

**DETERMINANTS OF UTILIZATION OF MATERNAL HEALTHCARE
SERVICES AMONG WOMEN OF REPRODUCTIVE AGE (15-49 YEARS)
SEEKING CARE IN KAPKOI HEALTH CENTER, TRANS NZOIA COUNTY**

**BY
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**A THESIS SUBMITTED TO THE SCHOOL OF HEALTH SCIENCE IN
FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTERS
IN EPIDEMIOLOGY AND BIOSTASTITICS OF JARAMOGI OGINGA
ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY.**

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DECLARATION AND APPROVAL

Declaration

This thesis is my original work and has not been presented for an award of a degree or diploma in any other university or institution.

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DEDICATION

To my dear wife Agnes, your unwavering support and sacrifices have made this academic journey possible. I dedicate this study to you with deep gratitude for being my rock and my inspiration.

In loving memory of my late sister Dorothy, her contribution to my undergraduate education will forever remain in my heart. I dedicate this study to her, a beacon of generosity and belief in my potential.

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LIST OF ABBREVIATIONS AND ACRONYMS

AIDS	Acquired Immuno Deficiency Syndrome
ANC	Antenatal Care
DEPAM	Decentralized Education Programme for Advanced Midwives
DOH	Department of Health
KDHS	Kenya Demographic Health Survey
KNBS	Kenya National Bureau of Statistics
MDGs	Millennium Development Goals
MMR	Maternal Mortality Rate
MOH	Ministry of Health
NCPD	National Council for Population and Development
NGO	Non-Governmental Organization
PHC	Primary Health Care
PMNCH	Partnership for Maternal, Newborn and Child Health
PNC	Postnatal Care
PPE	Personal Protective Equipment
SBA	Skilled Birth Attendants
SDGs	Sustainable Development Goals
SMR	Saving Mothers Report
SSA	Sub-Saharan Africa
TB	Tuberculosis
TBA	Traditional Birth Attendant
UN	United Nations
UNFPA	United Nations Fund for Population Activities
UNICEF	United Nations Children’s Fund
WHO	World Health Organization

OPERATIONAL DEFINITION OF TERMS

Antenatal Care	Antenatal care is a set of healthcare services provided to pregnant women before childbirth. These services include regular check-ups, medical examinations, and education about pregnancy and childbirth
Chi-Square	The chi-square (χ^2) statistic is a statistical test used to determine if there is a significant association or independence between two categorical variables in a dataset.
Conceptual Framework	A conceptual framework is a structured representation of a theory or model used to explain or understand a particular phenomenon or set of relationships. It typically includes key concepts, variables, and their interconnections
Health System	A health system is the combination of all organizations, institutions, resources, and individuals involved in delivering healthcare services to a defined population.
Maternal Health	Maternal health refers to the physical, mental, and social well-being of women during pregnancy, childbirth, and the postpartum period.
Morbidity	Morbidity refers to the prevalence of illness, injury, or health conditions within a specific population.
Mortality	Mortality refers to the number of deaths within a specific population during a particular time period.
Postnatal Care	Postnatal care, also known as postpartum care, involves healthcare services and support provided to mothers and newborns in the weeks and months following childbirth.
Postpartum Haemorrhage	Postpartum hemorrhage is a significant loss of blood from the genital tract after childbirth.
Pre-eclampsia	Pre-eclampsia is a pregnancy complication characterized by high blood pressure and damage to organs, typically the liver and kidneys.
Primary Healthcare	Primary healthcare is the essential and basic level of healthcare services provided to individuals and communities.
Utilization	Utilization refers to the extent to which a healthcare service or resource is used by individuals or a community.

