DETERMINANTS OF UTILIZATION OF ANTENATAL CARE SERVICES AMONG POST-NATAL WOMEN AT SAKU SUB COUNTY, MARSABIT COUNTY, KENYA

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Determinants of Utilization of Antenatal Care Services among Post-Natal Women at Saku Sub County, Marsabit County, Kenya

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DECLARATION

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

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David Murithi

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

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DEDICATION

I would like to dedicate this work to Caroline Murithi, my beloved wife, our son Vierra Mwenda, our daughter Tierra Karimi and my late mother Cecilia Kajuju for their continued moral, spiritual and material support.

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I would like to thank the God almighty for his grace and according me the strength to undertake this work.

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ABBREVIATIONS AND ACRONYMS

AFIDEP	African Institute for Development Policy
AIDS	Acquired Immunodeficiency Syndrome
ANC	Antenatal Care
ECA	Economic Commission for Africa
HIV	Economic Commission for Africa
MDGs	Millennium Development Goals
MMR	Maternal mortality rate
MOH	Medical Officer if Health
SDGs	Sustainable Development Goals
WRA	White Ribbon Alliance
SAP	Structural Adjustment Programme

OPERATIONAL DEFINITION

Antenatal Care (ANC):	Is the type of care that is accorded to Postnatal mothers through their pregnancy period to ensure both the mother and baby are healthy.
Facility related factors	These are aspects that obstruct the process or action of looking for health care services.
Maternal mortality ratio	The number of deaths experienced in the course of pregnancy, birth or in a 42 day period during which termination of pregnancy took place either due to pregnancy or management concerns per every 100,000 live births yearly or in a particular duration of time.
Social-cultural	The attributes of people in a particular geographical area.
Utilization	On utilization 1 to 2 visits was low level of ANC utilization while more than 3 visits was high level of ANC utilization.

ABSTRACT

Antenatal care (ANC) is a type of care accorded to pregnant mothers by health care professionals on a regular basis to ensure prevention of health problems during pregnancy. This study sought to assess determinants of utilization of ANC services among postnatal mothers at Saku Sub County. Specific objectives are; to determine the level of utilization of ANC services among postnatal mothers at Saku Sub County, to assess the socio-cultural factors that influence utilization of ANC services among postnatal mothers at Saku Sub-county and to determine the facility related factors that influence the utilization of ANC services among postnatal mothers at Saku Sub-county.The study used descriptive study design. The study population was post-natal mothers aged 15–49 years attending MCH services in selected health centers at Saku Sub-County. The sample size was 154. Simple random sampling was used to select post natal mothers. Pre-testing was done in Laisamis Sub County Dispensary. Research administered questionnaire and Focus Group Discussion (FGD) consisting of 8 participants was used to collect quantitative and qualitative data. Statistical package of social science (SPSS) version 26 was used to analyze quantitative data. Both descriptive and analytical analysis was done. Analytical analysis was done using chi-square and logistic regression. The level of significance used in the analysis was p=0.005. Qualitative data was analyzed thematically manually. Data was presented using tables and charts. Fifty four point six percent and 54.4 % of participants had high and low level of ANC utilization respectively. Majority (86.5%) received support from family members on utilization of antenatal care services a, Although More than (80.9%) of the respondents were not accompanied by their husband during ANC Visit. Most (89.5%) stated that the health-care facilities were fairly neat and personnel attitude was good. In conclusion, among social-cultural factors family support and family member who gave support were statistically significantly associated with utilization of ANC Services at P-value=0.035 and 0.036 respectively. Among facility related factors, none was statistically significantly associated with utilization of ANC Services. The researcher recommends family support to be enhanced through health education during ANC visits.

CHAPTER ONE

INTRODUCTION

1.1. Background of the Study

Antenatal care (ANC) is the continuous care that is accorded to women in the course of pregnancy (Catling *et al.,* 2015). Antenatal care is an efficient health intervention aimed at inhibiting maternal morbidity and mortality. Obstetricians and midwives offer postnatal mothers with guidance on proper nutrition, positive approach to birth and family planning during ANC. The care conferred to the postnatal mothers during ANC is crucial for survival and overall health of both the pregnant mother and unborn child (WHO, 2014).

Antenatal care should begin at early stages of pregnancy. The WHO (2014) proposed that women with normal pregnancy should visit a health care facility for antenatal services not less than four times. The first, second, third and fourth visits should be scheduled at 0 to16, 16 to 28, 28 to 36 and after 36 gestational weeks respectively (WHO, 2016).

Currently, 2016 WHO ANC Model recommends that postnatal mothers should have eight ANC contacts with the health system during each pregnancy (WHO, 2014). The first ANC contact should take place in the first trimester (up to 12 weeks of gestation), two contacts in the second trimester (at 20 and 26 weeks of gestation) and five contacts in the third trimester (at 30, 34, 36, 38 and 40 weeks) (WHO, 2016).

Globally, nearly 600,000 women die from difficulties attributed to pregnancy annually. Over 90% of those deaths are experienced in Asia and Sub-Saharan Africa regions (Over Bosch, *et al*., 2015). In the whole world maternal mortality rate fell by nearly 44% over the past twenty-five years, from approximately 532,000 in 1990 to an estimated 303,000 in 2015

Majority (99 %) of the global maternal deaths happen in economically growing countries. The major cause of this high Maternal Mortality Rate (MMR) in Africa is due to insufficient use of antenatal services (Economic Commission for Africa, 2018). The Sustainable development goal no 3(SDG3) aims to promote good health and wellbeing in order to reduce maternal and neonatal morbidity and mortality (Lindsay *et al,* .2012). The main direct causes of maternal deaths in Africa are: postpartum hemorrhage (27.1%), hypertensive disorders of pregnancy (14.1%), complications of unsafe abortion (7.9%), obstructed labor (9.6%), and sepsis ((Lindsay et al, .2012).

In Kenya an estimated 414 women per 100,000 live births die as a result of pregnancy related complications, childbirth and sequelae in the postnatal period, making maternal death the leading (27 percent) cause of death among women of the reproductive age (KDHS, 2016). Problems of malaria, anaemia, and STD/HIV/AIDS and TB have contributed to the high maternal mortality ratio in Kenya (KDHS, 2016).

Kenya adapted the WHO focused ANC package that promotes interventions that address the most prevalent health issues that affect mothers and newborns (Dunbar T, (2011). The major goal of focused ANC is to help women maintain normal pregnancies. Marsabit County, Antenatal care coverage is only 43% against National coverage 58% (Marsabit County MOH, 2016)

Mostly, the problem of insufficient utilization of ANC services arises since postnatal mothers travel long distance to access the services and also there is presence of bad terrains. In addition, others are faced with poor health management system where access to ANC is affected by health care provider's continued industrial strikes (WHO, 2017). Thus, the responsiveness about antenatal care can significantly impact on the survival and general health of the mother and un-born child.

Many studies revealed that the women who attended antenatal care had more than seven -times increased chances of delivering in a health facility. Many women in Africa

underutilize focused antenatal care. Usually they come late for the ANC service and make fewer than recommended antenatal care visit (Stewart D.E, 2012).

1.2 Statement of problem

According to WHO estimations, every minute of every day, Globally,and commonly in developing countries, a woman of reproductive age dies from health complications related to pregnancy (WHO, 2014). This information is supported by the fact that ANC coverage in the world, industrialized and developing countries is 72%, 98% and 28% respectively (WHO, 2015).

An estimated 414 women per 100,000 live births die as a result of pregnancy related complications, childbirth and sequelae in the postnatal period, making maternal death the leading (27 percent) cause of death among women of the reproductive age (Nketiah-Amponsah,2013). Obstetric hemorrhage, puerperal sepsis, pregnancy-induced hypertension obstructed labor and ruptured uterus, and complications of unsafe abortion are main cause of maternal death. Such complications can be prevented or treated before becoming life-threatening emergencies by appropriately trained health care providers in antenatal clinics (Nketiah-Amponsah, 2013).

In Kenya, six among ten pregnant mothers receive four or more ANC visits, but only 20% had first ANC visit in the first trimester (KDHS, 2016). Despite the concerted efforts by the Ministry of Health, the goal of attaining four ANC visits has continued to lag behind because of cultural and religious beliefs associated with pregnancy. (KDHS, 2016). Stigma, beliefs about social rejection, Lack of confidentiality, Cultural beliefs, perceptions about ANC, expensive health care services and previous health care experiences have hindered ANC utilizations

Marsabit County is one of the poorly performing counties in the country on maternal, newborn and child health indicators. Antenatal care coverage is only 43% against National coverage 58% (Marsabit County MOH, 2016). It is the fourth worst County in

maternal deaths after Mandera, Turkana and Wajir (KDHS, 2016). According to MOH, (2017), Marsabit County Referral Hospital reported that, only 44% (n= 454/1024) of Postnatal mothershad completed four ANC visits. The above statistics indicated low utilization of ANC in Saku Sub County. Consequently the researcher seeks to establish the determinants of ANC utilization in Saku Sub County

1.3 Significance of the study

The information obtained from this study was added to the existing body of knowledge in the area of maternal and child health. The results of this were used by health policy makers and other stakeholders for developing healthy public policies in Marsabit County. Consequently, the findings enhanced family and social support system for pregnant women in the hospital

1.4 Study Justification

Maternal mortality occurs majorly in developing countries such as Kenya, where there is low antenatal care (WHO, 2016). The WHO proposes ANC as one of essential measures to lessen maternal and newborn morbidity and mortality. While antenatal care can be an important tool in diagnosing and preventing risks during Pregnancy, many women in developing countries do not utilize this service. (Nketiah-Amponsah, 2013). Thus, information about utilization of antenatal care services was vital in enhancing ANC utilization.

This study was directed toward the accomplishment of Sustainable Development Goals (SDGs) number three which is to promote healthy living and uphold the well-being of all people at all ages. Kenya recognizes the critical role research contribute in attainments of sustainable developmental goals (Kenya Health Policy, 2015). Thus, increased utilization of ANC services reduced maternal morbidity enhance enhancing the attainment of SDGs.

This study had significant contribution to the Kenya Vision 2030 blueprint and Kenya big four agenda because obstetric complications causes economic, social and psychological effects to individual, family, community, which impedes Kenya economic growth (Economic Commission for Africa, 2018). Therefore, the findings and recommendations from this study helped enhance ANC access for pregnant mothers who were cornerstone of African economic development to lessen the problems of stillbirths and difficulties during pregnancy. Improvement in the quality of ANC accorded women an opportunity to enjoy a positive pregnancy and delivery period.

1.5 Research Questions

1. What is the level of utilization of ANC services among postnatal mothers at Saku Sub County?
2. What are the socio-cultural factors that influence utilization of ANC services among postnatal mothers at Saku Sub-County?
3. What are the facility related factors that influence utilization of ANC services among postnatal mothers at Saku Sub-County?

1.6 Broad objective

To establish determinants of utilization of antenatal care services among Postnatal mothers at Saku Sub County, Marsabit County

1.6.1 Specific Objectives

1. To determine the level of utilization of ANC services among postnatal mothers at Saku sub county.
2. To assess the socio-cultural factors that influence utilization of ANC services among postnatal mothers at Saku Sub-county.

3. To determine the facility related factors that influence the utilization of ANC services among postnatal mothers at Saku Sub-county.

