions to address the most prevalent health issues affecting mothers and newborns (Oshinyemi et al., 2018). According to Mulima, N. P. (2014) the major goal of focused ANC is to help women maintain normal pregnancies through targeted assessment to ensure normal progress of child bearing cycle and newborn period. ANC services facilitates early detection of complications, chronic conditions and other potential problems that will affect the pregnancy. ANC Promotes individualized care to help maintain normal pregnancy progress in preventive measures, supportive care, health messages, counseling birth preparedness and complication readiness planning.

Women who utilized ANC services were able to recognize fever (OR = 2.8, 95% CI 1.4—5.5), persistent vomiting (OR = 2.35, 95% CI 1.19—4.64) and dizziness and fainting (OR = 1.18, 95% CI 0.57—2.42 as danger signs during pregnancy (WHO, 2013). Utilization of ANC services, however, was associated with awareness of danger signs in pregnancy because significant differences were noted in Islamabad when comparisons were made on women's knowledge on the danger signs of pregnancy between women who utilized ANC services and those who did not on their last pregnancy (WHO, 2019). Studies have linked low utilization to poor pregnancy outcomes, which ultimately lead to higher maternal mortality rates (Pell C, et al., 2013).

2. 5 Expectant women perception on ANC services provided

Utilization of ANC services would be affected by the perception of women on the services provided, the time she should visit the ANC clinic and the number of times she is supposed to visit. Paying for ANC services is perceived to be a factor to the low uptake of ANC services and the varied time of visit that differs across ethnic groups.

From a prospective cohort study in the Netherlands (Boerleider et al., 2013), delays were observed in the timing of first ANC by non-Dutch groups compared with ethnic Dutch groups of women although the service was universally accessible. The risk factors associated with delay were age below 20, poor language proficiency in Dutch, maternal education, multi parity, unplanned pregnancy, and unhappiness with pregnancy (Boerleider et al., (2013).

According to Gamba (2018), in Ningxia, China, Hui mothers were less likely to start ANC services in the first trimester (adjusted OR = 0.32, 95% CI 0.18—0.54) and less likely to receive five ANC contact visits (adjusted OR = 0.31, 95% CI 0.14—0.70). In

sub-Saharan Africa, women presenting for ANC services are most likely to wait until the second trimester, a substantial proportion showing up in the third trimester (Gamba, H. A., 2018).

While characteristics such as age and enabling resources contributes to variation in timing of entry to ANC, the preference for more or fewer visits is associated with parity, marital status, age, education, obstetric history, previous birth experience and timing of pregnancy. Late entry into ANC is a risk factor for pregnancy outcomes. Attending ANC less than three times has been associated with increased risk for pre-term maturity and delivery of low birth weight babies and caesarean delivery (Boerleider et al., (2013).

Gross et al., (2012) ascertained that women who perceived ANC to start in the first trimester were 67% and these were women who had good knowledge on ANC were 22% and neither group started ANC earlier than others. According to Wolde et al., (2019), this is a clear indication of how complex it is to make a decision to start ANC. Njiku et al., (2017) claims that in Niger Delta, 77% of the pregnant women start utilizing ANC in the second trimester and concurs with a Malawi Demographic and Health Survey, (2010) that 48% of the pregnant women start utilizing ANC services in the second trimester. In terms of the number of ANC contact visits in developed countries, 97% of the pregnant women make at least one antenatal visit and 99% of these pregnant women are delivered by skilled birth attendants. On the contrary, in developing countries, including Kenya, 49% of pregnant women make at least one ANC and two thirds of the same women are delivered by unskilled birth attendants (Njiku et al., 2017).

In Teso District (Kenya), studies on maternal health care utilization revealed that 67% of women, including adolescents attended ANC during the second trimester of their

pregnancies, 20.4% attended ANC during the third trimester while 14% never attended ANC services (Ikamari, (2013). The Kenya Demographic Health Survey results of 1998, shows that 40% of Kenyan women had not made any antenatal visits by the start of the sixth month of pregnancy (Ochako et al., 2016).

According to Alanazy et al., (2019), Cohort survey done to 1,562 prenatal women in five study areas (Ministry of Health dispensaries) in two divisions of Kwale region revealed that only 32% (506/1,562) of women reported to have attended at least one ANC contact visit but the rest had not attempted (Alanazy et al., 2019). According to Mohamed et al., (2015), 16.4 percent of pregnant women seek ANC services from the private sector and 47.1 % in public hospitals (KDHS, 2014).

Some considered antenatal care as an administration policy, thus they attended to achieve the policy requirement (WHO 2016, recommendation). Some of them considered it a waste of time due to ANC services protocols and delays to be served at antenatal care clinics ((Wekesa et al., 2018)).

The low attendance for ANC services combined with a positive relationship between ANC attendance and post-natal outcomes for women in Kwale region highlight the need for further research to understand reasons for attendance, non-attendance and also the strategies to be put in place to improve attendance for utilization of ANC services (Mwaniki et al., 2014).

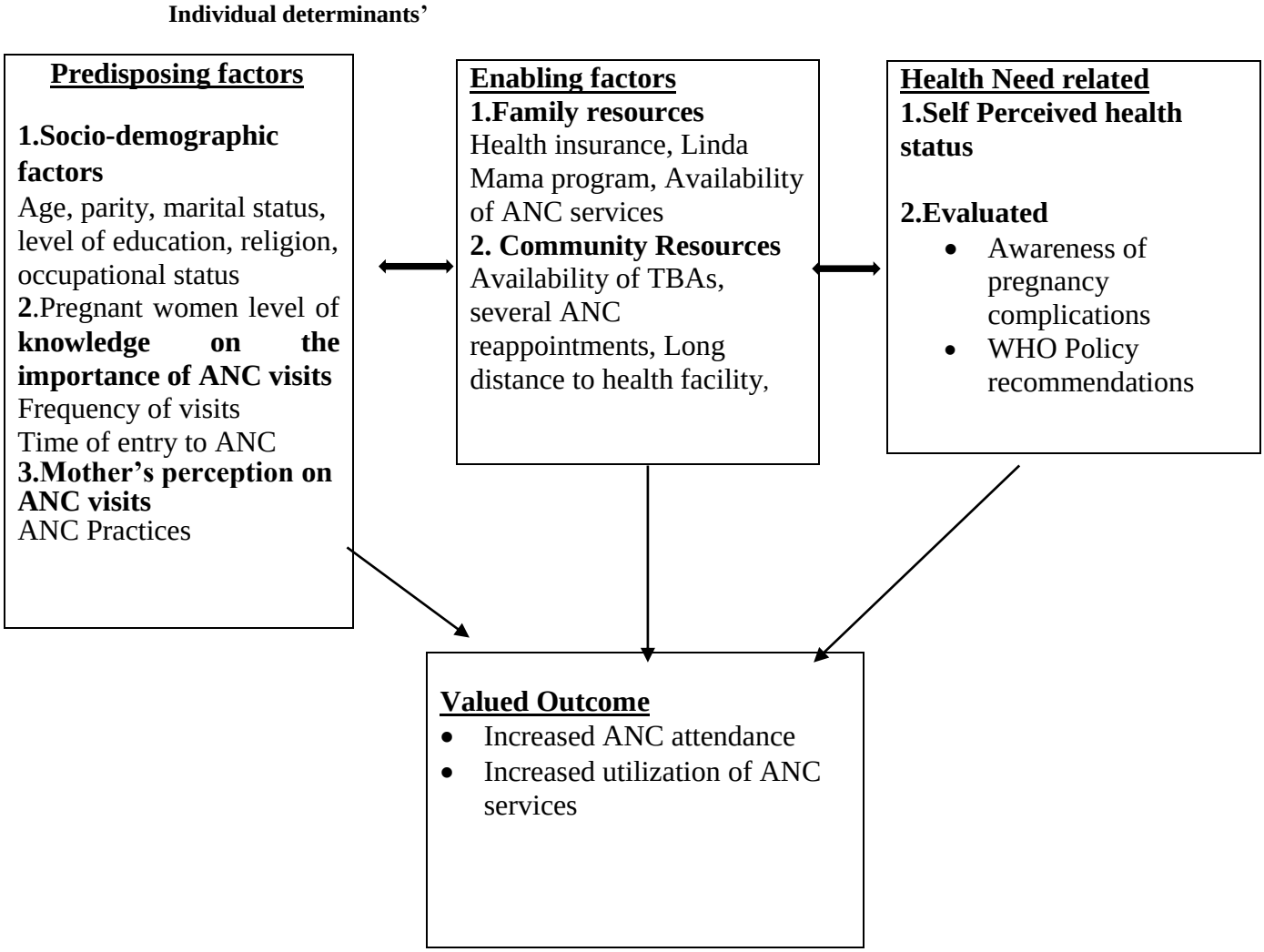
In South Africa, both health care providers and clients agreed that effective provision of comprehensive ANC services was hindered by a host of logistical problems. Common constraints expressed include shortage of human resources and high caseloads which leads to longer waiting times and loss of clients (Farzana et al., 2012).