ABSTRACT

Maternal care is described as regular clinical and nursing care recommended for women of reproductive age during pregnancy, childbirth and postpartum. The maternal mortality rate in Trans Nzoia County, particularly at Kapkoi Health Center, was alarmingly high in 2018, contributing to 19.5% of total maternal deaths in the county. A comparative analysis of health centres in the sub-county for 2017-2018 revealed that Kapkoi Health Center consistently had low maternal health indicators, with only 24% of women using antenatal care, 25% for skilled delivery, and 24% for postnatal care. The study sought to establish determinants of utilization of maternal healthcare services among women of reproductive age (15-49 years) seeking maternal healthcare services within Kapkoi Health Center. Specific objectives were socio-demographic, client and client determinants of utilization of maternal healthcare services among women of reproductive age (15-49 years). The study adopted cross-sectional design. A simple random sampling technique was used to select respondents who visited the facility during the study period. The study sample consisted of 266 women of reproductive. The data was collected using simple structured questionnaire and focused group discussion guide. The descriptive result shows more the majority of study respondents had primary education 47.0% (125), a significant portion of the respondents were aged between 20-35 years 53.4% (142). The study used Chi-square test to determine associations between utilization of maternal services and demographic, client and health provider determinants. The significant demographic determinants of maternal healthcare services were education ($\chi^2=1.5343$ df=3 p=0.037), age ($\chi^2=18.143$ df=2 p=0.016), gravidity ($\chi^2=48.553$ df=1 p=0.028), while no significant result were marital status ($\chi^2=6.639$ df=3 p=0.084) and occupation ($\chi^2=3.010$ df=3 p=0.536). The significant determinants of maternal healthcare services utilization for client determinants were religious practices ($\chi^2=0.198$ df=4 p=0.034), cultural practices ($\chi^2=2.786$ df=4 p=0.043) and perception ($\chi^2=2,446$ df=4 p=0.001), while no significant result were knowledge ($\chi^2=0.198$ df=4 p=0.978) and distance to the facility ($\chi^2=6.315$ df=4 p=0.177). Results provided by the respondents regarding healthcare provider determinants with significant results were quality of skilled personnel ($\chi^2=17.897$ df=4 p=0.046) and attitude of healthcare provider ($\chi^2=6.345$ df=4 p=0.026) while no significant determinants were availability of skilled personnel ($\chi^2=14.567$ df=4 p=0.567). In conclusion, the study highlights the critical influence of skilled personnel availability, service quality, and healthcare provider attitudes on maternal healthcare utilization among women of reproductive age, with postnatal women showing more positive perceptions quality of service offered. The findings emphasized the need for healthcare facilities and policymakers to prioritize improving quality of maternal services by addressing variations in provider attitudes, and promoting patient-centred care to enhance maternal healthcare utilization and improve maternal and child health outcomes. More efforts should focus on enhancing healthcare provider attitudes and promoting patient-centred care during both antenatal and postnatal care to improve women's utilization of maternal healthcare services. Investment in the quality of maternal services, targeted information campaigns to address cultural and religious beliefs, awareness promotion of free maternal services, tailored interventions for antenatal and postnatal respondents, and addressing distance barriers to healthcare utilization are essential steps to enhance maternal healthcare access and quality of care.

CHAPTER ONE

INTRODUCTION

1.1 Introduction

Maternal wellbeing is the health of women during pregnancy, at childbirth and postpartum period. It entails the healthcare dimensions of family planning, preconception, both prenatal and postnatal care services to guarantee a positive satisfying experience, in most cases and reduce morbidity and mortality in other cases (Castella, 2020). Maternal health revolves around the health and wellbeing of women, especially when they are pregnant and at the time they give birth, as well as the upbringing of the child. Despite the fact that motherhood has been considered a satisfying normal experience that is emotional to the mother, a high percentage undergo through difficulties where they suffer as a result of maternal health issue and a number of them even die as a result of maternal health complications (WHO, 2017).

1.2 Background Information

Maternal healthcare is a regular clinical and nursing care recommended for women of reproductive age during and after pregnancy (Cleland, 2019). Maternal care is a form of preventive measure with the aim of provision of routine medical check-up that permits healthcare workers and midwives to treat and prevent any potential medical conditions over a span of pregnancy and post-delivery period (Andersen, RM. & Newman, 2020). Antenatal healthcare offers women guidance and information on appropriate place to deliver, service to seek depending on condition of a woman (Ali, 2019). Likewise, it offers opportunity to inform women on possible danger that requires immediate attention from healthcare workers. Antenatal provides information which in turn assist in preventing severity of pregnancy related issues through follow ups, monitoring and treatment of illness and conditions during pregnancy such hypertension, malaria, anaemia which put at risk lives of both mother and the unborn baby (S.Banda, 2017).

Complications associated with pregnancies and deliveries pose a major concern in the developing countries. It is also one of the major causes of death due to complication and disability among women of childbearing age in Kenya (Ochieng B.M, 2020). The main cause of maternal mortality and disability among women of reproductive ages are linked to puerperal sepsis, unsafe abortion, haemorrhage, and obstructed labor (UNICEF, 2017). Facility service provision has therefore become key part in utilization of maternal

services. There has been recommendation by World Health organization on women of reproductive age to carry case note to help in improving continuity and quality of care(WHO, 2017).

The global maternal mortality ratio due to underutilization of maternal healthcare decreased from 385 deaths per 100,000 live births to 216 deaths per 100,000 live births, representing a 44% decline (UNFPA, 2017). This resulted in annual average reduction of 2.3 %. Analysis done globally indicates that each continent has advanced in improving maternal wellbeing of every mother seeking healthcare services, despite the fact that level of maternal utilization remains unsatisfactorily high in Sub-Saharan Africa (UNFPA, 2017). Any maternal death can be prevented as evidenced by huge gaps between the rich and the poor, lifetime hazard of maternal death in developed countries is 1 out of 3300 compared to 1 out of 41 in third world countries (UNICEF, 2019).