1.7 Hypothesis

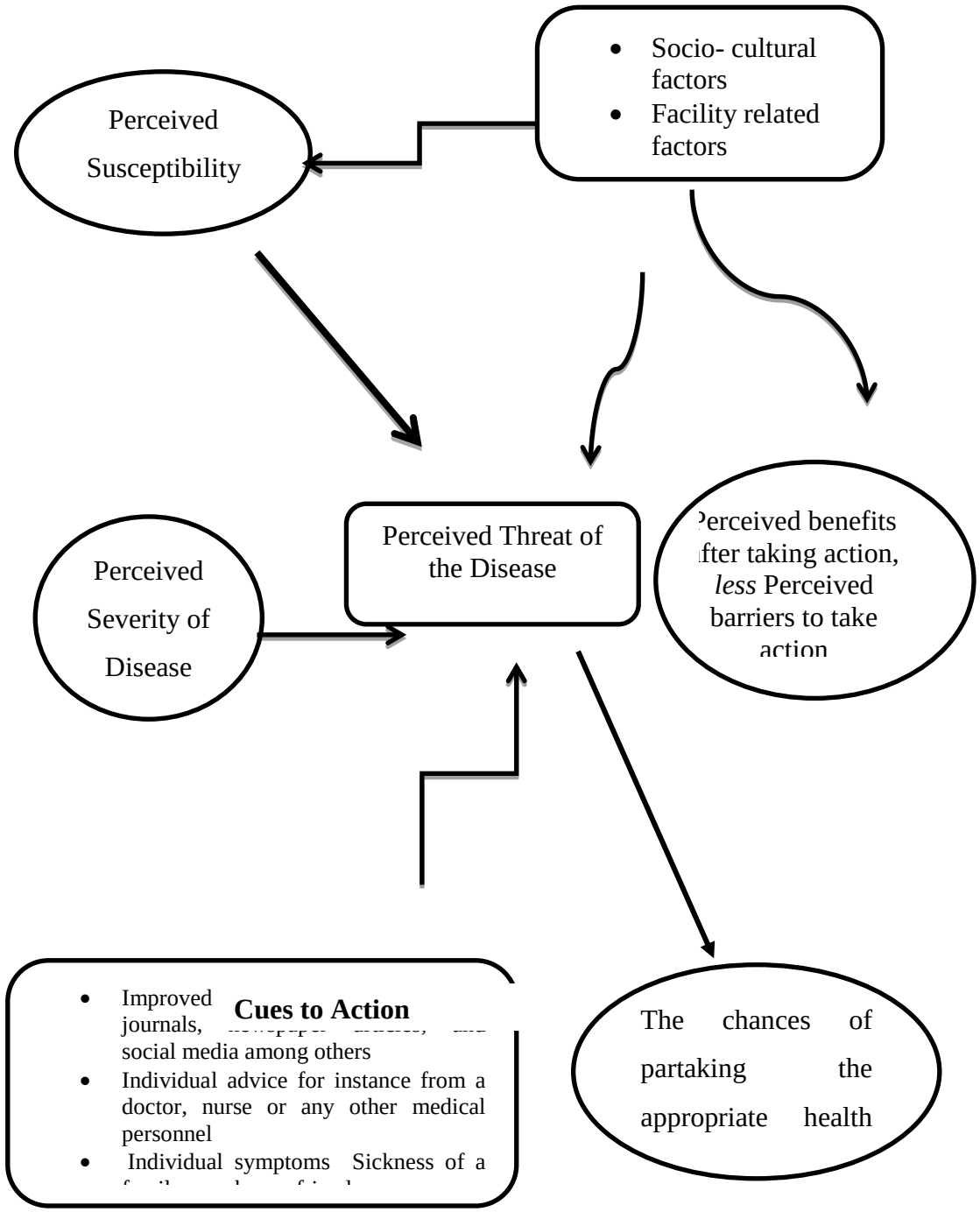
1. H_1: There is no statistical significant association between socio-cultural factors and utilization of ANC among postnatal mothers at Saku Sub-county.
2. H_2: There is no statistical significant association between facility related factors and utilization of ANC among postnatal mothers at Saku Sub-county.

1.8 Health belief model

Health Belief Model (HBM) was adopted in this study. According to Anderson (1995), HBM was a psychological health behavior modification model established to describe and foresee health-related behaviors. It proposed that people's beliefs about health problems, that was, perceived severity, benefits and barriers and self-efficacy explained their engagement (or lack of engagement) in health-promoting behaviors. A stimulus or cue to action must be present in order to trigger the health-promoting behavior.

The postulates of HBM were susceptibility to illness; perceived severity, benefits and barriers. Susceptibility to illness was a belief of an individual likelihood of contracting a disease due to lack of a specific behavior. For example, a pregnant woman believed that there was a high probability of her getting complications if she doesn't attend ANC (Polit, 2003). Perceived severity of an illness happened when an individual believed that an illness was life threatening, thus performed specific behavior. For example, a pregnant woman who believed that she might get severe pregnancy-related complications like pre-eclampsia would attend ANC. Perceived benefits happened when an individual believed that she might have advantages due to particular behavior. For example, a pregnant woman who believed that her un-born baby would be healthy when she attends ANC would visit the clinic regularly (Becker, 1978). Perceived barriers were

tangible and psychological costs that hindered a specific behavior. For example, a pregnant woman avoided attending ANC if it was costly (Butler, 1994).



Source Anderson, (1995)

Figure 1.1: Health belief model

1.7 Conceptual frame work

Independent variable

Dependent variable

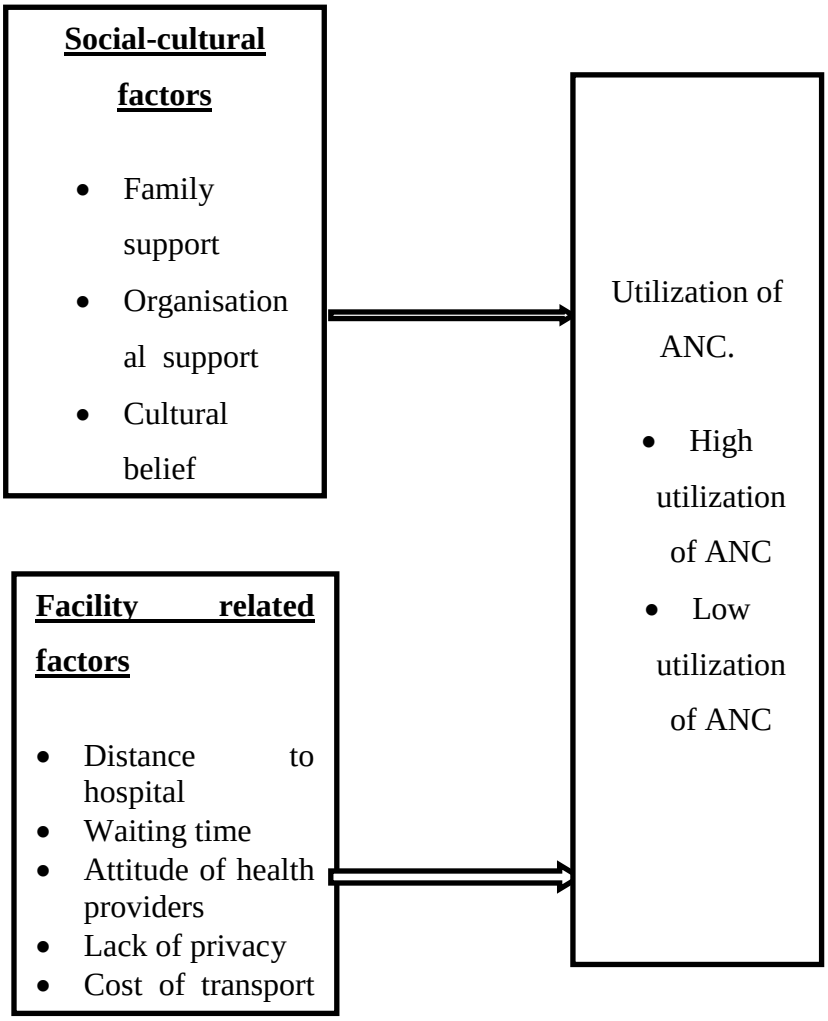


Figure 1.2: Conceptual frame work

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Antenatal care (ANC) is an important intervention that if properly utilized reduces maternal and perinatal mortality rates (Bilenko, 2011). Access to ANC provides medical care specialists with the chance to handle and prevent pregnancy and childbirth related complications. During the ANC visits, health care professionals provide pregnant mothers with a number of services such as tetanus vaccination and micronutrient supplementation. Also, they are informed on signs and symptoms of pregnancy-related complications and risks associated with labor and delivery. They are also provided with information concerning birth spacing, which is essential in enhancing infant survival.

When ANC is sought early enough, it offers postnatal mothers with benefits such as early uncovering of pregnancy-induced health complications. This has shown to improve pregnancy and neonatal outcomes (Carroli, 2009).According to Nielsen (2008) factors that impact on utilization of ANC among Postnatal mothers includes socio-demographics factors and facility-related factors. Similarly, according to Chakrabarti (2010) individual and socio-cultural factors aspects were essential in predicting utilization of ANC.

Across the Eastern Europe and Central Asia region, the degree of maternal health varies greatly, both between and within countries. Maternal education, socioeconomic status, healthcare access, family support, and previous pregnancy experience are recognized as major determinants of timely initiation of ANC. Less than three ANC visits was associated with increased risks of maternal death in Australia (Memon *et al.*,2015)

Georgia is an upper-middle income country with a population of 3.72 million. In 2018, the maternal death rate in Georgia was 11.7 per 1000 births which is one of the highest

among European countries. Additionally, a high proportion of women in Georgia attend at least four ANC visits during pregnancy (80.8%) (Rosalia *et al.,* 2011).

In the United States in, ANC utilization is among the most frequently used health care services in the United States, with more than 18 million prenatal visits occurring in the USA. More than three out of four women (77.1%) initiated ANC in the first trimester of pregnancy in 2016. Less than 5% of all women began ANC in the third trimester (late) (4.6%), and 1.6% of women received no PNC at all. Study from the USA showed that the risk of preterm birth, stillbirth, early and late neonatal mortality increased as the number of ANC visits decreased (Memon *et al.,* 2015)

2.2 Level of utilization of ANC

The WHO (2014) proposed that women with normal pregnancy should visit a health care facility for antenatal services not less than four times. The first, second, third and fourth ANC visits should be scheduled at 0 to16, 16 to 28, 28 to 36 and after 36 gestational weeks respectively (WHO, 2012). Currently, 2016 WHO ANC Model recommends that postnatal mothers should have eight ANC contacts with the health system during each pregnancy (WHO, 2014). The first ANC contact should take place in the first trimester (up to 12 weeks), two contacts in the second trimester (20 and 26 weeks) and five contacts in the third trimester (30, 34, 36, 38 and 40 weeks) (WHO, 2014).

According to the WHO (2014), appropriate access to ANC should comprise of a minimum of four visits whereby the first ANC visit should be in the first trimester. Current evidence from global data indicated rise in the population of women seeking ANC at least once in the first three months. Globally, the proportion of Postnatal mothers attending ANC once had increased to 83% from 2014–2018. Only 64% of postnatal mothers received the recommended four minimum ANC visits worldwide (WHO, 2018). In addition, the number of women seeking ANC four or more times went high from 35 t to 51% (WHO 2014). In Africa, over two-third of women (69%) have at

least one antenatal visits during pregnancy but majority do not attend the required minimum number of four visits (WHO, 2015). However, in Sub-Saharan Africa, the population of women seeking antenatal care four or more times still remains at 44 percent which does not match the target of Millennium Development Goals (MDG).

Majority of postnatal mothers who attend ANC do not attain the required number of visits recommended by the WHO (WHO, 2014). According to studies done in Ghana, Kenya and South Africa, four ANC visits was acceptable to clients and health care workers (Nyarko *et al.,* 2011; Birungi & Onyango-Ouma, 2009 and Chege *et al*., 2010). In Malawi, the overall implementation of four ANC visits was above WHO standards (Lungu *et al.* 2011**).** In Kenya, six among ten postnatal mothers received four or more ANC visits, but only 20% had first ANC visit the first trimester (KDHS, 2016).