In Kenya *Linda mama* programme was introduced in the year 2016 to help the mothers in the payment of ANC services which was seen as an enabling factor to the utilization of this service.

2.6 A conceptual Framework for the study

Conceptual framework refers to a set of concepts that are linked and described by broad generalizations which are formulated by an individual for a purpose (Rurangirwa, A. A., et al., 2017). The conceptual framework in this quantitative study explains the concepts pinned in the study, basing on cognitive theory that behavior is contingent upon; the value that an individual places on a desired outcome, and the belief that a behavior, if performed well, will result in the desired outcome, (Rurangirwa, A. A., et al., 2017). Furthermore, behaviors can be predicted based on information from determinants such as predisposing factors, enabling factors, need for care and behaviour change.

Figure 1 below gives an illustration of the conceptual framework for this study.



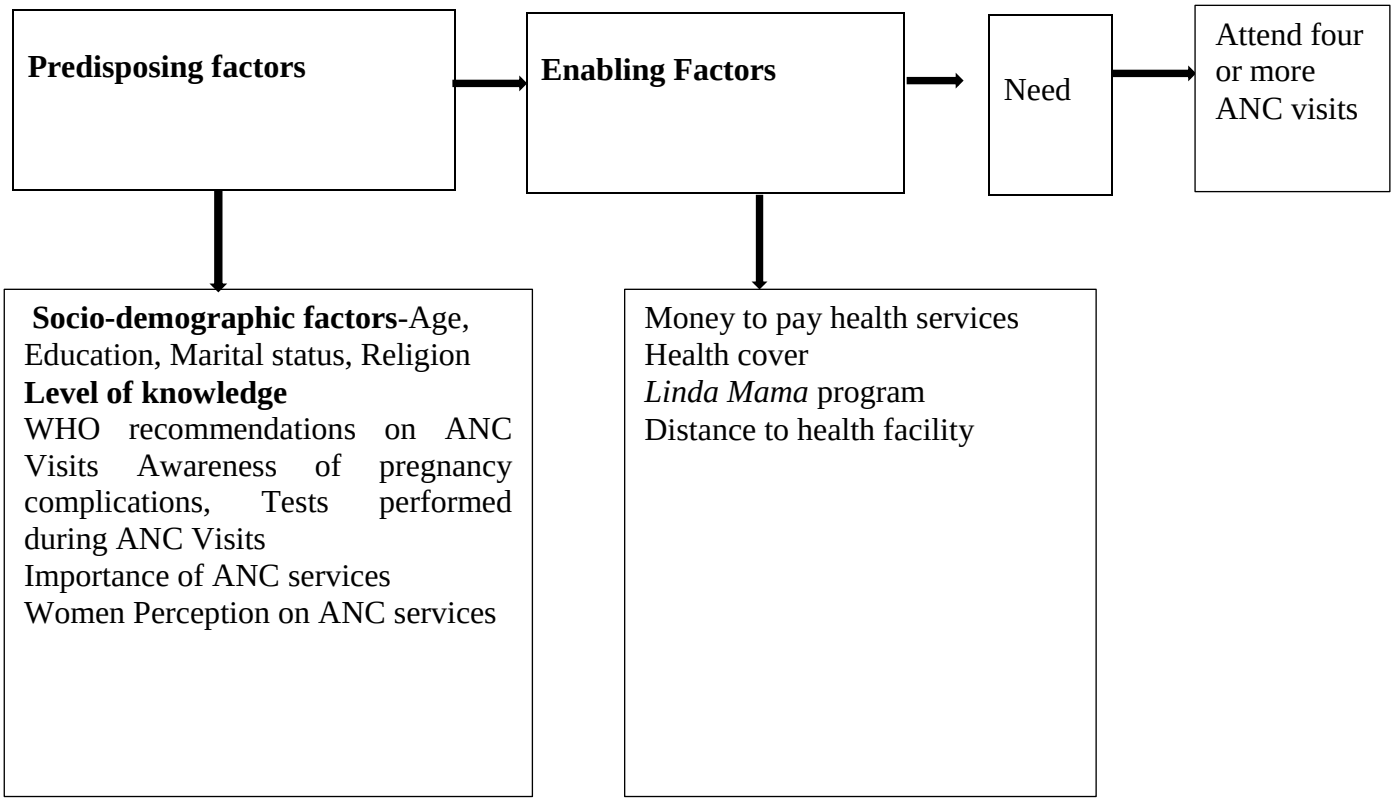
Adopted from; Rurangirwa, A.A., et al., (2017)

Figure 1: conceptual framework

2.7 Theoretical framework

A theoretical framework is a theory in the form of a model/paradigm that serves as the basis of study. It mentions the proponents of the study and their results. A theoretical framework is a representation of beliefs on how certain phenomena (or variables or concepts) are related to each other (model) and an explanation of why we believe that these are associated with each other (theory).

According to Andersen model (2014), health service utilization is a sequential and conditional function of three sets of factors: Predisposing (Demographic and social) factors, enabling (economic) factors, and need (health outcomes) factors.



Adopted from; Andersen R.M. (2014)

Figure 2: Theoretical framework

CHAPTER THREE

3.0: RESEARCH METHODOLOGY

3.1 Study Setting

Elgeyo Marakwet County is one of the Kenya's 47 counties. It is located in the former Rift Valley Province and its headquarters is Iten. Elgeyo Marakwet County has a total population of about 454,480 as per 2019 census and about 3,032 km^2. There are a total of 129 health facilities in the county with an average of 3.7 km distance from one health centre to another achieving the recommended World Health Organisation (WHO) on distance to access of health care (KDHS, 2019). Elgeyo Marakwet County has one County referral hospital (ICRH-Iten). There are six sub-county hospitals, one mission hospital (A.I.C Kapsowar), 28 health centers, 92 dispensaries, and 22 private clinics and 1 private faith-based hospital (Chesongoch) (County Health and Sanitation department; 2018).

Among the health facilities sampled were; ICRH as the only County referral hospital in the County and well equipped with the emergency and basic obstetric care services and the rest of the sub- counties refer their clients and patients to, hence purposively sampled. Iten is a diverse town which hosts several ethnic groups and has the highest population concentration of about 28, 421 and the antenatal women are about 4.2 % of the population and therefore a good area of study since the study yielded to proportionally half of the sample size.

The County has six sub-county hospitals from the four constituencies. In Keiyo North (Tambach sub- county hospital), Keiyo South (Kamwosor, Kaptarakwa and Kocholwa sub- county hospital), Marakwet East (Tot sub- county hospital) and Marakwet West

(Chebiemit sub- county hospital) that provide basic emergency and obstetric care services.

3.3 Study population

The study targeted 8588 women attending the Post Natal Care clinics from the sampled facilities.

3.4 Research Design

This study employed a cross sectional study design that allowed information about the target population to be obtained at that point in time and the collection of data to provide answers on the current status of care (Kothari, 2004). This design was suitable because it enabled collection of data regarding the study objectives and covered a good number of the study sample to allow an in-depth understanding of research under study.

3.5 Sample Size Determination

The sample size of a study is a section of the population that is drawn to make inference or projections to the general population. The sample size for this study is was calculated using the Fishers' formula:

Z being the confidence limits which in this study was 95% level of confidence and 1.96 as a critical value.

P as the assumed prevalence/proportion of the dependent variable

Q as the acceptable deviation from the assumed proportion (1-0.579=0.421)

Estimated Prevalence (p) =57.9 1-p=q No. of standard deviation (z) =1.96

Margin of error (d_2) =0.05 n=desired sample size

$$n = \frac{Z^2 pq}{d^2}$$

$n = \frac{(1.96)^2 x (57.9) x (42.1)}{(0.05)^2} = 374$

But population (N=8588) is less than 10,000 therefore Adjusted Finite Population Correction (FPC) was used. AFC is sampling without replacement from more than 5% of the finite population. It's needed because the standard limit theorem doesn't hold and the standard error of the estimate (e.g. the mean or proportion) will be too big. FPC captures the difference between sampling with replacement and sampling without replacement.