Report by UNICECF, 2019 indicates that the number of girls and women of reproductive age who die each year from maternal complications declined from 532,000 in 1990 to 303,000 in 2017 (UNICEF, 2019). These deaths are associated with lack of utilization of maternal services. The report stated that for every woman who dies, estimated number of 20 suffer from serious maternal injuries, infection or other forms of maternal disabilities. Close to all maternal complications and death occur in developing countries as a result of lack of quality maternal care (UNICEF, 2019).

Maternal death and complication can occur any time without any sign at any given time when women do not seek the services at the right time (UNICEF, 2017). Most of the maternal deaths and complications can be avoided if done by skilled health professionals or midwives (Countdown to 2030, 2019). Complications require immediate access and utilization to quality obstetric services with fully equipped lifesaving drugs and oxygen, as well as the ability to provide blood transfusion needed to perform caesarean section and other surgical procedures (WHO, 2017).

Globally 287,000 maternal mortality occurred in 2014, out of which 99 % (284,000) were from developing countries (WHO, 2017). Executing and guaranteeing utilization of maternal care is one of the most effective maternal health intervention for preventing deaths as well as maternal morbidity (Barrera, 2017).

In Kenya, most maternal deaths are directly related to lack of utilization of maternal services during pregnancy and childbirth, unsafe abortions, obstetric complication like severe bleeding (J.Kaggia, 2017). If women of child-bearing age fail to utilize maternal healthcare in good time, they may risk developing complications. The third goal of Sustainability Development Goals is aimed at increasing life expectancy by reducing some of the commonly known killer associated with child and maternal mortality (Countdown to 2030, 2019). This can be achieved by making progress towards achieving the target of less than 70 maternal deaths per 100,000 live births by 2030 consequently this would require improved skilled delivery, ensure healthy lives and promote well-being for all age groups. The main goal is to reduce the global maternal burden; end preventable deaths of newborns and children.

The government of Kenya through Ministry of Health, introduced free maternal services in 2013 through UHC in order to reduce high maternal mortality rate that was reported to be 488 deaths per every 100,000 pregnant mother, (KDHS, 2014). Despite this intervention, only 62 % of births in Kenya were reported to be through skilled providers (KDHS, 2014). Similarly, 61 % of the deliveries were done at the health facilities (KDHS, 2014). The overall loss of pregnant mothers negatively affects the entire economy of a country in the long-term. To ensure effective policies and realization of Kenya's vision 2030 of a healthy population with low maternal mortality, there is need to study determinants of low maternal healthcare services uptake.

In ensuring the quality utilization of maternal healthcare services, Kenya made various commitments; Recruitment and deployment of 20,000 primary health care workers, establishment of 210 primary health facilities to provide maternal and child health services and expand community health systems (MoH, 2019).

The study on the determinants of low maternal healthcare utilization among women of reproductive age in Kapkoi Health Center, Trans-Nzoia County, Kenya, is necessitated by the consistently high maternal mortality rates in the Western regions, exemplified by an 8.1% maternal mortality rate (KHIS, 2018). This highlights a pressing public health concern with severe risks to the lives of women during pregnancy and childbirth, emphasizing the urgency of understanding the determinants contributing to limited access

to healthcare services and ultimately aiming to improve maternal and reproductive health outcomes in the region.

Table 1.1: Sub – county expected vs actual maternal uptakes and mortalities reported in 2017 & 2018

Facilities in Kwanza Sub County	Expected Annual Maternal Uptake	Actual maternal uptake (%)	Annual Maternal deaths Reported in 2017 & 2018 (per 1000 population)	
			2017	2018
Keiyo Health Center	588	60%	13	8
Muongano Health Center	550	58%	9	7
Kolongolo Health Center	500	65%	5	3
Kapkoi Health Center	1786	36%	24	25
Biketi Health Center	380	48%	16	10

Source: Adopted and modified from KHS Report, 2018

1.3 Statement of the Problem

The high maternal mortality rate is a critical issue affecting women of childbearing age (15-49 years) in Trans Nzoia County, with a significant and alarming number of maternal-related deaths reported by the Ministry of Health (MoH, 2018) particularly at Kapkoi Health Center. These fatalities account for a substantial portion, representing 19.5% of the total maternal deaths in the county. Furthermore, a comparative analysis of health centers within the sub-county for the period 2017-2018 reveals that Kapkoi Health Center consistently reports the poorest maternal health indicators, with antenatal, skilled delivery, and postnatal care utilization rates at just 24%, 25%, and 24%, respectively. Additionally, according to Trans-Nzoia County report at glance, County Health Management Team's site support supervision conducted in 2019, ranked Kapkoi Health Center as the lowest-performing facility among 11 health centers with same level as Kapkoi Health Center, specifically in terms of maternal services offered to the women of reproductive age (MoH, 2019). Despite concerted efforts by both the National and County Governments to enhance maternal health indicators and service accessibility, Kapkoi Health Center remains a facility with notably low maternal service uptake. Hence, this study sought to investigate the determinants influencing the utilization of maternal

healthcare services among women of reproductive age seeking care at Kapkoi Health Center.