Although urban population was six times populated than the rural, only 50% of postnatal mothers in those areas attended ANC in the developing countries (Wildman, 2009). A study done by Navaneetham & Dharmalingam (2009) in India, found that postnatal mothers in urban areas of Karnataka were less likely to attend four ANC visit than those living in rural areas. In Uganda, only six out of every ten (60%) postnatal mothers in urban areas attended four or more ANC visits (Turysima, 2014).

Addai (2010) argued that access to ANC was high in high-income countries. Conversely, Wildman *et al.,* (2009) argued that countries in the Sub-Saharan Africa record low ANC coverage. According to Delva (2010), a study done in Kenya, showed that 52% of women (in rural areas) and 49.2% (in urban areas) sought ANC once before delivery. Their first ANC visit was after 28 weeks of gestation (Delva, 2010). Overbosch (2005) indicated that in Ghana, 85% of the postnatal mothers sought ANC services with skilled medical personnels prior to delivery. Moreover, the likelihood of postnatal mothers seeking ANC services four or more times stood at 55% and 73% for postnatal mothers in rural and urban areas respectively.

2.3 Socio-cultural factors influencing utilization of ANC

Traditional practices in pregnancy had been deeply rooted in the lives of the people that it conflicts with the acceptance of modern ANC (Lubbock, 2011). In a study conducted in India by Pallikadavath *et al., (*2008), religion and cultural factors had been shown to influence utilization of ANC. In contrary, a study conducted in Bangladesh to examine factors affecting the utilization of ANC among married women, religion was not found to be a significant factor (Haque, 2009).

The importance of social support was emphasized strongly by Warren (2015) when studying the relationship between social supports for first-time mothers. Husbands/partners and maternal mothers were identified most frequently as having given social support, while the health professionals and public health nurses were reported by most respondents to have given informational support. Similar findings were reported by Harper *et al.,* (2005) in San Francisco whereby support from mothers and male partners was found to increase visits to the ANC clinic. According to Nketiah-Amponsah *et al.* (2013), postnatal mothers with husbands' financial support had better access to ANC. Contrary, postnatal mothers who lived away from their spouses without their support did not attend ANC clinic adequately (Diego, 2009). Similarly, according to Simkhada *et al.,*(2011) it was found that negative influence of a husband or other family member influenced ANC utilization.

Having a spouse or partner who was not supportive was reported to be associated with initiating ANC late for both adolescents and adult women (Gross, 2012). Women who had no support from their spouses or partners utilized ANC services almost three weeks later than those who were given support (Gross, 2012). Utilization of ANC was almost nine times more likely for women who reported that their husbands approved ANC than women whose husbands did not approve (OR=8.99) (Rosliza & Muhamad, 2011).

Family size was also found to be a strong social factor to utilization of ANC. Postnatal mothers who lived in a household with less than three children were eight times more

likely to utilize ANC than those living in a household size with more than five children (Abosse *et al.,* 2010). Women from minority family/ethnic groups and teenagers were least likely to visit ANC clinics (Simkhada *et al.,* 2011). This was because inferiority complex.

Poverty influenced ANC utilization (Simkhada *et al.,* 2011). Poverty was a major issue in developing countries, where individual resources were exceedingly limited. For postnatal mothers who survived on less than two dollars a day, the cost of going to ANC clinics was excessively high (Griffiths & Stephenson, 2009). Low economic status of community members coupled with the lack of social security, welfare and health insurance systems had deteriorating effects and further widen the social gradient on the choice of ANC services. When studying the experience of Ghanaian postnatal mothers on utilization of ANC, Matsuoka (2010) realized that their over-reliance on their spouses for money to cater for their needs was as a major impediment in their quest for ANC services.

Cultural beliefs impeded access to ANC services. A study conducted in Mozambique, found out that poor attendance to ANC clinics was largely due to women's desire to hide their pregnancies from the community, for fear of being subjected to curse (Chapman, 2010). Also according to Mekonnen *et al*. (2012) it was noted that postnatal mothers who believed on traditional healers as opposed to medical care personnel did not seek ANC.

In many parts of Africa, pregnant women's decision making power was extremely limited particularly in matters of reproduction health. Decision making with regard to ANC care was often made by husband or other family members (WHO, 2009). Similar finding was reported by Afsana and Rashid (2017), who reported that traditional beliefs that husbands were the sole decision makers influenced utilization of ANC. As postnatal mothers had to wait for them to give authorization before they visit ANC clinics (Afsana & Rashid, 2017). Similarly, a study conducted in Nigeria, revealed that most postnatal mothers required their husbands' permission to seek health care, including emergency

obstetrics care. Men played a determining role in decision over when to seek treatment, be it traditional or orthodox in many cultural contexts (Blondel**,** 2012).

2.4 Facility-related factors influencing utilization of ANC

When postnatal mothers decide to visit MCH clinic for ANC, they still faced a number of health facility related challenges. Findings from Ethiopian DHS (2005) indicated that the most significant explanation for not seeking ANC was concern about unavailability of health care providers. According to Chi, *et al.,* (2015) misconduct by medical personnels and health facility related expenses influence ANC utilization. A recent report by White Ribbon Alliance (WRA) highlighted numerous cases of rudeness, discrimination and verbal/physical abuse by healthcare staffs in developing countries (WRA, 2011). Judgmental attitude of clinicians towards pregnant adolescents negatively influence their efforts to attend ANC (Nichols, 2017). Inflexible booking arrangements and lack of resources at healthcare facilities discouraged ANC visits (Rosalia *et al.,* 2011).

Memon *et al.,* (2015) argued that postnatal mothers who needed ANC were not contented with the services issued at public health facilities forcing them to opt for private facilities. Also, according to Dennis *et al.* (2015) long waiting hours, inconvenient service hours, service provider's negative attitude affected ANC utilization.

Inadequate access to ANC, medical and transport expenses influenced utilization of ANC. A study conducted by Magadi *et al.,* (2011) in Kenya, demonstrated that an increase in distance to the nearest healthcare facilities was associated with fewer antenatal visits. World Health Organization (WHO) reports indicated that high expenses for travel and long waiting time reduced ANC visits (WHO, 2009). According to Fausdar and Abhishek (2012), areas accessible had substantial positive utilization of ANC. Similarly, a study undertaken in Haiti showed that transport constraints such as high cost and time spent were the greatest obstacles to utilization of ANC (Alexandre *et*

al., 2009). Also, according to Yang *et al.* (2010), availability of transportation services to the health facility influenced utilization of ANC service. Postnatal mothers who had access to transportation services were 4.5 times more likely to attend ANC compared to their counterparts.

A key economic ingredient influencing ANC utilization was health insurance, which was least exploited in developing countries. Health insurance had potential to increase access to health care utilization (WHO, 2016), especially to vulnerable groups for example the pregnant women. According to Buor (2009), in developing countries where health insurance existed, access to ANC was higher than their counterparts. In a study conducted by Lim, *et al* (2010), it was revealed that in Nepal in 2005, free ANC and delivery services were given to pregnant women. This strategy aided in lessening the mortality rate in Nepal, which were 343 in 2000 to 240 in 2008.

2.5 Summary of Literature review

The body of evidence on ANC utilization in Africa has shown persistent low ANC utilization in developing countries. The problem of increased low ANC utilization is largely compounded by social-cultural and facility-related factors. The socio-cultural determinants associated with low utilization of ANC from literature reviews included: family support, organizational support, cultural and religious beliefs. The facility related factors were distance to the health facility, cost of ANC services, staff attitude, timeliness of services being offered and privacy.

2.6 Gap in Literature review

The literature review looked at determinants that influence utilization of ANC services among postnatal mothers in both developed and developing countries, but did not specifically focus in Saku Sub County, Marsabit County, Kenya. In this region, mortality rate was higher and therefore, there is need to conduct a study to determine the level of ANC utilization plus determinants influencing its utilization.

CHAPTER THREE

MATERIALS AND METHODS

3.1 Introduction

This chapter explores the methodology utilized to achieve the objectives of this study. It discusses research methodology under the following headings; study design, study Site, study population, sampling method, sampling procedure, pretesting of data collection tools, data collection tools, data collection methods and data management and analysis.

3.2 Study Site

The study was carried out in Saku Sub County in the following randomly selected health facilities: Marsabit County Referral Hospital, Dakabaricha Dispensary and Jirime Dispensary. Marsarbit County Referral Hospital has a total population of 16, 947 patients. The hospital has 1 Consultant (obs/gyn), 4 Medical Officer, 3 Pharmacists, 2 Health Administrative Offices, 15 Clinical Officers, 61 Nurses, 1Accountants, 3 Health Records and Information Officers, 12 Laboratory Officers, 4 pharmaceutical Technologist, 2 Radiographers, 9 Nutrition Officers, 2 Occupational Therapist, 2 PhysioTherapist,4 Medical engineers,2 Oralhealth,1 Dental technologist,2 Clerical officers,1 Orthopaedics,1 Caterers, 8 Chews, 3 Storekeepers, 1 Telephoneoperators,5 Drivers,6Supportive Staffs .

Dakabaricha Dispensary is located approximately 4Km North East of Marsabit Town. It has 3nurses, 2Nutritionists and 4 Community health Assistants .Jirime on the other hand is located 2km from Marsabit Town .It has 2nurses, 2nutritionists and 3 Community health assistants.

Saku Sub County is one of four Sub County in Marsabit County in Northern Kenya. It borders North Horr Sub County to the North and Laisamis to the South. Marsabit town which is the county headquarters is in Saku Sub County.

3.3 Study Design

The study used the design of a descriptive cross-sectional study and was comprised of both quantitative and qualitative techniques of data collection**.** This kind of study design gave the researcher ability to gain information pertaining to the situation in hand at one particular time and indicates the current situation of the condition being studied in a specific population. Post-natal mother reported their experiences during ANC utilization According to Orodho (2003) descriptive designs are used when collecting information about peoples' attitudes, opinions, habits, education or social issues.

3.4 Study Population

The study population comprised of post-natal mothers aged between 15-49 years who visited maternal and child health clinic (MCH) in Marsabit County Referral Hospital, Dakabaricha Dispensary and Jirime Dispensary in Saku Sub County. The population size of post-natal mothers who visited the facility for two month was 260.

3.5 Inclusion and exclusion criteria

3.5.1 Inclusion Criteria

1. Post-natal mothers who attended MCH services at Marsabit County Referral Hospital, Dakabaricha Dispensary and Jirime Dispensary in Saku Sub County.

3.5.2 Exclusion Criteria

1. Post-natal mothers who were very sick or mentally incapable.

3.6 Sampling method

3.6.1 Sample Size Determination

Cochran's sample size Formula was utilized to determine the sample size (Cochran, W. G. (1977)).

$$n_0 = \frac{Z^2 pq}{e^2}$$

e -is the desired level of precision which will be $(1.96)^2$

p -is the (estimated) amount of population that contains the attribute in question which was (43%) (MOH, 2016).

q- Is 1 – p. Which will be (1-43%) =0.57

$$\frac{(1.96)2(0.43)(0.57)}{(0.05)2} = 376$$

Since the population was less than 10,000, the researcher modified the sample size calculated in the above formula by using the following equation:

$$n = \frac{n_0}{1 + \frac{(n_0 - 1)}{N}}$$

N -is the population size which was 260 mothers for 2 month.

n_0 -is the new, adjusted sample size

$$n = \frac{376}{1 + (376 - 1)/260} = 154$$

3.6.2 Sampling procedure.

Simple random method was used to select Marsabit County Referral Hospital, Dakabaricha Dispensary and Jirime Dispensary. A list of hospitals in Saku Sub County was derived to obtain sampling frame, Then three hospitals where randomly selected from sampling frame. Number of post-natal mothers sampled in these health facilities was determined using probability proportional to size (Table 3.1).