The general formula is: $FPC = ((N-n)/(N-1))^{1/2}$ (Kandethody, M et al., 2012).

$n_s = Nn/N+n-1$ $n_s = 8588*374/8588+374-1$

$= 358$

3.6.1 Sampling Technique

The study employed the cluster, purposive and systematic sampling.

The study was conducted in three public health facilities providing PNC services to represent the County. The health facilities were clustered into County and Sub-County hospitals. The only County referral hospital (Iten County Referral Hospital) was purposively sampled because it has a high volume number of clients.

Elgeyo Marakwet County has four constituencies namely Marakwet East, Marakwet West, Keiyo North and Keiyo South. From thee four constituencies there are the health facilities were clustered into Sub- Counties, Health Centres and Dispensaries. The Sub-County hospitals were purposively sampled and two Sub-County Hospitals were further sampled because of their high volumes of clients. The sub-counties sampled were (Kamwosor- Keiyo South and Chebiemit- Marakwet West).

Data for the month of June, 2019 from each selected facility before the year of study was used to calculate the total representative sample size for the county (sampling frame). These enabled the PI to collect data from the mothers who attended public health facilities for the service and meet the inclusion criteria in EMC from the three identified facilities (collection of representative data).

3.6.2 The Sampling Procedure

After the required sample size from each facility had been calculated, systematic sampling technique was used to identify the participants. In Systematic sampling method every k*th* element in the frame is selected, where *k* is the sampling interval, that is k=N/n (Mustafa, S.A., 2016). Participants who met the criteria were therefore identified from MCH because they had the required characteristics until the sample size was achieved.

Therefore, each facility's sample was calculated depending on its sample size. For example; in ICRH, the sample size is 225, then if data was collected in three months 225/3=75 per month. Each week was be 75/4=18.75 was about 19 participants. Systematic sampling was used to select the participants. In systematic sampling method every k*th* element in the frame is selected, where *k* is the sampling interval, that is k=N/n.

In ICRH	k=N/n	k=5400/225	k=24
In Chebiemit	k=N/n	k=1171/74	k=24
In Kamwosor	k=N\n	k=1417/59	k=24

Table 1: Sample size

Facility	Target population	Sample
ICRH	5400	**225**
Chebiemit	1771	**74**
Kamwosor	1417	**59**
Total	**8588**	**358**

3.7 Eligibility Criteria

3.7.1 Inclusion Criteria

1. Those mothers who were 18 years to 49 years and had consented.
2. Mothers of 0-12 months' post-delivery.
3. Mothers who sought PNC services in health facilities in EMC.

These group is believed to have experienced pregnancy before and have passed through the Antenatal care stage and are the right people to answer the questions pertaining ANC care and pregnancy related issues.

3.7.2 Exclusion Criteria

1.Guardians and fathers who brought in babies for Child welfare services

2.Patients seeking other services in the hospital.

3.Pregnant women seeking ANC Services.

These people are believed to have no adequate information from the questions asked about ANC services.

3.8 Variables

3.8.1. Dependent variables

Dependent variables included the demographic data of patients, mothers' level of awareness and perception on the importance of ANC services.

3.8.2 Independent variables

Independent variables were perceived quality of outcomes and reduced maternal and neonatal morbidity and mortality.

3.9 Data Collection

3.9.1 Data collection procedure

Three trained research assistants (RA) collected the data. All the three research assistants were Registered Community Diploma Nurses who had just completed their Nursing Council examinations but had not yet been employed. Each one was selected from the study sites respectively and were trained for two days at one venue. The RA's were trained on how to conduct themselves during the interviews, ethical issues, dressing code on personal issues and how to approach respondents. Importantly they were taken through what the study was all about, the study objectives and sample size for each site, sampling technique to be used, inclusion and exclusion criteria, research instruments to be used, how to fill them and check for completeness for purposes of reliability. The research questionnaires were administered systematically to collect the data from the respondents in all the sampled areas.

3.9.2 Research Instruments

Structured and unstructured questionnaires, which included questions related to the research specific objectives were developed and used to collect data. The specific objectives addressed socio-demographic factors like age, marital status, the highest level of education, employment and religious affiliation. Level of women's knowledge addressed questions like if a woman was tested for HIV, blood group, urine tests, sexually transmitted disease and their significance and if they were aware of any pregnancy complication dangers signs.

Expectant women perception on ANC services like the time she should visit the ANC clinic and the number of times she is supposed to visit.

3.9.3 Validity and Reliability

The content and construct validity of study, which is based on the adequacy to which the statements, questions and indicators of the research instrument measures the attributes of the study (Heale and Twycross, 2015). This was ensured by subjecting the instruments to critique from experts in the department of public health and institutional research ethics Committee at Moi University and Iten County Referral Hospital. The items were revised and improved according to advice and suggestions made. According to Heale, R. and Twycross, A., (2015), Reliability which is the extent to which a measure contains variable errors, was improved through a pilot study and pre-testing of the research instruments. The sum of the scores of the sets of data was correlated by use of Pearson Product Moment Correlation (PPMC). A correlation coefficient of ≥ 0.5 was considered reliable. In this study, a reliability coefficient of 0.76 was found showing that the instruments were reliable (Taber, 2018).

3.9.4 Pilot Study

To ensure data quality, the data collection tools were pretested with 10% of the total sample size (10/100*358=36) (Farooq, (2017). The pilot study was done at Uasin Gishu District Hospital, Uasin Gishu County by administering the tools to the simple randomly selected clients as per the inclusion criteria.

3.9.5 Data Analysis and Presentation

Data from the questionnaires were cleaned, coded and analyzed quantitatively through descriptive and inferential statistics. Bivariate association of independent variables and 4 or more ANC visits was examined using Chi-square test. Association between variables was obtained using Chi-Square and the results were presented using tables and pie charts.

3.10 Ethical Considerations

The researchers sought approval to conduct the research from Moi University Institutional Research and Ethics Committee, ICRH hospital board, Kamwosor hospital and Chebiemit sub-county board of management. This was done before the data collection process. The information generated was kept confidential, anonymity observed during the data collection process and the participants were not required to identify themselves by name or any other personal identification details for all was meant for the study purpose only.

CHAPTER FOUR

4.0 RESULTS

4.1 Introduction

The findings of this study on the barriers to ANC utilization among women accessing public health institutions in Elgeyo Marakwet County are presented in this chapter. Primary data was collected using structured and unstructured questionnaires and analyzed using descriptive and inferential statistics.

A total of 353 out of 358 surveys were completed and returned, yielding a 98.6% response rate.

4.2 Socio-demographic factors affecting the utilization of Antenatal care (ANC) services

Socio-demographic data collected from respondents included; age, marital status, highest level of education, religion, occupation, number of months pregnant when attending first ANC, Reasons for late attendance and hospital attended, Months pregnant when attending 1st ANC clinic, reasons for late attendance, Number of times attended ANC clinic, reasons for decision made.

Table 2: Socio-demographic factors and Utilization of ANC services: Detailed Information of the Respondents (n=353) P< 0.05

Information		n=353 Frequencies	Percentage %	ANC < 4 Times	ANC > 4 Times	P value
Age in years	<20	50	14.1	25	25	.643
	20 to 29	170	48.4	86	84	
	30 to 39	109	30.8	54	55	
	40 to 49	24	0.7	20	04	
Marital status	Single	86	24.3	46	42	.001
	Married	253	71.7	128	125	
	Divorced	7	2.0	02	05	
	Separated	7	2.0	02	05	
Highest level of Education	Primary	75	21.2	38	37	.001
	Secondary	174	49.2	88	86	
	College	71	20.2	36	35	
	University	33	9.4	27	16	
Occupation	Employed	203	57.5	103	100	.001
	Casual	77	21.8	39	38	
	Student	18	5.1	09	09	
	Housewife	55	15.6	28	27	
Religion	Protestant	171	48.5	87	84	.001
	Catholic	140	39.0	72	68	
	Muslims	17	4.9	08	09	
	SDA	20	5.6	10	10	
	None	05	2.0	02	03	
Hospital attended ANC	Public hospital	165	46.7	84	81	.001
	health Centre	114	32.2	58	56	
	Dispensary	66	18.7	33	33	
	TBA	06	1.7	04	02	
	Others	2	0.7	01	01	
Months pregnant when attending 1st ANC clinic	>1	9	2.6	04	05	.001

	1 to 3	85	24.0	43	42	
	4 to 6	211	60.0	107	104	
	7 to 9	48	13.4	45	03	
Reason for late attendance	lack transport	18	5.0	10	08	.001
	No money	7	2.0	03	04	
	Culture	25	7.0	13	12	
	Too far	35	10.0	18	17	
	TBA	9	3.0	04	05	
	Too busy	33	9.0	17	16	
	I chose to	187	53.0	95	92	
	Don't know	39	11.0	20	19	
Number of times attended ANC clinic	0	10	2.84	10	0	.001
	1 to 3	169	47.87	169	0	
	4 to 6	165	46.75	00	165	
	7 to 9	9	2.54		009	
Reason for the decision	ToAvoid reprimands from HCWs	14	3.97	07	07	.001
	Had participate labour	1	0.03	01	0	
	No fare	100	28.4	51	49	
	Far facility	238	67.6	120	118	

4.3 Characteristics of participants

Nearly half (48 %) of the women were aged 20-29. Almost three quarters (71 %) of the women were married, while almost half (49 %) had secondary education as their highest level of education. Over half (58%) of the women were employed and nearly half (49 %) were protestants. Almost half (46 %) visited public hospitals and over half (60 %) attended first ANC at 4 to 6 months gestation of pregnancy and most (53 %) of them had chosen to visit at that time hence nearly half (48 %) had less than 4 ANC and more than half (68 %) claimed that the health facilities were far.