Table 3.1: Number of participants to be sampled from each health facility

Health facility	**Total number of post-natal mothers visiting the health facility for two month**	**Number of post-natal mothers to be sampled from each health facility**
Marsabit County Referral Hospital	215	127
Dakabaricha Dispensary	25	15
Jirime Dispensary	20	12
Total	**260**	**154**

Post-natal mothers from each health facility were eventually selected using simple random sampling.

3.7 Pretesting of Data Collection Tools

Pre-test was done in Laisamis Sub County Dispensaries to assess whether data collection tools were appropriate using 10% of sample size. The respondents were encouraged to share feedback regarding clarity and relevance of content, ease of filling the questionnaire. Amendment was done on data collection tools prior to the actual data collection.

3.8 Recruitment and Training of Research Assistants

Three research assistants who were nurses with a minimum qualification a diploma in nursing and were conversant with the culture of the area were recruited and trained before actual data collection, in order to enable them to get acquitted with the study objectives and data collection tools.

3.9 Data collection Tools

3.9.1 Questionnaires

Semi structured questionnaire (Appendix 2) was used to collect quantitative data. It was divided into the following sub-sections; level of ANC utilization, socio-cultural and facility -related factors. The semi structured questionnaire had both open and closed ended questions.

3.9.2 Focus Group Discussions guide

Focus Group Discussions guide was used to collect qualitative data from 9 FGDs. Each focus group had 8 participants with homogeneous characteristics (The researcher selected post-natal mothers with almost similar age limit). Focus Group Discussions guide was used to seek and explore thoughts about determinants that influence ANC utilization at Saku Sub County, Kenya.

3.10 Data collection procedure

A researcher administered questionnaire was used to collect quantitative data. Trained research assistants to collected data in health facility for two month. Focus group discussions were used to collect qualitative data. The researcher was the facilitator of FGDs and was assisted by one research assistant who acted as an interpreter. Audio recording and note taking was done by a second research assistant. In each facility three

FGDs consisting of 8 participants were conducted. The total FGDs conducted were nine out of 12 because saturation was reached.

3.11 Data Analysis

Data was checked for completeness and edited in order to eliminate unusable data, inaccuracies, and errors. Data was coded, entered into computer and analysed using Statistical Package for Social Sciences (SPSS) version 26 to derive descriptive statistics. Chi-square test was used to test association between independent and dependent variable while logistic regression to identify significant predictors of ANC utilization.

Quantitative data was presented in form of pie-chart and frequency table. Qualitative data was transcribed and analyzed manually to generate themes. It was presented in form of verbatim.

3.12 Ethical considerations

This research proposal was submitted for ethical approval at Kenya Methodist University. Permission was sought from the County health management board in Marsabit County. Confidentiality of the respondents was maintained at all times. The identity of the participants was protected in that no names or any identifying information was solicited in the questionnaire.

Informed consent was obtained from all the respondents to ensure that they participate voluntarily. The participants were taken through the consent process by the researcher or the research assistants. This process involved explaining to the respondents what consent was, reasons for taking consent, and the purpose of the consent form. The respondents were also taken through all the components of the consent form to ensure that they understand the purpose of the study, the procedures, advantages and the voluntariness to participate in the study. If the respondent consents to participate in the study, they were required to sign the informed consent form.

3.13 Dissemination of findings

The researchers published the findings in the EAJ Journal of nursing and midwifery and International Journal of community Medicine and public health.

The researcher identified the hospitals stakeholders who were given final document with findings.

CHAPTER FOUR

RESULTS

4.1 Introduction

This chapter presented the results of the study as per specific objectives. Results of both quantitative and qualitative data were presented.

4.2 Response rate

The researcher conducted the study among post natal mothers attending MCH in Saku Sub County selected health facilities. The response rate was 100 %.(n=154) from the questionnaires.

4.2. Distribution of study participants per study location.

Participants came from thirteen locations and nearly two fifth of the respondents 36.2 % (n=55) were from Nagayo location while one tenth 10.5 % (n=16) came from Jirime location (Figure 4.1)

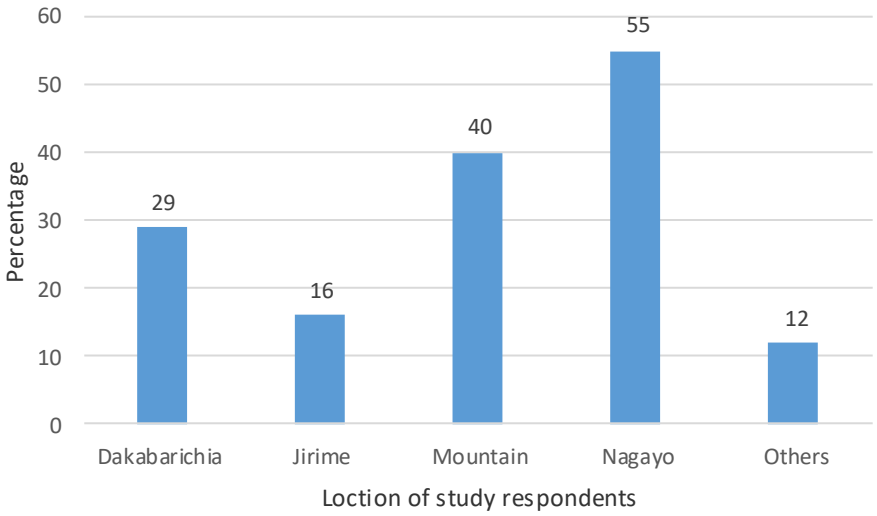


Figure 4.1: Distribution of study participants per location

4.3 Socio-demographic characteristics of the respondents

Most of the respondents 41.4 % (n =63) were between the age of 20- 24years while only one respondent (0.7%) was within the age of 40-44 years. Majority of the respondents 63.2 % (n=96) were Muslim while 36.2 % (n=56) were Christians. On marital status, 94.1 % (n=143) of the respondents were married while those who were divorced and separated were 1.3 % (n=2) each. About education, most 47.4% (n=72) of the respondents had primary education. However, 25% (n=38) of respondents' husband had post-secondary education with majority 39.5% (n=60) having secondary education. On occupation, majority 56.6% (n=86) of respondents were housewives, while minority 2 % (n=3) were peasant farmers. Most of participants husbands 34.2 %(n=52) were salaried workers (Table 4.1).

Table 4.1: Socio-demographic characteristics of the respondents

Variable	Frequency n =152	Percentage (%)
Age(in years)of the Respondents		
15-19	30	19.7
20-24	63	41.4
25-29	36	23.7
30-34	19	12.5
35-39	1	0.7
40-44	3	2
Religion		
Christians	56	36.8
Muslims	96	63.2
Marital Status		
Single	5	3.3
Married	143	94.1
Separated	2	1.3
Divorced	2	1.3
Level of Education of the study respondents		
Primary	72	47.4
Secondary	24	15.8
Post-Secondary	3	2
University	6	3.9
None	47	31
Level of education of the Study respondents Husbands		
Primary	31	20.4
Secondary	60	39.5
Post-Secondary	38	25
No formal education	23	15
Main occupation of the Respondents		
Main Occupation		
Peasant Farmers	3	2
Small business(Kioski,Kibanda)	29	19.1
Big business(shop, wholesaler)	7	4.6
Housewife	86	56.6
Casual laborer	13	8.6
Salaried workers e.g.(teachers, policemen)	14	9.2
Main occupation of the respondents Husband		
Peasant Farmers	2	1.3
Small business(Kioski,Kibanda)	37	24.3
Big business(shop, wholesaler)	8	5.3
Casual Laborer	43	28.3
Salaried workers e.g.(teachers, policemen)	52	34.2
Wood carving	2	1.3
others	2	1.3

4.4 Level of utilization of Antenatal services

Majority of the respondents 98.7 % (n=152) had utilized ANC services while 1.3% (n=2) did not (Figure 4.2).

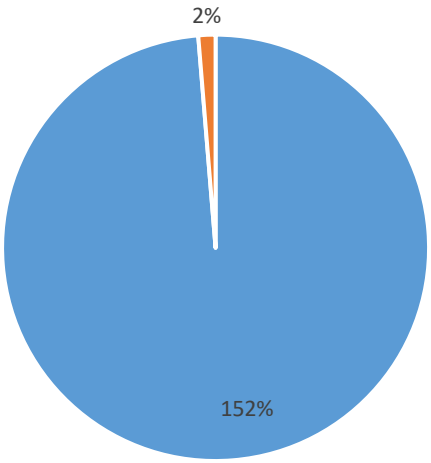


Figure 4.2: Respondents who had utilized ANC services

Among the respondents who accessed the health facilities during their period of pregnancy, almost half of the respondents 48.7% (n=74) attended ANC first during the fifth and sixth month of pregnancy while two percent 2% (n=3) during their first and second month. (Figure 4.3)

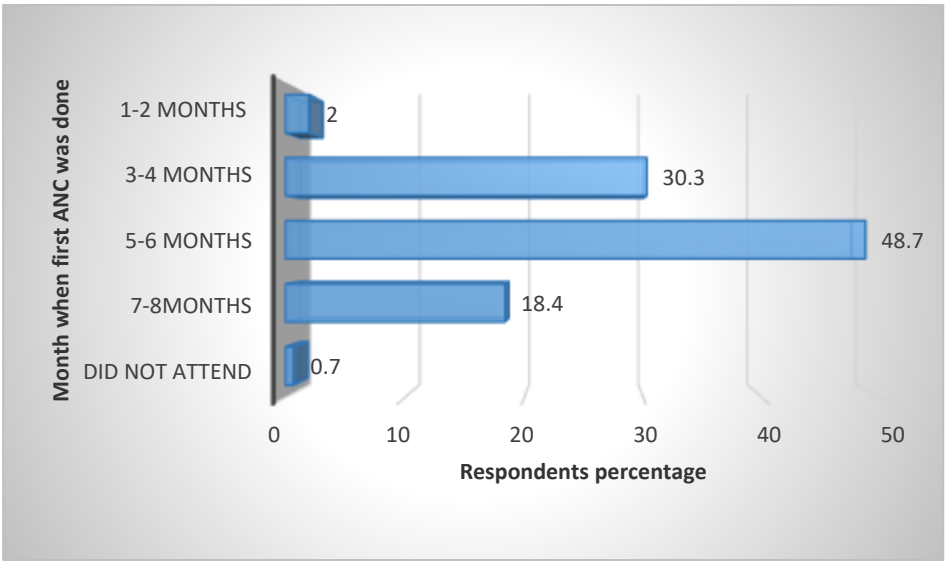


Figure 4.3: Respondents report on when the first ANC was attended

Majority of the respondents 96.8% (n=147) and 93.4% (=142) had their weight and blood pressure checked respectively. More than 82.9% (n=126) of respondents were given information on possible complications of pregnancy, while 86.6% (n=132) did not get ati-malarial treatment.

Table 4.2: Services given during Antenatal care visit

Service given	Yes (%)	No (%)	Total (100%)
Weight checked	147 (96.8)	5 (3.3)	152
Blood pressure	142 (93.4)	10 (6.6)	152
Tetanus vaccine	109(71.7)	43 (28.3)	152
Breastfeeding counseling	83 (54.6)	69 (45.4)	152
Newborn counseling	63(41.4)	89 (58.6)	152
Anti-malarial treatment	20(13.2)	132(86.8)	152
Information on pregnancy Complication	126 (82.9)	26 (11.1)	152
Head to toes examination	72 (47.4)	80 (52.6)	152
Vitamin supplements' given	145 (95.4)	7 (4.6)	152
Sugar level test	125(82.2)	27(17.8)	152
Hemoglobin test	145 (95.4)	7(4.6)	152

In term of utilization of ANC, 1 to 2 visits was low level of ANC utilization while 3 or more visits was high level of ANC utilization. In this study, more than half of the respondents 54.6 % (n=83) had a low level and 45.4% (n=69) a high level of ANC utilization (Figure 4.4).

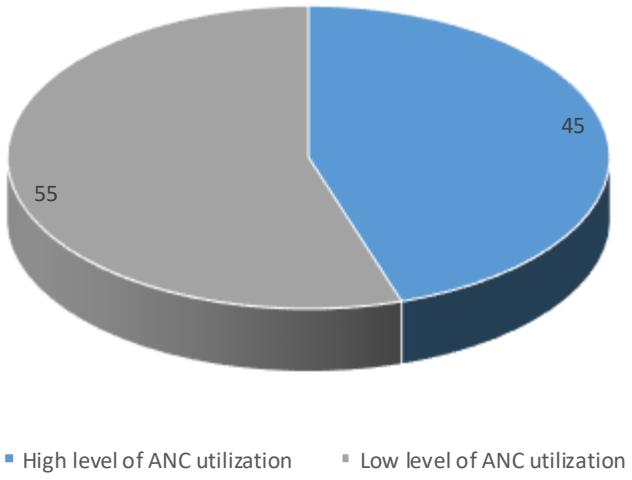


Figure 4.4: Level of utilization of Antenatal services

4.5 Socio-cultural characteristics that influence utilization of ANC services

4.5.1 Spiritual belief

Majority of the respondents 98.7% (n=150) felt that prayers only cannot help a postnatal mothers (Figure 4.5).

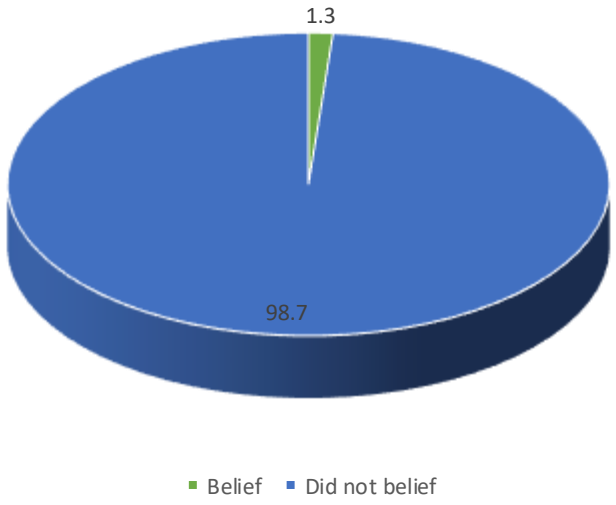


Figure 4.5: Respondents who belief that prayer help pregnancy women

4.5.2 Sub-theme 1: Cultural/spiritual beliefs

It came out clearly that cultural or spiritual beliefs influenced ANC utilization. Specifically one respondent noted that:

> *"We are discouraged by relatives not to mention our pregnancy early because it can bring bad luck. This makes us not to attend ANC early…" Respondent 3 of FGD 1*

The same sentiment was supported by other respondents in FGDs who argued that they visited traditional healers instead of health professionals during their pregnancy period rather than attending ANC. One respondent indicated that:

> "*Culture is severely rooted in us, and this limits utilization of ANC. I am general reluctant to mention my pregnancy to health care workers unless l suspect a problem with the pregnant" Respondent 4 of FGD 5.*

Majority of the respondents 66.4% (n=100) believed that mentioning the pregnancy early to others is not safe while 33.6% (n=52) believed it was safe (Figure.4.6).

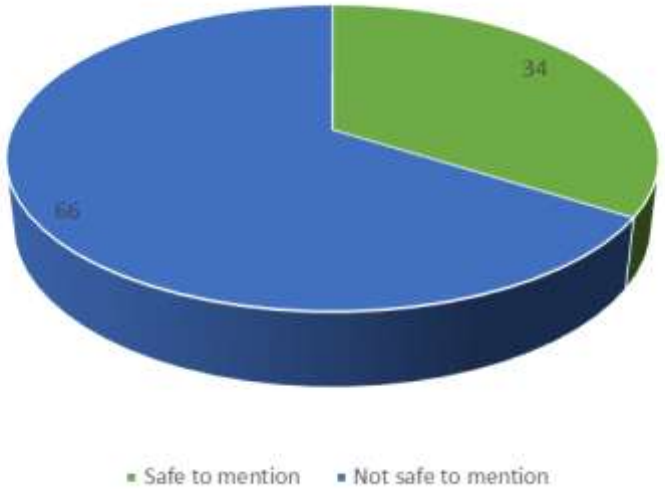


Figure 4.6: Respondents who belief that it's safe to mention their pregnancy early

4.5.3 Family support

Majority of the respondents 86.5% (n=132) received support from family members on utilization of antenatal care services. Majority of respondents 65.5% (n=10) received support from husbands while 7.1% (n=10) from mothers (Figure 4.7).

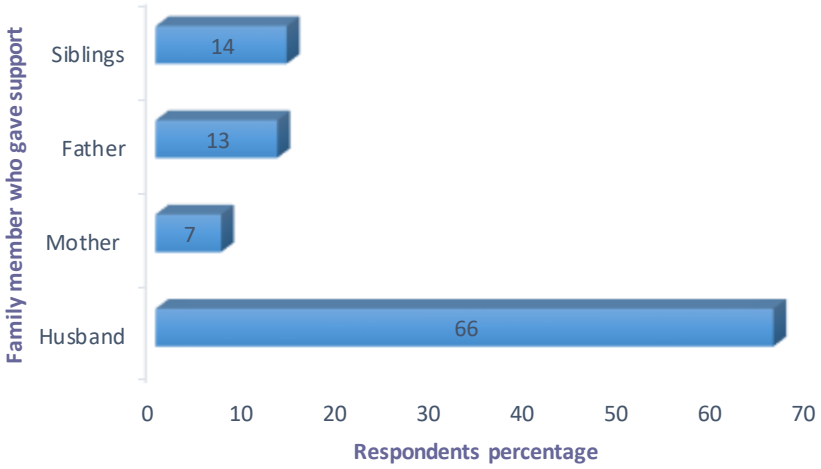


Figure 4.7: Respondents' family members who gave support for utilization of ANC service

4.5.4 Sub-theme 2: Family support

Family support was also agreed to influence utilization of ANC. One responded said that:

> *"My husband support me during ANC visits by encouragement and providing me with money for transport "Respondent 8 FGD 2*

Another respondent in the same FGD supported the sentiment by noting that:

> *"I feel calm when a family member accompanies me to ANC visits and other counseling sessions throughout the entire pregnancy. "Respondent 4 FGD 2*

More than 80.9% (n=123) of the respondents were not accompanied by their husband during ANC (Figure 4.8)

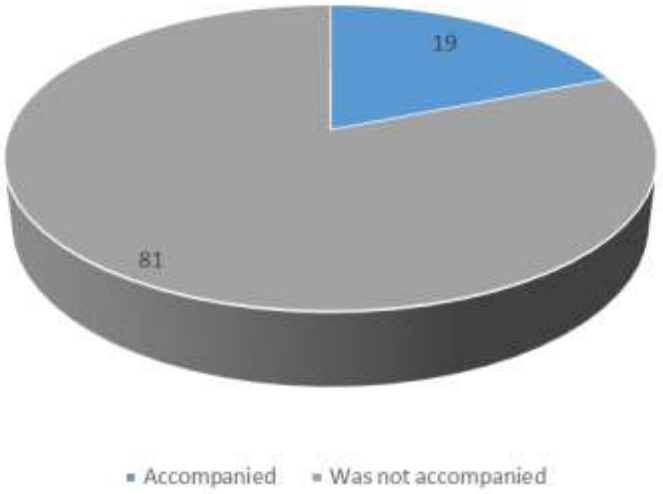


Figure 4.8: Respondents accompanied by Husbands during ANC visits

On ANC attendance, majority 94.7% (n=144) of the respondents made decision on their own on whether to attend or not (Table 4.3).

Table 4.3: Person making decision on respondent's attendance of ANC

Family Members	Frequency	Percentage
Participant	144	94.7
Father to child	1	0.7
Mother	2	1.3
Mother in law	1	0.7
Husband	4	2.6
Total	**152**	**100**

4.5.5 Group/organization support

Majority of the respondents 97.4% (n=148) did not receive support on utilization of ANC from group/organization (Figure 4.9).

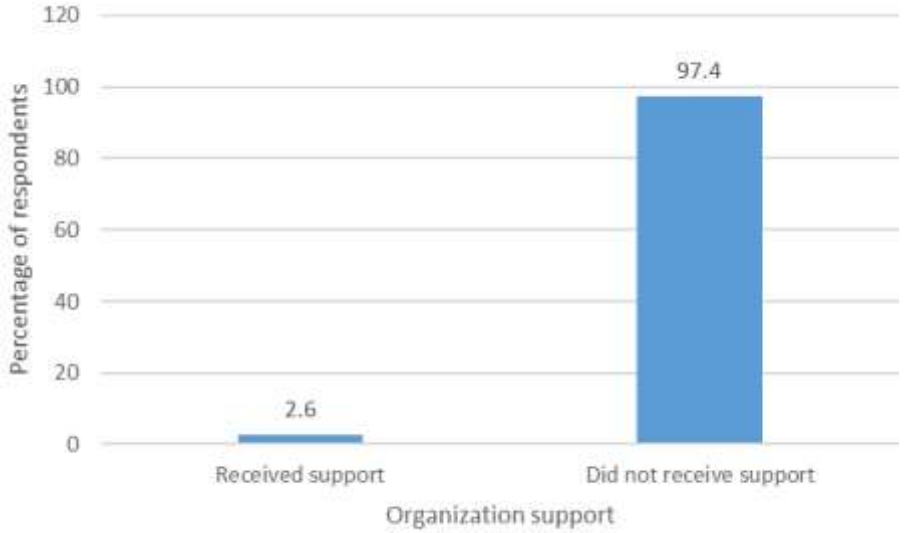


Figure 4.9: Respondents who receive Organization support on utilization of ANC

4.5.6 Sub-theme 3: organizational support

In addition, another respondent revealed that NGOs support was important for utilization of ANC. One respondent noted that:

> *"Support from NGOs is good and should be encouraged. They do provide free cesarean section operation. They provide education on the importance of visiting ANC clinic more than four times" Respondent 7 of FGD 9*

4.5.7 Socio-cultural factors and its association with the Utilization of ANC

All socio-cultural factors were not significant apart from paticipant receiving support from family members to attend ANC clinic and the family member that gave support most. Participants who received support from family members to attend ANC services was significantly associated with the level of utilization of antenatal care services (x^2 =4.699, P value=0.030). Family member that gave support most was significantly associated with the level of utilization of ANC (x^2 =14.36, P= value=0.002) (Table 4.4).

Table 4.4: Socio-cultural factors and its association with the Utilization of ANC

socio-cultural factors	Category	low level of ANC utilization	high level of ANC utilization	chi-square test	Degree of freedom	p-value
Sspiritual belief about intervention on pregnancy complications	Yes	1(0.6%)	1(0.6%)	0.021	1	0.881
	No	67(44.2%)	83 (54.3%)			
Family members support of anc	Yes	55 (35.7%)	76 (50.6%)	4.699	1	**0.03**
	No	14 (0.9%)	7 (0.05)			
Family member that gave support most	Spouse	44 (28.6%)	55 (37%)	14.31	3	**0.002**
	Parents	0 (0%)	11 (7.1%)			
	Siblings	11 (7.1%)	11 (7.1%)			
Participant accompanied by husband to anc	Yes	11 (7.1%)	18 (11.7%)	0.683	1	0.409
	No	55 (36.4%)	66(43.5%)			
The person making decision on whether to attend anc	Participant	64 (41.6%)	80(53.2%)	4.607	3	0.39
	Spouse	2 (1.3%)	2 (1.3%)			
	Relatives	3 (1.9%)	1 (0.6%)			
Participants spouse supportive toward anc attendance	Yes	50 (32.4%)	66 (44.1%)	1.771	1	0.815
	No	0 (0%)	3 (1.9%)			
Received organization support	Yes	1 (0.6%)	3 (1.9%)	0.651	1	0.421
	No	67 (44%)	81(63%)			
Organization support	Nongovernmental organization	0 (0%)	1(0.6%)	2.859	2	2.849
	Faith based organization	1 (0.6%)	0 (0%)			
	Community women group	0 (0%)	1 (0.6%)			

4.5.8 Logistic Regression on Socio- cultural factors

Binary logistic regression analysis was performed to model the relationship between the predictors (socio-cultural factors) and utilization of ANC. Participants who received support from family members to attend ANC was significantly associated with utilization of antenatal care, (O.R=2.836, P- value=0.035, Cl= 1.074-7.487). The participants who received family support utilized the ANC services more than those who did not receive. Participants who received family support were 2.8 times more likely to

utilize ANC than their counterparts. Support provided by spouse was significantly associated with utilization of ANC, (O.R=3.029, P-value=0.036, Cl= 1.075-8.502). The odds ratio showed that spouse support was three times more likely to influence ANC utilization (Table 4.5).