4.4 Prevalence of 4 ANC coverage

From a total of 353 respondents, 174 (69 %) women received at least 4 ANC visits, while 10 (3 %) did not attend any ANC. The coverage of 4 ANC visits among the majority aged 20-29 were only 84, higher than for the older age group. Majority (71.7%) of the respondents were married and only 125 of them had 4 ANC visits but still the divorce, single and separated also had a high percentage of the 4 ANC visits.

Majority (48 %) of the women had secondary level of education but only 86 had 4 ANC visits. Similarly women who were employed were the majority (203) but only (100) were able to complete the 4 ANC visits. Most (171) of the respondents were protestants but only (84) were able to complete the 4ANC visits and the non-religious were the least but still (2) had 4 ANC visits.

Despite the fact that majority (165) visited the public health facility between 4 to 6 months for the first time, only (104) had 4 ANC visits and (92) had chosen to do so at that time. Majority (169) attended ANC 1-3 times, 165 attended 4 to 6 times and only 9

managed to do between 7 and 9 times with the claim of 118 that the facilities are too far, other reasons were less significant.

In bivariate analysis, a number of variables, showed statistically significant association in the Utilization of 4 ANC visits. Employment, religion, the gestation that a woman started ANC clinic and the decision made to attend ANC are some of the barriers of ANC services in Elgeyo Marakwet County.

4.5 The influence of pregnant women level of knowledge on the services offered and the utilization of ANC services

A number of areas included ANC services received, pregnant women responses on whether there would there be unforeseen problems, dangers signs during pregnancy, how many months pregnant a mother should visit antenatal care clinic. The findings were tabulated in table 4.6

Table 3: Responses on mother's level of knowledge and Utilization of ANC services

Statement	Response	n=353 Frequency	Percentage %	ANC <4	ANC >4	P value
Services received	HIV Test	303	85.6	154	149	0.001
	blood group test	203	57.5	103	100	
	Urine	307	87.0	156	151	
	STDs	274	77.7	139	135	
	All tests	67	18.9	34	33	
	None	49	14.2	24	25	
Would there be foreseen problems	Yes	320	90.6	162	158	0.001
	No	10	2.8	05	05	
	Don't know	23	6.6	12	11	
Dangers signs	✓ Heavy bleeding	219	62.02	111	108	0.001
	✓ Severe headache	209	59.3	106	103	
	✓ Blurred vision	151	42.9	76	75	
	✓ Convulsions	140	39.6	71	69	
	✓ Swollen Hands and feet	208	58.9	106	102	
	✓ High fever	162	45.8	78	84	
	✓ Loss of consciousness	120	33.9	61	59	
	✓ Difficulty in breathing	120	33.9	61	59	
	✓ Severe weakness	205	58.07	104	101	
	✓ Severe abdominal pain	206	58.3	105	101	
	✓ Reduced/fast foetal movement	195	55.2	99	96	
	✓ Water breaks without labour	173	49.03	88	85	
	✓ Don't Know	1	0.03	01	0	

4.5.1 Relationship between pregnant women level of knowledge and utilization of ANC services

There is no significant relationship between level of knowledge on the services offered and utilization of ANC services. The results were summarized in table 4.7

Table 4: Correlation Coefficient between pregnant women level of knowledge on the services offered and utilization of Antenatal care services

Pregnant women level of knowledge on services offered	Utilization of Antenatal care services
	$r = .828^{**}$
	p = .001
	n = 353

This shows that there was a strong and positive correlation between Respondents' level of knowledge on the services offered and utilization of Antenatal care services (r = .828; p = .001). This shows that at 95% confidence level, the value of women's level of knowledge on the services offered was .828 showing a strong correlation with utilization of Antenatal care services. The values shows a positive correlation meaning that increased women's level of knowledge lead to increased utilization of antenatal services.

4.6 Pregnant women perception on ANC services provided

The included whether the ANC services were necessary, whether it was necessary for expectant mother to be tested for HIV, how many months an expectant mother should have attended ANC and if they had paid for the services. The findings were as shown in table 4.8.

Table 5: Post natal women perception on ANC services provided

Statement	Response	n=353 Frequency	Percentage %	ANC <4 times	ANC >4 times
Were services necessary	Yes	289	81.8	147	142
	No	64	4.2	57	07
Was it necessary to test for HIV	Yes	341	96.6	173	168
	No	12	3.4	02	10
How many months pregnant woman should visit ANC	1 to 3	78	22.02	40	38
	4 to 6	137	38.9	69	68
	7 to 9	37	10.4	19	18
	As early as possible	101	28.68	51	50
Number of times a pregnant woman should attend ANC	Once	39	11.05	20	19
	Three or less	148	41.93	74	72
	Four or more	111	31.44	57	54
	As many as possible	55	15.58	28	27
Paid for ANC service	Yes	191	54.1	105	86
	No	162	45.9	75	87

The results indicated that there was a correlation between the women's perception and the 4 ANC visits.

CHAPTER FIVE

5.0 DISCUSSION

5.1 Introduction

This chapter discusses the findings on the barriers to antenatal service utilization among women attending public health institutions in Elgeyo Marakwet County.

From a total of 353 respondents, 166 (47%) received at least four ANC visits, while 10 (3%) did not receive any ANC, which is significantly lower than the previous research of 2018 (57.9%) in the same county and still lower than WHO requirements but higher than recent national studies.

5.2 Socio-Demographic Factors Affecting the Utilization of ANC Services

The findings showed that the majority (48.4%) of pregnant women visiting antenatal clinics in Elgeyo Marakwet County were young women aged 20 to 29 years old, but only 24% completed the four ANC visits, similar to a study done in Somalia, where the majority of pregnant women were aged 25-29 years (30.2%) (Fardoswa, 2016).

However, contrary to our findings, a number of studies found that increasing age was associated with increased consumption of ANC services (Birmeta et al., 2013). For example, a study from Central Ethiopia discovered that the odds of attending ANC were 1.2 times higher (OR=1.168) for women aged 20-34 compared to those aged 15-19 (Birmeta et al., 2013).

For example, a study from Central Ethiopia reported that the odds of attending ANC were 1.2 times higher (OR=1.168) for women aged 20-34 compared to women aged 15-19 (Birmeta et al., 2013). Similarly, a study conducted in Vietnam reported that older women (those above the age of 25) were more likely to utilize ANC services. Similarly, a

Chinese study revealed that women between the ages of 25 and 30 and women older than 30 were more likely to have utilized ANC services appropriately.

Furthermore, the majority of the women investigated (71.7%) were married, yet only 35.4% (125) had four or more ANC visits. According to a study conducted by Worku et al. (2013), married women commenced ANC earlier than unmarried women in both teens and adult women. In other studies, researchers discovered that married women utilized ANC services over three weeks later than unmarried women (Gross et al., 2012).

Furthermore, the majority (49.2%) of pregnant women seeking ANC services in Elgeyo Marakwet County had a secondary level of education, which is consistent with other studies, but only 23.4% were able to complete four ANC sessions Birmeta et al., (2013). The number of times a woman was to attend ANC was determined primarily by her level of education. Furthermore, WHO and UNICEF (2013) stressed that education and liberation in their broadest meaning could affect everything, including the full engagement of women in their health (McLeod & Wright., 2016).