Table 4.5: Logistic Regression on socio-cultural factors

Dependent Variable	Independent Variables	Categories	Wald Statistics	Odds Ratio (OR)	P-Value	95% Confidence Interval (CI)	
						Lower	Upper
Utilization of ANC	Family members support of ANC	Yes	4.431	2.838	**0.035**	1.074	7.487
		No	2.242	0.500	0.134	1.074	7.487
	Family member that gave support most	Spouse	4.396	3.029	**0.036**	1.075	8.502
		Parents	0.000	3769441353.589	0.999	0.000	
		Siblings	1.710	2.333	0.191	0.655	8.309

4.5 Facility-related characteristics that influencing utilization of ANC services

4.5.1 Cleanness of health centers and health care personnel's

Majority of the respondents 89.5% (n=136) stated that the health-care facilities and health care personnel were fairly neat during the ANC visit (Table 4.6)

Table 4.6: Respondents who reported Cleanness of health-care facilities and health-care personnel

Feature	Frequency (n)	Percent (%)
Very neat	14	9.2
Fairy neat	136	89.5
Dirty	2	1.3
Total	**152**	**100**

4.5.2 Timeliness of care during antenatal care

Approximately more than 90% (n=148) of the respondents did not report delay during ANC visits (Figure 4.10).

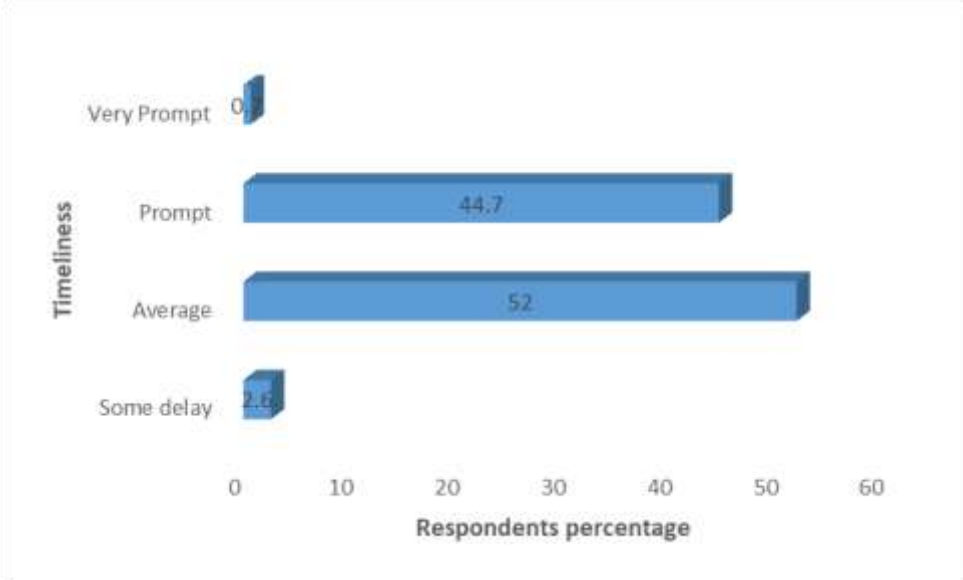


Figure 4.10: Respondents report on Timeliness on antenatal care

4.5.3 Sub-theme 1: Timeliness of ANC

Timeliness of ANC was also agreed to influence utilization of ANC. One participant said that:

> *"Health care workers had no time to serve us because one health care worker was working in child immunization, family planning and treatment room in addition to the ANC at the same time. Sometimes we had to wait to be served and we are not given quality time"* Respondent 3, of FGD 1.

The above sentiment was supported by other postnatal mothers who complained about being served late in the evening despite them arriving very early in the morning in the clinic. One responded said:

"I had to wait to be served after many hours despite arriving early in the morning in the clinic and I was not given enough time" Respondent1 of FGD 4.

4.5.4 Health care workers attitude during antenatal care

Almost half 41.4% (n=63) of respondents stated that the healthcare providers were friendly. However, only 7.8% (n=12) of postnatal mothers stated that health care workers had wanting attitude (Table 4.7).

Table 4.7: Respondents report on health care workers attitude during ANC

Attitude of health care providers	Frequency (n)	Percentage (%)
Friendly	63	41.4
Approachable	44	28.9
Ignore clients	19	12.5
Helpful when in good moods	13	8.5
Wanting attitude	12	7.8
Not indicated	1	0.7
Total	**152**	**100**

4.5.5 Sub-theme 2: Personality of health care workers

It came out evidently that personality of health care workers influenced ANC utilization. Specifically one respondent noted that:

"*Health care workers are rude and intolerant; they do not listen and provide to us ANC when we arrive late at the clinic*" Respondent 5 of FGD 1

Another respondent in the same FGD supported the sentiment by noting that:

"Health care workers are not human, when we come late they will not attend to us and we don't get the health education provided, they should know that we can get involved in other things which can make us to delay" Respondent7 of FGD 1

4.5.6 Privacy during antenatal care

Majority of the respondents 97.4 % (n=148) stated privacy was maintained during ANC visits, while less than three percent 2.6 %(n=4) reported lack of privacy (Figure 4.11).

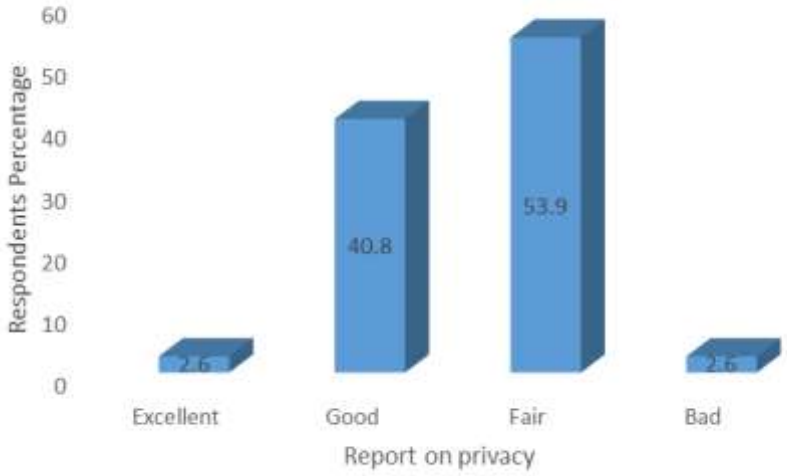


Figure 4.11: Respondents report on privacy during ANC

4.5.7 Distance to the health facility

Slightly less than two thirds of the respondents 62.5% (n=95) stated that the distance to the health facility was below five (5) kilometers (Table 4.8). Also, majority of the respondents 61.4% (n=95) indicated that they walked to the health facility, 30% (n=46) used motorcycles while 8.6% (n=13) motor vehicles.

Table 4.8: Respondents report on distance to the health facility

Distance	Frequency (n)	Percent (%)
Below 5km	95	62.5
6-10km	51	33.6
11-20 km	5	3.3
21-30 km	1	0.7
Total	**152**	**100**

On the amount of money used on transportation, almost a third of the respondents 30.5% (n=47) used between three and four hundred shillings as fare when going for ANC clinics (Table 4.9).

Table 4.9: Respondents' report on amount of money spent on transport during ANC visit

Amount of money	Frequency (n)	Percent (%)
less than 50ksh	3	2
50-100ksh	4	2.6
100-200ksh	18	11.8
200-300ksh	34	22.4
300-400ksh	47	30.9
400-500ksh	14	9.2
more than 500	14	9.2
walking	17	11.2
others	1	0.7
Total	**152**	**100**

4.5.8 Health care expenses

Majority of the respondents 76.3% (n=116) stated that ANC was free, but 9.8% (n=17) reported using less than 200 Kenyan shillings as fare to the health facility (Figure 4.12).

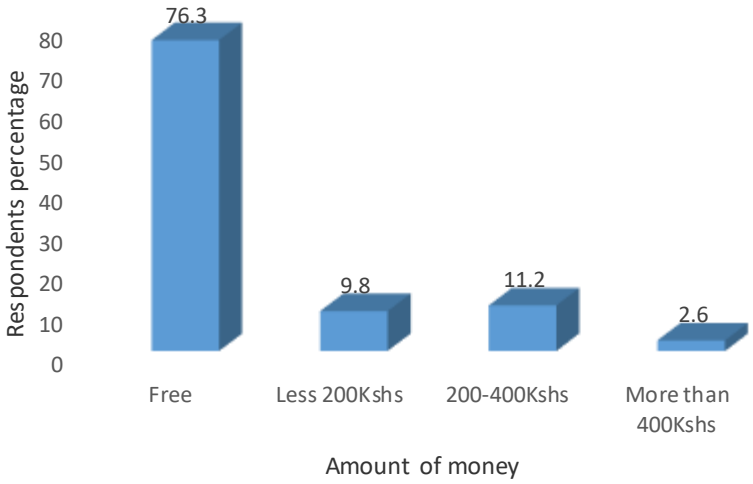


Figure 4.12: Respondents report on amount of money used as fare during ANC

4.5.9 Sub-theme 3: Expenses incurred

It was clear that expenses incurred by respondents influenced ANC utilization. Specifically one respondent noted that:

> "*Most of us we have come on foot; we cannot afford money for even hiring motorcycles. It is too expensive for us since we use more than 400 Kenya shillings as fare, which we cannot afford"* Respondent 7 of FGD 2

The same statement was supported by other respondents in FGDs who argued that lack of funds, poor means of transport and illiteracy were some of the difficulties that they faced when utilizing ANC services. One responded reported that:

> *"We lack money to buy drugs which are expensive, and because of this we see no need to attend ANC"* Respondent 7 of FGD 4

Lastly, other respondents in the FGDs supported the above sentiments by revealing that they were referred to other health care facilities, mostly private, for investigations. These investigations in these health care facilities were expensive. One respondent indicated that:

> *"I was sent to a private health care facility for ANC profile which was expensive and l could not afford"* Respondent 3.of FGD 2

4.5.10 Facility-related factors and its association with the Utilization of ANC

All facility related factors were not significantly associated with ANC utilization (Table 4.9)

Table 4.10: Facility-related factors and its association with the Utilization of ANC

Facility-related factors	Category	Low level of ANC utilization	High level of ANC utilization	Chi-square test	Degree of freedom	P-value
Cleanness of personnel and health centre	Very neat	9(5.8)	4(3.2%)	2.405	2	0.300
	Fairy neat	58(38.)	79(51.3)			
	Dirty	1(0.6%)	1(0.6%)			
Timeliness on service delivery	Very prompt	4(2.6%)	0	7.600	3	0.055
	Prompt	31(21.1%)	49(31.8%)			
	Average	33(21.4%)	36(23.4%)			
	Delays	1(0.6%)	0			
Privacy during anc visits	Excellent	4(2.6%)	0	7.750	3	0.051
	Good	30(20.1%)	51(33.8%)			
	Fair	32(20.8%)	31(20.1%)			
	Bad	2(1.3%)	2(1.3%)			
Participant overall rating on anc services	Excellent	4(2.6%)	1(0.6%)	4.844	3	0.184
	Good	29(18.8%)	45(30.5%)			
	Fair	34(22.1%)	36(23.4%)			
	Bad	2(1.3%)	1(0.6%)			
Distance participants traveled to hospital	Below 5km	38(24.7%)	57(38.3%)	4.624	3	0.201
	6-10km	28(18.2%)	23(14.9%)			
	11-20km	2(2.3%)	3(1.9%)			
	21-30km	1(0.6%)	0			
Participants means of transport to hospital.	Car/bus/lorry	9(5.8%)	8(5.2%)	1.833	3	0.608
	Motorcycle	49(31.8%)	62(40.9%)			
	Bicycle	1(0.6%)	0			
	Walking	10(6.5%)	14(9.1%)			
Expenses incurred by participants to access anc services in hospital	Less than 50ksh	3(1.9%)	1(0.6%)	7.854	7	0.346
	50ksh to 100ksh	3(1.9%)	1(0.6%)			
	100ksh to 200ksh	3(1.9%)	4(2.6%)			
	200ksh to 300ksh	4(2.6%)	6(3.9%)			
	300ksh to 400ksh	4(2.6%)	3(1.9%)			
	400 to 500ksh	0	2(1.3%)			
	More than 500ksh	2(1.3%)	0			
	It's free	50(32.5%)	66(44.2%)			
Expenses incurred by participants in transportation to hospital	Less than 50ksh	2(1.3%)	1(0.6%)	7.552	8	0.478
	50-100ksh	3(1.9%)	1(0.6%)			
	100-200ksh	7(4.5%)	11(7.1%)			
	200-300ksh	18(12.3%)	16(10.4%)			
	300-400ksh	18(11.7%)	29(18.8%)			
	400-500ksh	4(2.6%)	10(6.5%)			

	More than 500	8(5.2%)	6(3.9%)
	More than 500	8(5.2%)	9(6.5%)

CHAPTER FIVE

DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter entailed the discussion of the findings as per objectives, conclusions and recommendations of the study.

5.2 Discussion

5.2.1 Summary of the Findings

According to the findings, majority of the participants were aged between 20-24 years. This finding was similar to a study done by Abok, (2012) in Loima District of Turkana County, determining factors for utilization of ANC, where most of the participants were aged between 21-25 years. The finding also corresponded to the mean reproductive age of women in Kenya which is 20 - 24 years (KDHS, 2016).

Most of the respondents (94.1%) were married; this finding was similar to a study done by Desalegn, (2017) on safe motherhood in Kenya, where majority of women (78%) were married. On education status of respondents and their husbands, only 3.9% and 25% respectively had post-secondary education. Majority of participants' main occupation was housewives (56.6%) and their husbands (34.2%) were employed earning salary. These findings were similar to that of Desalegn, (2017).

5.2.2 Level of antenatal care utilization among post-natal mothers

More than half of the respondents (54.6%) had a low level of utilizing ANC while 45.4% a high level. This finding agreed with a study done in Upper West Region, Ghana where 41.3% of women had completed four or more visits and 58.7% had less than four visits (Sumankuuro *et al*., 2019). It's therefore clear that postnatal mothers of Saku sub-

county in Marsabit County were not able to attain the county recommended four ANC visits. Therefore an enabling environment is needed to assist postnatal mothers to attain a minimum of four ANC visits.

Almost half of the respondents (48.7%) had access to ANC services during the fifth and sixth months of pregnancy while nearly two percent (1.9%) at first and second month. This finding concur with a study done in Ethiopia where approximately 41% of the respondents attended ANC during sixth week (Zeine et *al.,* 2010). This finding also agreed with studies done in Ghana and Ethiopia that revealed that majority of postnatal mothers(71.3% and 94% respectively) had their first ANC visit at 6 to 8^{th} month (Sumankuuro *et al*., 2019). It was because women with prior pregnancies presumed to know about stages of pregnancy and neglected to initiate ANC early. Barriers to early ANC initiation also include; women's need to balance income generating activities and travel cost to the clinic.

Pregnant mothers and their unborn children can face risks of developing complications because of limited or late ANC visits. The challenges to most sub-Saharan African countries is to formulate application of the WHO ANC model within country needs in order to deliver effective and sustainable ANC services. According to Ali A, (2010) even when services are available, many postnatal mothers in sub-Saharan Africa come late for ANC and only once thereby limiting the quality of care provided. This hampers the delivery of effective ANC screening and treatment programs, potentially contributing to the high maternal and neonatal morbidity and mortality.

5.1.3 Socio-cultural factors that influence utilization of ANC among postnatal mothers.

Majority of the respondents (66.4%) believed that mentioning the pregnancy early to others was not safe while only (33.6%) believed it was safe, this finding is similar with a study done in Mozambique, where the author found that poor attendance at ANC was largely due to 56% of women's desire to hide their pregnancies from the community, for

fear that they would become the subject of a curse (Chapman, 2010). According to Chapman (2010), women viewed visiting ANC when pregnant as an advertisement to the whole community. Stigma associated with early pregnancy disclosure influenced both married and unmarried women in relation to the timing of antenatal care booking.

According to Mumtaz and Salway (2007), the shame of being pregnant, which was associated with sex, restricted postnatal mother's attendance of ANC. In Uganda, the stigma associated with under-age limited access of ANC by teenagers (Atuyambe *et al.*, 2009). Some women concealed their pregnancy deliberately as they feared disapproval by religious or faith groups, which hindered ANC utilization. Health professionals needed to be aware of the circumstances surrounding pregnancy to ensure that correct support and care are provided to both the mother and the un-born baby.

There was a significant association between utilization of ANC and receiving support from family members (P value= 0.035). Those who received support from family members had a higher utilization ANC. This finding was similar with a study done in South-Eastern Tanzania, where researchers established that women who had no support from their spouses or partners, attended ANC less than twice and counterparts more than thrice (Gross *et al* ., 2012). Similarly, in Nigeria, utilization of ANC was almost nine times more likely for women whose husbands approved ANC visits than their counterparts (Rosliza *et al.,* 2011). In a study done in Ethiopia, positive attitude from participants' spouses towards ANC was significantly related to its utilization (Zeine, *et al.,* 2010).

A very high percentage of the respondents (98.7%) felt that prayers only can't help pregnant women. This finding was similar with a study done by Chaibva (2009), in Mozambique, where it was revealed that religious beliefs in certain societies posed barriers to utilization of ANC. Healthcare providers should develop strategies and techniques to respond to religious and spiritual needs of patients.

Majority of the postnatal mothers (94.7%) were decision makers on matters dealing with attendance of ANC clinic. This finding disagreed with a study done in Thailand by Thaddeus and Maine (2009), where they found that postnatal mothers did not have autonomy in decision making and this limited ANC Utilization. Sultana *et al.,* (2017) in China, indicated that decision-making regarding access to ANC was strongly influenced by values and opinions of husbands, mother-in-laws, traditional birth attendants and other family and community members, more than pregnant women. Autonomy in women's decision-making could have positive effect on ANC service use.

Eighty one percent of the respondents were not accompanied by their spouses during ANC visit. This finding was not similar to a study done in Northern Uganda, where 81.5% of spouses escorted postnatal mothers to ANC clinic (Turyasiima, 2014). In India, a study found that having a spouse or partner who was not supportive was associated with late initiation of ANC (Gross *et al*., 2012). World Health Organization (WHO) recommended male involvement during pregnancy, child birth and postnatal period as an effective intervention to improve maternal and newborn outcomes (WHO, 2015). Thus, target interventions such as tailored messages, health education and innovative strategies increases male involvement during ANC.

Participant receiving support from family members to attend ANC clinic and the family member that gave support most. Participants who received support from family members to attend ANC services was significantly associated with the level of utilization of antenatal care services ($x2$ =4.699, P value=0.030). Therefore the H1 is rejected in favor of the alternative hypothesis

5.1.4 Facility related characteristics among post natal mothers

Majority of the respondents (98.7%) stated that the health centers and health care personnels were neat during the ANC visits. The same finding was reported in a study done in Arab by Fatusi *et al.,* (2006), where 85% of clients reported that the health

facility environment was clean. Therefore, it is paramount that the environment in which ANC services are provided should be appealing to its clients.

According to the study, 41.1% of respondents stated that the health care professionals were friendly. Health care professionals should be friendly and approachable. The same finding was reported in Rwanda, where almost a half of participants (49%) reported that health care professionals were kind, friendly and approachable and this made majority of them (85%) to attend ANC (Magadi, 2011).

Majority of the respondents (97.4%) reported that privacy was maintained during ANC. This finding was in agreement with a study done in Utta Pradesh by Faxelid *et al.,* (2015), who revealed that lack of privacy and confidentiality within a health care system hindered ANC Utilization. Respecting individuals' privacy and confidentiality is a form of recognition of their moral uniqueness. Breaching of privacy and confidentiality not only affect a person's dignity, but can also cause harm. Ensuring privacy can also promote more effective communication between health care workers and patients, which is essential for quality of care.

Slightly less than two thirds of the respondents (62.5%) and (33.6%) stated that the health facility was below five (5) kilometers and between 6 to 10km respectively. This finding was not in agreement with a study done by Rodríguez, *et al.,* (2014), in Ethiopia, where 10% of respondents said that the distance to the health facility was below five kilometers. A study conducted by Magadi *et al.,* (2011), in Kenya, demonstrated that an increase in distance to the healthcare facilities was associated with fewer ANC visits. Moreover, in Ghana, it was noted that uncomfortable transport mechanisms, poor road conditions and difficulties in crossing rivers were barriers to utilization of ANC (Banda, 2013). To enhance postnatal mother's access to ANC, reliable transport to a hospital must be available.

Majority of the respondents (76.6%) stated that ANC was free of charge, but almost 7% stated that they spent between two and three hundred Kenyan shilling to obtain the ANC

services. There was no significant association between the cost of ANC and utilization of ANC, which was similar to a study done by Atuyambe *et al.,* (2009) in Nigeria. But this finding was not similar with Kasabiiti *et al*, (2007) study in western Uganda where it was established that ability of a woman to afford ANC was significantly associated to the number of ANC visits she was likely to attend. According to systematic review done by Simkhada *et al.,* (2011), cost of services and low social economic status contributes to reduced number of ANC visits. Perceived high cost of ANC might influence some pregnant women, to resort to traditional birth attendants (TBAs).

Since no facility-related factors was associated with utilization of ANC services, at Saku sub-county, then null hypothesis 2 was accepted.

5.2 Conclusions

It is therefore concluded that pregnant women in saku Sub County had low utilization of the antenatal care services where fifty five point two percent and 44.8 % of participants had low and high level of ANC utilization respectively. Most maternal and many neonatal deaths could be prevented if adequate antenatal care and effective obstetric services were provided. However, if pregnant women did not utilize antenatal care services, many obstetric problems could become life threatening crises for both mother and baby by the time these were diagnosed. Utilizing antenatal care services is particularly important to the pregnant women who are most likely to be prone to developing obstetric complications.

Among social-cultural factors, family support and family member who gave support were statistically significantly associated with utilization of ANC at P-value=0.035 and 0.036 respectively.

Among facility related factors, none was statistically significantly associated with utilization of ANC Services

5.3 Recommendations

1. To improve level of ANC utilization, health education of couple about the benefits of attending ANC should be enhanced at the hospital.
2. Family support should be enhanced through health education during ANC visits.
3. The researcher recommends the importance of scaling up women's health education in MCH clinics to enhance decision making power.