In terms of employment status, the majority (57.5%) of young pregnant women seeking ANC services in Elgeyo Marakwet were self-employed, but only 100 of them completed 4ANC visits, which is consistent with previous research that employed women attend ANC clinics more than low-income or non-income earning women (Galle, 2015).

Furthermore, the findings revealed that nearly half of the respondents (49%) were Protestants, closely followed by Muslims, with the remainder split among others. This was also found in an Ethiopian study, which claimed that people of Orthodox/Catholic, Muslim, and Protestant faiths used more maternal health services than those of traditional

beliefs (Kalule-Sabiti. I, 2014), but Birmeta et al., (2013) discovered that women of traditional beliefs had a 50% lower chance of receiving antenatal care services than those of Orthodox/Catholic faiths. Religion is thought to be related to the use of maternal health care services in general. A growing number of recent research papers have highlighted the impact of religion and culture on sexual and reproductive behavior.

Buchanan, M. E. (2015) postulated that religion influenced ANC services in part because of inequalities in sexual and reproductive health outcomes. For example, a study found that 4.9% of Muslim women were less likely to receive antenatal care due to a lack of privacy (exposure of legs and arms) was a taboo for Islamic women, which was also underlined in the study (Kalule-Sabiti. I, 2014).

Furthermore, the findings revealed that the majority of pregnant women interviewed (47%) went to public hospitals to receive antenatal services, yet only 23% received four ANC services. Recent studies have also shown that the majority of women visited public health facilities, which was connected with a woman's socioeconomic status (Galle, 2015). This means that the public hospital's antenatal care services are more inexpensive, accessible, and welcoming.

Similarly, the findings indicated that the majority (60%) of the pregnant women attended ANC clinic between the fourth and sixth month, which is slightly lower than other recent studies done in other countries (Gross et al., 2012), explaining why only 29% were able to have the four ANC visits.

Moreover, the findings indicated that the majority (53%) of pregnant women in Elgeyo Marakwet County attended the clinic between 4 and 6 months based on their personal decision rather than the influence of other members of society. The results also showed that nearly half (48%) of none-first-time pregnant women sought ANC services 1 to 3 times during their pregnancy, which is consistent with a study done in China (Gross et al., 2012).

When asked why they were late for ANC services, 53% of respondents were found to have decided to visit the ANC clinic at that time for their own undefined reasons, allowing only 26% to have 4 or more ANC appointments.

Almost half of the expecting women (48%) reported to the ANC clinic one to three times, and 3% didn't attend at all, putting them at risk of a poor ANC outcome. According to the study, nearly half of the respondents (49%) completed the four ANC visits, which may correspond to a study done by (Kithua A., 2015), that ANC coverage is a success story in Africa, because more than two-thirds of pregnant women (69%) have at least one ANC contact visit, thus falling short of the four ANC visits target.

The majority (68%) of respondents who responded to why they went the ANC clinic 1-3 times stated that the health facilities were too far away, allowing just 33% to have the four ANC visits. In comparison to other studies conducted in other countries, persons residing more than five kilometers distant from a dispensary were less likely to go, regardless of education (Bustreo et al., 2013). A tiny percentage (1.7%) chose to visit a conventional birth attendant, while 28% stayed at home due to the distance from the medical institution and lack of transportation, implying that the further the facility was

located, the less ANC visits were performed. As a result, the further the facility was located, the lower the ANC.

Distance to an antenatal care service provider was a hindrance to pregnant women, hence it was recommended that they travel five to ten kilometres to the health care facility (Muriuki, 2016). Distance from antenatal care providers was connected with perceived effectiveness of the service delivery system in some research (Bustreo et al., 2013). However, several research indicated that not all pregnant women used the closest antenatal care facility, hence distance was not found to be significantly associated with poor antenatal care attendance (Mathe, 2017). A considerable proportion (47%) of pregnant women residing within three kilometres of a prenatal care facility did not visit for a variety of reasons (Mathe, 2017).

5.4 The influence of mothers' level of knowledge on services offered on the utilization of ANC services

The second objective of the study was to investigate the impact of knowledge level on ANC service utilization in Elgeyo Marakwet County. The majority of the women (86%) were aware that they should be tested for HIV, however only 149 (42%) had four ANC visits, which is comparable to other poor nations. When asked if there would be any predicted complications, almost all (91%) of the respondents replied yes, and 158 (45%) had four ANC visits, raising the question of why there is such a low turnout despite the information.

The majority of respondents (62%) were aware of excessive bleeding during pregnancy as a warning indication, although only 108 (31%) had four ANC visits. According to the findings, the majority of the women obtained the bulk of the required tests during

antenatal care, but just a few received all of them. This meant that most facilities had laboratories where the essential tests could be performed, however not all tests were performed.

Furthermore, the findings revealed that while the majority of women (91%) were aware of potential risk symptoms during pregnancy, only 62% attended the necessary four or more ANC visits. According to Mihret H. and Mesganaw F. (2018), women lacked awareness about danger indicators during pregnancy, labor, and the post-partum period, which impeded treatment and influenced the outcome. These delays were caused by a variety of factors, including financial concerns, a lack of infrastructure and services, and a lack of understanding about maternal health issues in the community and the family.

The woman, her husband, and family members needed to be aware of the risk signs associated with pregnancy, labor, and the post-partum period. According to an Ethiopian survey, less than a quarter of respondents were aware of the risk signs associated with pregnancy, labor/childbirth, and the post-partum period (Mihret H. and Mesganaw F. 2018).

According to Walker et al. (2013), various research have investigated the association between antenatal care attendance and access to information. The conclusion was that inadequate information about the need of prenatal services, as well as cultural barriers of ethnic groups, may have been among the causes impeding antenatal care utilization in various nations. Antenatal care attendance was noted to be underutilized due to pregnant women's inadequate understanding of the objective of the ANC program. A similar observation was made in rural India (Walker, R. et al., 2013).

5.4.1 Relationship between effects of women level of knowledge on the services offered and the utilization of ANC services

The study discovered a substantial link between women's level of knowledge about the options available and their use of ANC services. This demonstrated that when expecting women's knowledge of the services available increased, so did their utilization of 4 ANC services.

5.5 Influence of mothers' perception on utilization of ANC visits

The third objective was to determine the impact of mothers' perceptions on ANC service usage. The findings revealed that the majority of respondents (82%) regarded ANC services were necessary, and 142 (40%) completed the prescribed four ANC visits. That demonstrates they recognized the significance of receiving prenatal care. It also indicates that public health professionals did a good job of raising awareness about the need of ANC services.

Further, the findings indicated that the majority of the women (97%) agreed HIV testing was required, yet only half (48%) completed the four ANC visits, indicating that more than half (52%) were aware of the need of HIV testing but did not complete the appointments. This could imply that a woman may only visit once and be tested during the initial visit, explaining why the number of HIV tests was so high. Although 97% of those interviewed thought an HIV test was important, just half had all four ANC visits. However, there was some concern that (3.4%) of pregnant women did not understand the significance of knowing their HIV status.

According to Yaya, S. (2019), the impact of ANC visits has been more significant than ever as ANC services include HIV counselling and testing. Women who did not attend

ANC were less likely to be informed of the hazards of HIV transmission from mother to child during pregnancy, childbirth, and nursing.

The study also attempted to determine the impact of women's perceptions on the number of months an expectant woman should attend her first ANC clinic visit. The results indicated that the majority (39%) of expectant women made their first visit to the antenatal clinic between the fourth and sixth months of pregnancy, making completing the four ANC visits unfeasible due to the clinic commencing late. Only 68 women had four ANC visits, whereas the majority (53%) elected to see the clinic between 4 and 6 months.

The survey also intended to ascertain the perception of the number of times an expectant woman visited a health facility during her pregnancy. The data demonstrated that the majority of respondents (42%) believed that expecting women should visit the ANC clinic three times or less before delivery, and that 20% of those who held this belief had four ANC visits. 24% said visiting a prenatal care clinic more than four times was advised, 15.55% thought as many times as feasible, and 5.3% thought once before delivery was sufficient. The data revealed that the majority of respondents believed they should visit a prenatal care clinic three times or less before delivery, resulting in only 72 women having four ANC consultations.

When asked if expecting women paid for ANC services, nearly half (49%) claimed they were charged, 46% said they did not pay, and 4.8% stated they did not comment. According to the statistics, the majority (49%) of pregnant women in Elgeyo Marakwet County paid for prenatal care services, reducing the number of ANC visits to 24%. This

suggested that prenatal care services in Elgeyo Marakwet County were not free, which deterred many pregnant women from obtaining and finishing the four ANC sessions.

CHAPTER SIX

6.0 CONCLUSION AND RECOMMENDATIONS

6.1 Conclusions

Socio-demographic factors include age, marital status, educational level, religion, employment, hospital attended, number of months pregnant when attending ANC, reasons for decision, number of times, why, and how many had 4 ANC visits, and distance to the facility have been identified as barriers to 4 ANC services in EMC. Because the majority of the characteristics such as expected issues and danger indicators were evaluated very high (96%; 62%), nearly half (45%; 31%) of the women did not attend the four ANC visits in each category.

Finally, the study concluded that pregnant women's perceptions on the necessity of ANC services offered at clinics and HIV testing, the number of times to attend ANC, and the payment of services all influenced the utilization of the four ANC visits.

6.2 Recommendations

Based on the findings, the report proposes the following policy suggestions.

1. There is a need to focus on universal coverage by eliminating financial obstacles that make it difficult for mothers to use the service by increasing free and accessible antenatal care services that could encourage more expectant women to seek the services.
2. The Government of Kenya, through the Ministry of Health, is responsible for educating health care personnel on the necessity of using ANC services, which will aid in increasing ANC service use.

3. The government, through the Ministry of Health, should educate pregnant women about safe parenthood, the necessity of utilizing antenatal care services, and promote knowledge about the availability of such services in all health service delivery points.
4. There is a need to integrate ANC and laboratory services to ensure all pregnant women's ANC profiles may be completed on time for early detection of any pregnancy-related complications. The result can be accomplished by mapping and identifying areas with specific needs, and then organizing for in-reach or out-reach services.

6.3 Suggestion for further study

Based on the findings, the study recommended the following areas for additional investigation.

1. The study suggests that a comparable study be conducted in other countries to compare the results.

2. An investigation on the quality of antenatal care services in Elgeyo Marakwet should be carried out.

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APPENDICES

APPENDIX 1: CONSENT FORM

My name is Sawe Angela J. a Master of Public Health (MPH) Student from Moi University, Eldoret.

I am here to carry out a study on the Barriers of utilization of ANC services in Elgeyo Marakwet County, Kenya.

Kindly your responses from the tools used will be of great importance in order to inform policy makers and other stakeholders on how to ensure timely management of pregnancy and child birth complications to reduce maternal and neonatal mortality rates in Elgeyo Marakwet County and in Kenya at large. Therefore, be sincere when responding as the information will be used for this purpose only.

Confidentiality will be maintained throughout the interviews thus no names of persons will be required. You are free to choose to participate or not in the study. Thanks.

Are you willing to participate in this study?

Yes [ ]

No [ ]

If yes, Signature……. Date…….

APPENDIX 2: QUESTIONNAIRE

Instructions: Kindly fill the following form by ticking appropriately.

Confidentiality: The responses provided will be strictly confidential. No reference will be made to any individual(s) or organization in the report of the study.

Section A: Questions related to Socio-demographic, cultural and economic characteristics

1. How old are you (years) > 19 ( ) 20-29 ( ) 30-39 ( ) 40-49 ( )
2. What is your current marital status…….

   Single ( ) Married ( ) Divorced ( ) Separated ( )
3. What is the highest level of education that you completed? Primary ( ) Secondary ( ) College ( ) University ( )
4. What is your religious affiliation? Catholic ( ) Protestant ( ) Muslim ( ) none ( ) others (Please specify)……
5. What do you do for a leaving? Employed ( ) Self-employed ( ) Casual ( ) Others specified ----------

Section B: Questions related to the mothers level of awareness on the importance of ANC services

6. Did you go for ANC services during the last pregnancy? Yes ( ) No ( )
7. Where did you go for your ANC services? Public Hospital ( ) Private hospital ( ) Health Centre ( ) Dispensary ( ) TBA ( ) others specify …….
8. How many months pregnant were you when you first received ANC? > 1 Month ( ) 1-3 months ( ) 4-6 months ( ) 7-9 months ( )

9. If answer to Question 10, first ANC attendance for service is three or more months when pregnant, why did you chose to go at this time? Lack of money for transport ( ) Lack of money to pay for services offered at the facility ( ) Culture does not allow early exposure ( ) The health facility is too far ( ) Preferred a TBA than health worker who has a bad attitude ( ) My schedule is too busy during the week ( ) I chose to attend at that time ( ) Did not know that it was necessary to go early ( )
10. With the pregnancy of this child, how many times did you attend the ANC clinic? 0 ( ) 1-3 ( ) 4 -6 ( ) 7-9 ( )
11. If you stayed at home or visited the TBA, why did you make such a decision? To avoid reprimands from health worker because I did not have an ANC book ( ) had a precipitate labour ( ) did not have fare to go to hospital ( ) the distance to the health facility is far ( )
12. During the ANC visits what services did you receive? HIV tests ( ) Blood group tests ( ) Urine tests ( ) STD tests ( ) All ( ) None ( )

Section C: Questions related to the clients perception on utilization of ANC services

13. In your own opinion, were the services necessary...? Yes ( ) No ( )
14. Do you think there could be unforeseen problems related to pregnancy that could endanger the life of a pregnant woman if a mother do not attend ANC? Yes ( ) No ( ) Don't Know ( )
15. (If answer to 14 above is Yes…) what are some of the danger signs which can occur in pregnancy that could endanger the life of the pregnant woman if immediate care during ANC visits is not sought? (Probe and tick all that apply)

Heavy bleeding.……01

Severe headache ……..02

Blurred vision……..03

Convulsions…….04

Swollen Hands and feet …..05

High fever ……...06

Loss of consciousness……..07

Difficulty in breathing ……08

Severe weakness ……..09

Severe abdominal pain …….10

Reduced/fast fetal movement…11.

Water breaks without labour ….12.

Other (specify) ……...13

Don't Know ...……14

None ……...15

16. In your opinion, how many months pregnant should an expectant mother first visit ANC clinic? 1-3 months ( ) 4-6 months ( ) 7-9 months ( ) As early as possible ( )
17. In your opinion, how many times in total should a pregnant woman attend ANC in the entire pregnancy period? Once ( ) Three or less ( ) Four or more ( ) As many as possible ( ) as recommendation by provider ( ) others ……..…
18. Did you pay for ANC services? Yes ( ) No ( )

APPENDIX 3 QUESTIONAIRE TRANSLATED TO KISWAHILI

Kiambatisho 1: Fomu ya idhini

Jina langu ni Sawe Angela J. ni Mwalimu wa Wanafunzi wa Afya ya Umma (MPH) kutoka Chuo Kikuu cha Moi Eldoret.

Niko hapa kufanya uchunguzi juu ya Vizuizi vya utumiaji wa huduma za ANC katika kaunti ya Elgeyo Marakwet, Kenya.

Kwaheri majibu yako kutoka kwa vifaa vilivyotumiwa itakuwa muhimu sana ili kuwafahamisha watunga sera na wadau wengine juu ya jinsi ya kuhakikisha usimamizi wa wakati unaofaa wa ujauzito na matatizo ya kuzaliwa kwa watoto ili kupunguza vifo vya akina mama na watoto wachanga katika Kaunti ya Elgeyo Marakwet na Kenya kwa jumla. Kwa hivyo, kuwa waaminifu wakati wa kujibu kama habari itatumiwa kwa sababu hii tu.

Usiri utadumishwa kwa mahojiano yote kwa hivyo hakuna majina ya watu watakaotakiwa. Uko huru kuchagua kushiriki au sio katika somo. Asante.

Je! Uko tayari kushiriki katika utafiti huu?

Ndio ()

Hapana ()

Ikiwa ndio, saini ……. Tarehe…….

Kiambatisho cha 2: Dodoso la Pamoja

Maagizo: Kwaheri jaza fomu ifuatayo kwa kuashiria ipasavyo.

Usiri: Majibu yaliyotolewa yatakuwa ya siri kabisa. Hakuna kumbukumbu yoyote itatolewa kwa mtu yeyote au shirika katika ripoti ya utafiti.