5.4 Suggestions for Further Study

Further studies s on the same study to be done using longitudinal study design in order to generate detailed information which would help improve delivery of ANC services.

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APPENDICES

Appendix I: Consent Form

This Informed Consent Form is for mothers of **Saku Sub County Kenya** who are invited to participate in this research on Utilization of antenatal care services among postnatal mothers at Saku Sub County Kenya.

The title of the research project is "Determinants that influence utilization of antenatal care services among postnatal mothers at Saku Sub County Kenya.

Name of Principal Investigator: David Murithi.

Name of Organization; Jomo Kenyatta University Agriculture and Technology

Title of Proposal: "Determinants that influence utilization of antenatal care services among postnatal mothers at Saku Sub County Kenya.

This Informed Consent Form has two parts:

- Information Sheet (to share information about the research with you),
- Certificate of Consent (for signatures if you agree to take part).

You will be given a copy of the full Informed Consent Form

PART I: Information Sheet

Introduction

My name is David Murithi. I am a student undertaking a degree of Master of Science in Nursing (Reproductive Health) at Jomo Kenyatta University Agriculture and Technology.

As a requirement by the university, for completion and award of my degree, I am conducting a study on the Utilization of antenatal care services among postnatal mothers at Saku Sub County Kenya.

I am going to extensively explain about this research and invite you voluntarily to be part of this research. I am going to give you time to decide on whether you will participate in the research. You are free to consult any person before making any decision.

I am going to use the language that you understand either spoken or written. You are free to ask any question or clarification about the research during data collection. Even after data collection you can ask questions by directing them to the address I will provide at the end of this document. I am going to leave my mobile number so that you can call later in case of any doubt.

Purpose of the research

To determine determinants that influence utilization of antenatal care services among postnatal mothers at Saku Sub County Kenya, Kenya. This will be vital in the development of policies, strategies, and interventions to enhance ANC service deliveries and its utilization in Saku Sub County, Marsabit program.

Type of Research Intervention

This research will have no intervention

Participant selection

The research study is welcoming post-natal mothers of Saku Sub County who will be coming for post-natal care during immunization of babies.

Voluntary Participation

Your involvement in this research is completely voluntary. It is your choice whether to take part or not. Whether you choose to take part or not will not affect you in any way. You may change your mind later and discontinue taking part even if you had agreed earlier.

Duration

The data collection will only take period of two hours. During this time, you will only be expected to answer the questions asked as outlined.

Risks

There are no risks involved in taking part in this research.

Benefits

There may not be any direct benefit for you as an individual but your involvement is expected to help us find the response to the research question stated in the research proposal. There may not be any benefit to the community at this stage of the research, but future generations can benefit from published document.

Confidentiality

It is possible that if others in the community are mindful that you are taking part in the study, they may ask you queries related to what we will be doing. We are assuring you that we will not be sharing the identity of those taking part in the research.

Informed consent will be obtained from you in order to participate in the study. To ensure confidentiality the data collection forms will not bear the name or the ethnicity of you and will be identified by the study code number. Only the researchers will recognize

what your number is and we will lock that data up with a lock and key. It will not be shared with or given to anybody except David Murithi the principal investigator who will have access to the information, In this case also data will not be breeched. All the data and the information obtained during the study will be used for the sole purpose of meeting the objective of the study.

Sharing the Results

The data that we obtain from doing this thesis will be published in order that all the interested people may learn from the thesis.

Right to Refuse or Withdraw

You do not have to take part in this study if you are not comfortable doing so. You may also withdraw from taking part in the study at any stage you decide on. It is your constitutional right and all of your rights will still be observed.

Who to Contact

If you have any queries you are welcome to ask them at the moment or later, even when the study is in progress. If you wish to ask questions later, you may communication to me using of the following contacts.

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KENYA.

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Those consenting will sign as well as another witness.

Those who cannot write will use ink pads for thumbprints

Area for Thumbprints

Appendix II: Questionnaires

DEMOGRAPHIC QUESTIONARRES

Section A. Demographic factors

Questionnaire ID_____

Sub County_____

Location_____

Sub-location_____

Village_____

1.Sex? (tick one)

a. Male ( )
b. Female ( )

2.Age:

a) < 15 years ( ) b) 15-19 ( ) c) 20-24 ( ) d) 25-29 ( ) e) 30-34 ( ) f) 35-39 ( ) g) 40-44 ( ) h) 40-44 ( ) i) 45-49 ( ) j) 50-54 ( ) k) 55-59 ( ) l) 60+ ( )

3. Marital status?

i. Single ( )
ii. Married ( )
iii. Separated ( )
iv. Divorced ( )
v. Widowed/widower ( )

vi. Others please explain_____?

4. What Largest level of education have you attained?

i. Primary ( )
ii. Secondary ( )
iii. Post secondary ( )
iv. Tertiary/University ( )
v. None ( )
vi. Others please explain_____?

5. Level of education of respondent's husband:

a) Primary ( ) b) Secondary ( ) c) University ( ) d) None ( )

e) Others (specify**)……**

6. What is your main occupation? (Tick one) _____?

i. Peasant farmers. ( )
ii. Small business (kioski, Kibanda) ( )
iii. Big business (shop, wholesalers) ( )
iv. Housewife ( )
v. Casual laborer ( )
vi. Fishing ( )
vii. Salaried worker e.g. teacher, policeman ( )
viii. Wood carving ( )

Others please explain_____?

7. What is your husband main occupation? (Tick one)

i. Peasant farmers. ( )

ii. Small business (kioski, Kibanda). ( )

iii. Big business (shop, wholesalers). ( )

iv. Housewife. ( )

v. Casual laborer. ( )

vi. Fishing. ( )

vii. Salaried worker e.g. teacher, policeman. ( )

viii. Wood carving. ( )

Others please explain_____?

8. What is your religion?

a) Christian ( )

b) Muslim ( )

c) Others

specify_____?

9. Number of children ever born:

a) 1-2 ( ) b) 3-4 ( ) c) 5-6 ( ) d) 6-7 ( ) e) 8-9 ( ) f) 9-10 ( )

g) Above 10 ( )

Level of ANC utilization

1) **Did you have access to the health facilities when you were pregnant?** a) Yes (

) b) No ( )

2) If yes, at what period of your pregnancy?

a) 1-2 months ( )

b) 3-4 months ( )

c) 5-6 months ( )

d) 7-8 months ( )

3) Did you attend ANC preceding pregnancy?

a) Yes- c) no

b) If yes No. of Times ( )

i. 1 ( )

ii. 2-3 ( )

iii. 4 ( )

iv. 5-6 ( )

v. Over 7 ( )

c) No ( )

d) Not attended- Reason……..

4) What kind of activity took place when you visited the Antennal Care Service?

a) Your weight was recorded ( )

b) Your blood pressure was measured ( )

c) You received an antitetanus vaccination ( )

d) You received breastfeeding counseling ( )

e) You received newborn counseling ( )

f) You received anti-malarial treatment ( )

g) You were informed about the signs and symptoms of pregnancy complications ( )

5. For at least how many times did you come for antenatal follow up throughout your pregnancy?

a) 1 ( )

b) 2-3 ( )

c) 4 ( )

d) 5-6 ( )

e) Over 7 ( )

6. Were you given inj. TT during pregnancy?

a) Yes ( )

b) No ( )If yes how many inj. TT have you taken during pregnancy?.....

7. Did vitamin get supplement during pregnancy?

a) Yes ( )

b) No ( )

d) If yes how many times have you taken vitamin supplement during pregnancy?

8. Have did you do Blood screening for hemoglobin level, sugar level, Blood pressure?

a) Yes ( )

b) No ( )

Social cultural related factor that influence utilization of ANC services

1). Do you think it is only spiritual intervention (prayers) that can help when you pregnant related complication?

i. Yes ( )
ii. No ( )
iii. If yes, please explain_____?
iv. If no, please explain_____?
v. Others specify_____

? 2). Did you receive encouragement to attend ANC services from the family member.

a) Ye s ( )

b) No ( )

c) If yes, please explain_____?

d) If no, please explain_____?

e) Others specify_____?

3. Did you get any support from any Organizations/Support group that enables you seeks ANC service?

a) Yes ☐

b) No ☐

c) If yes, which organization_____?

d) If No, please explain_____?

e) Others specify_____?

5. Does your husband escort you to the clinics when seeking ANC services?

a) Ye s ( )

b) No ( )

6. Who made decision to attend ANC?

a) I ( )

b) Husband ( )

c) My Mother ( )

d) Mother in law ( )

e) Other ( )

7. What was/is your husband's attitude towards ANC attendance?

a) Supportive ( )

b) Not supportive ( )

c) Don't know ( )

8. Do you think it would be a good idea for husbands to be accompanying you to ANC clinic?

a) Ye s ( )

b) No ( )

9. Testing for HIV can prevent you from attending ANC?

a) Yes ( )

b) No ( )

10. Do you believe alcohol drinking can affect fetal growth?

a) Ye s ( )

b) No ( )

11. Do you believe that vitamin supplement is good for the fetus?

a) Ye s ( )

b) No ( )

Facility related factors that influencing utilization of ANC services

1. What was the situation of the hospital and their personnel's when attending ANC Services? a) Very neat ( ) b) Dirty ( ) c) Fairly neat ( ) d) others (specify)……

2. How was timeliness at any of stages you attended ANC?

a) Very Prompt

b) Prompt

c) Average

d) Some delay

3. What was the staff attitude/ friendliness during ANC visit?

a)

4. How was privacy during ANC visit?

a) Excellent ( ) b) Good ( ) c) Fair ( ) d) Bad ( )

5. What was your overall rating of ANC services?

a) Excellent ( ) b) Good ( ) c) Fair ( ) d) Bad ( )

6. How far is the facility of ANC services?

a. Below 5 km ( )
b. 6-10 km ( )
c. 11- 20 km ( )

d. 21- 30km ( )
e. 31-40 km ( )
f. Over 40km ( )

7. When attending ANC services, which means did you use?

a) Car/ Bus/ Lorry ( )
b) Motor cycle ( )
c) Bicycle ( )
d) Cart ( )
e) Donkey ( )
f) Walking ( )
g) Not receive support on utilization of ANC from group/organization (Figure 4.9).

Appendix III: Focus Group Discussion Guide

Socio-cultural factors

a. In your own opinion do you belief that that prayers only can help a pregnant woman?
b. In your own opinion do you think you received support from family members to attend ANC services?
c. What is your opinion on being accompanied by your husband during ANC visit?
d. In your own opinions who made decision about ANC in the family.
e. Do you think you received support on utilization of ANC from group/organization?

Facility-related factors

a. How was cleanness of health-care facilities and health-care personnel?
b. In your how opinion how much time was taken by health care to be attended when you visited ANC clinic?
c. How was Health care workers attitude when you visited ANC Clinic?
d. In your own opinion was Privacy maintained during ANC Visit?

In your own opinion how much did you incur when you v

Appendix IV: Marsabit County Government Approval for data collection

REPUBLIC OF KENYA

COUNTY GOVERNMENT OF MARSABIT
DEPARTMENT OF HEALTH
MARSABIT COUNTY REFERRAL HOSPITAL

RE: CGM/MCRH/Gov./VOL.IV/5

Email: marsabithospital@gmail.com
Address: 5-60500
Date: 30th April 2019

To David Murithi

RE: APPROVAL FOR DATA COLLECTION

This is to confirm the approval of data collection on research project titled: "Determinants of utilization of antenatal care services among pregnant women at Saku Sub County, Kenya.
Necessary support will be offered during data collection.

Regards

HEALTH ADMINISTRATIVE OFFICER
MARSABIT COUNTY REFERRAL HOSPITAL
P.O.BOX 5 MARSABIT

Muthomi Marete
HEALTH ADMINISTRATIVE OFFICER
MARSABIT COUNTY REFERRAL HOSPITAL