Sehemu ya A: Maswali yanayohusiana na Jamii ya kijamii, kitamaduni na kiuchumi

1. Una umri gani (miaka)> 19 () 20-29 () 30-39 () 40-49 ()

2. Ni nini hali yako ya ndoa sasa …….

Kutoolewa () Kuolewa () Kuolewa na Kutengwa () Kutengana ()

3. Je! Ni kiwango gani cha juu kabisa cha elimu ambacho umekamilisha? Shule ya msingi () Shule ya upili () Chuo () Chuo Kikuu ()

4. Je ! Ushirika wako wa kidini ni nini? Katoliki () Mprotestanti () Muislam () hakuna () wengine (Tafadhali taja) ……

5. Je! Unafanya nini ya kujikimu kimaisha ? Walioajiriwa () Wajiriwa () Kawaida () Wengine maalum ()

Sehemu ya B: Maswali yanayohusiana na ujuzi wa wateja juu ya umuhimu wa huduma za ANC

6. Ulikwenda kwa huduma za ANC wakati ulikua na mimba ya mwisho? Ndio ( ) la ( )

7. Ulikwenda wapi kwa huduma zako za ANC? Hospitali ya Umma ( ) Hospitali ya kibinafsi ( ) Kituo cha Afya () Zahanati () TBA () wengine bayana …….

8. Ulikuwa na ujauzito wa miezi ngapi ukipokea ANC ya kwanza? > 1 Mwezi ( ) Miezi 1-3 ( ) Miezi 6 ( ) Miezi 7-16 ( )

9. Ikiwa jibu la swali la 8, mahudhurio ya kwanza ya ANC kwa huduma ni miezi mitatu au zaidi wakati ni mjamzito, kwa nini umechagua kwenda wakati huu? Ukosefu wa pesa za usafirishaji () Ukosefu wa pesa kulipia huduma inayotolewa katika kituo hicho () Utamaduni hairuhusu udhihirisho wa mapema () Kituo cha afya kiko mbali sana () Ilipendelea TBA kuliko mfanyikazi wa afya ambaye ana tabia mbaya () Yangu ratiba

hainipi nafasi wakati wa wiki () Nilichagua kuhudhuria wakati huo () Sikujua kuwa ni muhimu kwenda mapema ()

10. Pamoja na ujauzito wa mtoto huyu, ulihudhuria kliniki ya ANC mara ngapi? 0 () 1-3 () 4 -6 () 7-9 ()

11. Ikiwa ulibakia nyumbani au kwa TBA, ni kwa nini? Ili kuepusha marudio kutoka kwa mfanyikazi wa afya kwa sababu sikuwa na kitabu cha ANC () alikuwa na maabara ya mapema () hakuwa na nauli ya kwenda hospitalini () umbali wa kituo cha afya ni mbali ()

12. Wakati wa matembezi ya ANC ulipata huduma gani? Vipimo vya HIV () Vipimo vya kikundi cha Damu () Vipimo vya mkojo () Vipimo vya STD () Zote () Hakuna ()

Sehemu ya C: Maswali yanayohusiana na maoni ya wateja juu ya kukamilisha ziara za ANC

13.Kwa maoni yako mwenyewe, huduma zilikuwa za lazima ...? Ndio () la ( )

14. Je! Unafikiria kunaweza kuwa na shida zisizotarajiwa zinazohusiana na ujauzito ambazo zinaweza kuhatarisha maisha ya mwanamke mjamzito ikiwa mama haendi kwenye ANC? Ndio () Hapana () Sijui ()

15. (Ikiwa jibu la 14 hapo juu ni Ndio…) ni ishara gani hatari ambazo zinaweza kutokea katika ujauzito ambazo zinaweza kuhatarisha maisha ya mwanamke mjamzito ikiwa utunzaji wa haraka wakati wa ziara ya ANC hautafutwa? (Chunguza na Jibu yote yanayotumika)

Kutokwa na damu sana. …….....a	Maumivu ya kichwa kali …….....b
Maono yasiyofaa …….....c	Convulsions …….....d.
Mikono na miguu iliyojaa.....e	Homa kali …….....f
Kupoteza fahamu …….....g	Ugumu wa kupumua …….....h

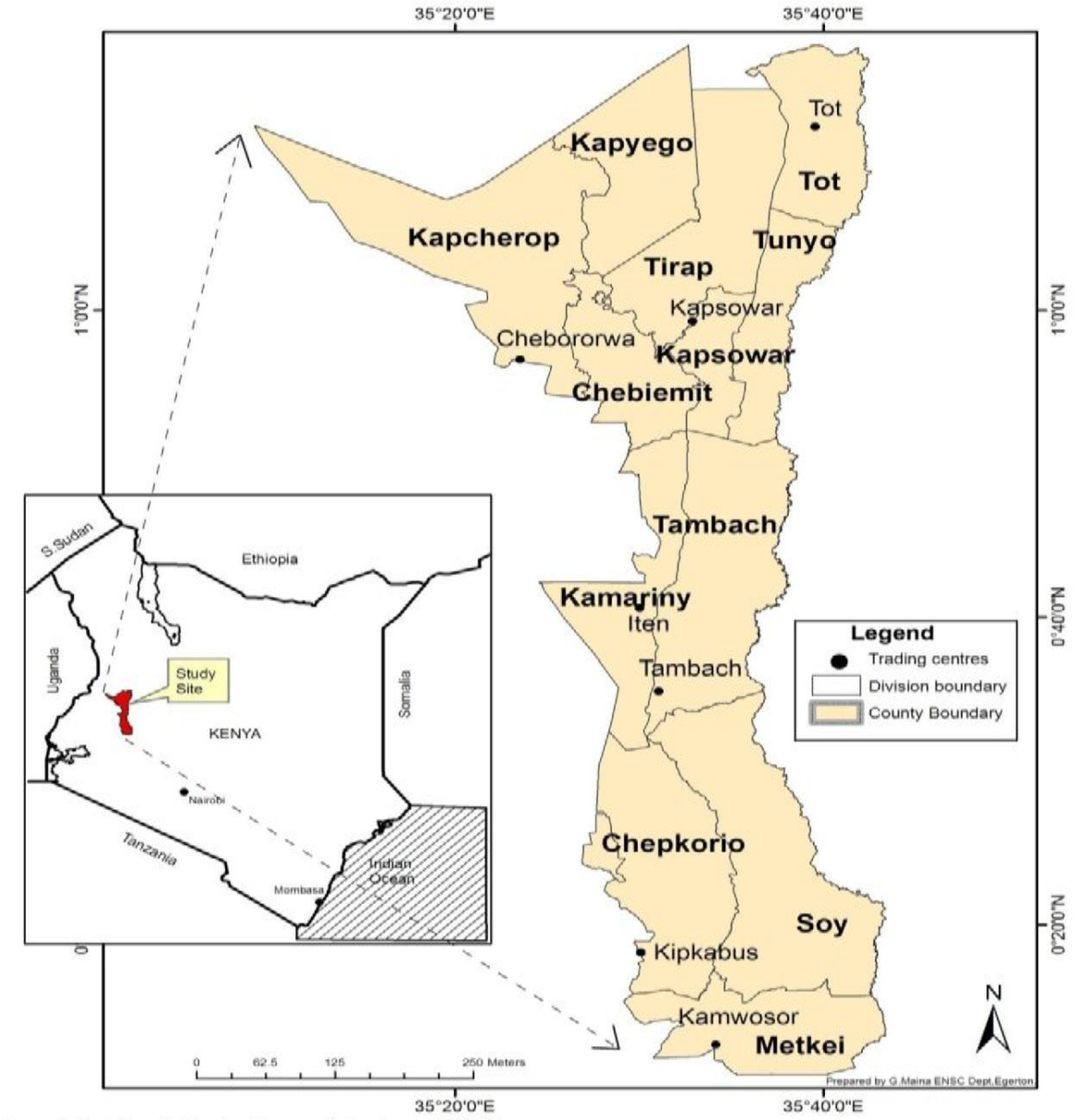
Udhaifu mkubwa …….....i	Ma maumivu makali ya tumbo ……...j
Kupungua / harakati za fetasi haraka.....k	Mapumziko ya maji bila kazi… l
Nyingine (taja) …….....m	Sijui ... …….....n
Hakuna …….....o	

16. Kwa maoni yako, mama mjamzito anapaswa kutembelea kliniki ya ANC kwa mara ya kwanza? Miezi 1-3 () Miezi 4-6 () Miezi 7-16 () Mapema iwezekanavyo ()

17. Kwa maoni yako, ni mara ngapi mwanamke mjamzito anapaswa kuhudhuria ANC katika kipindi chote cha ujauzito? Mara moja () Tatu au chini () Nne au zaidi () Kama nyingi iwezekanavyo () kama pendekezo la mtoaji huduma () wengine ……..…

18. Ulilipa huduma za ANC? Ndio () La ( )

APPENDIX 4: MAP OF ELGEYO MARAKWET COUNTY SHOWING THE STUDY SITES



Source: Regional Centre for Mapping of Resources for Development (RCMRD)

APPENDIX 5: REQUEST TO CARRY OUT RESEARCH IN THREE HEALTH FACILITIES IN ELGEYO MARAKWET

Angela Jepchirch Sawe
Moi University
School of Public Health
PO Box 4606-30100
Eldoret

16th June, 2020

The Chief Officer Health and Sanitation
Department of Health & Sanitation
PO Box 220-30700
ITEN

Dear Madam,

RE: REQUEST FOR PERMISSION TO CARRY OUT RESEARCH IN THREE HEALTH FACILITIES IN ELGEYO MARAKWET COUNTY

I am a student at Moi University Eldoret, School of Public Health studying a Masters Degree (MPH -Health Promotion). It is a requirement of the University that all students must carry out research projects as a partial fulfillment of the degree requirements. The investigation will be the "**Barriers to utilization of Antenatal Services among women attending Public Health Facilities in Elgeyo Marakwet County, Kenya**" Am doing my research particularly at Iten County Referral Hospital, Kamwosor Sub County Hospital and Chebiemit Sub County Hospital. The information gathered will be purely of academic purposes only.

Your assistance will be greatly appreciated.

Yours faithfully,

Angela Jepchichir Sawe

APPENDIX 6: IREC Approval

INSTITUTIONAL RESEARCH AND ETHICS COMMITTEE (IREC)

MOI TEACHING AND REFERRAL HOSPITAL
P.O. BOX 3
ELDORET
Tel: 33471//2/3

MOI UNIVERSITY
COLLEGE OF HEALTH SCIENCES
P.O. BOX 4606
ELDORET
Tel: 33471/2/3

Reference: IREC/2019/219
Approval Number: 0003608

5th June, 2020

INSTITUTIONAL RESEARCH & ETHICS COMMITTEE
05 JUN 2020
APPROVED
P. O. Box 4606 - 30100 ELDORET

Sawe Angela Jepchirchir,
Moi University,
School of Public Health,
P.O. Box 4606-30100,
ELDORET-KENYA.

Dear Ms. Sawe,

BARRIERS TO UTILIZATION OF ANTENATAL CARE SERVICES AMONG WOMEN ATTENDING PUBLIC HEALTH FACILITIES IN ELGEYO MARAKWET COUNTY, KENYA

This is to inform you that ***MU/MTRH-IREC*** has reviewed and approved your above research proposal. Your application approval number is ***FAN: 0003608.*** The approval period is **5th June, *2020 – 4th June, 2021.***

This approval is subject to compliance with the following requirements;

i. Only approved documents including (informed consents, study instruments, MTA) will be used.
ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by ***MU/MTRH-IREC***.
iii. Death and life threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to ***MU/MTRH-IREC*** within 72 hours of notification.
iv. Any changes, anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to ***MU/MTRH-IREC*** within 72 hours.
v. Clearance for export of biological specimens must be obtained from relevant institutions.
vi. 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.
vii. Submission of an executive summary report within 90 days upon completion of the study to ***MU/MTRH-IREC.***

Prior to commencing your study; you will be required to obtain a research license from the National Commission for Science, Technology and Innovation (NACOSTI) https://oris.nacosti.go.ke and other relevant clearances. Further, a written approval from the CEO-MTRH is mandatory for studies to be undertaken within the jurisdiction of Moi Teaching & Referral Hospital (MTRH), which includes 22 Counties in the Western half of Kenya.

Sincerely,

DR. S. NYABERA
DEPUTY-CHAIRMAN
INSTITUTIONAL RESEARCH AND ETHICS COMMITTEE

cc CEO - MTRH Dean - SOP Dean - SOM
Principal - CHS Dean - SON Dean - SOD

APPENDIX 7 : REQUEST TO CARY OUT A PILOT STUDY

REPUBLIC OF KENYA
COUNTY GOVERNMENT OF UASIN GISHU
DEPARTMENT OF HEALTH SERVICES

Email:info@uasingishu.go.ke
Website: www.uasingishu.go.ke

When Replying, Please Address to:
C.O Health Services
Uasin-Gishu County
P.O. Box 40 – 30100
ELDORET, KENYA.

Ref: **UGC/COH/RESEARCH./9/20 (4)** **Date:** 9th September. 2020

ANGELA JEPCHIRCHIR SAWE
MOI UNIVERSITY
SCHOOL OF PUBLIC HEALTH
P.O. BOX 4606-30100
ELDORET

Dear Angela,

RE: REQUEST FOR PERMISSION TO CARRY OUT A PILOT STUDY RESEARCH IN UASIN GISHU DISTRICT HOSPITAL

Your letter of 16th June 2020 on the above subject matter refers.

Request to carry out a pilot study research on **"Barriers to utilization of Antenatal Services among women attending Public Health Facilities in Elgeyo Marakwet County Kenya"**, is hereby approved.

After completion of the pilot study, you are required to share a copy of your report to the undersigned.

Thank you.

COUNTY GOVERNMENT OF UASIN GISHU
09 SEP 2020
OFFICE OF THE CHIEF OFFICER HEALTH SERVICES

KENNETH MBEKA,
Ag. CHIEF OFFICER, HEALTH SERVICES

Copies to:

CECM Health Services

Medical Superintendent, UGDH

APPENDIX 8: APPROVAL TO COLLECT DATA

ELGEYO MARAKWET COUNTY
DEPARTMENT OF HEALTH

MEDICAL SUPERINTENDENT,
ITEN COUNTY REFERRAL HOSPITAL,
P.O. BOX 332,
ITEN.

Email: itenhospital @yahoo.co.uk
Or itenhospital@gmail.com

REF: MEDSUPT/ICRH/EDUC/VOL1/111/56

Date: 6th July, 2020

MRS. ANGELA JEPCHIRCHIR SAWE

Dear Madam,

RE: APPROVAL TO COLLECT DATA

Following your application to carry out research project on **"Barriers to Utilization of Antenatal Services among women attending Public Health Facilities in Elgeyo Marakwet County"** I wish to inform you that your request has been approved for Three (3) months effective from the date of this letter.

You will be required to ensure that patient information is kept confidential to the extent permitted by Kenyan Law.

You are also required to submit a copy of your findings to this office once you are through with your research.

Sincerely,

P. K. Biwott
Health Administrative Officer
ITEN COUNTY REFERRAL HOSPITAL

HEALTH ADMINISTRATIVE OFFICER
ITEN COUNTY REFERRAL HOSPITAL
06 JUN 2020
P.O.Box 332-30700,
ITEN

ELGEYO MARAKWET COUNTY
DEPARTMENT OF HEALTH

Email: kamwosorhosp@yahoo.com

MEDICAL SUPERINTENDENT
KAMWOSOR SUB-COUNTY HOSPITAL
P.O. BOX 16,
CHEPKORIO.

DATE 20TH Aug 2020

TO: ANGELA JEPCHIRCHIR SAWE

Dear madam,

REF: PERMISSION GRANT TO COLLECT DATA

Following your request to conduct research project on Barriers to Utilization of Antenatal Services among women attending Public Health Facilities in Elgeyo Marakwet County.
I am pleased to inform you that your request has been approved for a period of 3 months from today henceforth.
Kindly observe ethical practices that guide research as you carry out your project.

Yours Truly,

Dr. June Chebichii
Medical superintendent
Kamwosor Sub County Hospital

KAMWOSOR SUB-COUNTY HOSPITAL
20 AUG 2020
P.O. Box 16-30129, CHEPKORIO

APPENDIX 9: REQUEST FOR PERMISSION TO CARRY OUT RESEARCH IN CHEBIMIT SUBCOUNTY HOSPITAL

Angela Jepchirchir Sawe
Moi University
School of Public Health
P.O Box 4606-30100,
Eldoret.

16th June, 2020.

The Medical Superintendent.
Chebiemit Sub County Hospital
P.O Box 3-30706
CHEBIEMIT.

Dear Sir,

RE: REQUEST FOR PERMISSION TO CARRY OUT RESEARCH IN CHEBIEMIT SUB COUNTY HOSPITAL.

I am a student at Moi University Eldoret, School of Public Health studying a Masters Degree (MPH – Health Policy and Management). It is a requirement of the University that all students must carry out research projects as a partial fulfillment of the degree requirements. The investigator will be the **"Barriers to utilization of Antenatal Services among women attending Public Health Facilities in Elgeyo Marakwet County, Kenya".** My research study will be done particularly at Iten County Referral Hospital, Kamwosor Sub County Hospital and Chebiemit Sub County Hospital.
The information gathered will be purely of academic purposes only.

Your assistance will be greatly appreciated.

Yours faithfully,

Angela Jepchirchir Sawe
Cellphone No: 0720294750