Table 1.2: Maternal Health uptake among Health Centers in Kwanza Sub County

Maternal Service	Keiyo H/c		Muungano H/c		Kolongolo H/c		Kapkoi H/c		Biketi H/c	
	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018
ANC Attendance	38%	37%	34%	40%	51%	54%	26%	24%	38%	30%
Skilled Delivery	35%	39%	44%	44%	52%	52%	27%	25%	35%	47%
Unskilled Delivery	45%	44%	36%	34%	36%	28%	61%	58%	40%	38%
PNC Attendance	43%	45%	38%	42%	48%	46%	27%	24%	40%	43%

Source: Adopted and modified from Trans-Nzoia Health, 2019

1.4 Research Objectives

1.4.1 General Objectives

To find determinants of utilization of maternal healthcare among women of reproductive age seeking services at Kapkoi Health Center, Trans Nzoia county.

1.4.2 Specific Objectives

1. To identify socio-demographic determinants of utilization of maternal healthcare among women seeking services at Kapkoi Health Center, Trans-Nzoia County.
2. To identify clients' determinants of influencing utilization of maternal healthcare among women of reproductive age seeking service at Kapkoi Health Center, Trans Nzoia County.
3. To identify health provider's determinants of utilization of maternal healthcare among women of reproductive age seeking services at Kapkoi Health Center, Trans Nzoia County.

1.5 Research Question

1. What are the socio-demographic determinants influencing utilization of maternal healthcare services among women of reproductive age seeking services at Kapkoi Health Center, Trans Nzoia County?
2. What are the clients' determinants of utilization maternal healthcare service among women of reproductive seeking services at Kapkoi Health Center, Trans Nzoia County?
3. What are the health provider's determinants influencing utilization maternal healthcare services among women of reproductive age seeking services at Kapkoi Health Center, Trans Nzoia County?

1.6 Justification

Maternal mortality remains a critical concern, and Kapkoi Health Center has consistently reported alarmingly high maternal mortality rates (MoH, 2019). By conducting this study, the findings aim to uncover the underlying socio-demographic determinants that contribute to low maternal healthcare utilization in the region. This knowledge is essential for policymakers, healthcare providers, and community stakeholders who seek to improve the quality and accessibility of maternal healthcare services. Understanding these determinants will enable targeted interventions and policy adjustments to mitigate the existing barriers and ultimately enhance the health and well-being of women in their childbearing years.

Furthermore, addressing the issue of low maternal healthcare utilization at Kapkoi Health Center is critical in the context of broader national and international goals. Both the Kenyan government's Ministry of Health Plan (MoH, 2019) and the National Reproductive Health Strategy for Kenya (NRHSK, 2019) have set ambitious targets to reduce maternal mortality and improve maternal health services. Despite these efforts, Kapkoi Health Center continues to lag behind in terms of maternal service uptake. The study will align with these national objectives and seek to contribute meaningfully to the achievement of the 90% utilization target in maternal healthcare services for all counties. The findings will inform evidence-based policies and interventions that can serve as a model for other high-burdened facilities facing similar challenges.

1.7 Significance

First, this study has the potential to improve maternal health outcomes by identifying and addressing the barriers that hinder women from accessing crucial healthcare services. High maternal mortality rates are a pressing concern, and this study's findings can pave the way for targeted interventions and policies that will contribute to saving lives and enhancing the overall quality of life for women in their childbearing years. The study also provides healthcare workers with additional knowledge and information on how best they should improve maternal clients attending antenatal visits in their facilities to minimize the low turnout during delivery and postnatal services.

Lastly, the study's significance extends to the realm of policy and program development. The insights gained from this research can serve as a valuable resource for policymakers, healthcare administrators, and public health experts. By understanding the specific socio-demographic determinants that influence maternal healthcare utilization, these stakeholders can make informed decisions and create tailored interventions to better meet the needs of women in the region. This research provides a foundation for evidence-based decision-making, which can lead to more effective and efficient solutions to a critical public health issue.

1.8 Limitation of the Study

Despite the contribution of the study to the literature on utilization of maternal healthcare services, the study had one limitation. The study was affected by Covid-19 outbreak. The researchers and participants were at risk of exposure. All those who participated in this research were provided with facemasks and sanitizers during the entire data collection period.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This section entails general oversight on utilization maternal burden, overview of maternal Care and its role and value in birth preparedness, overview of strategies of reducing maternal mortality, gaps in the current maternal health system and barriers to maternal health care at client, health care provider and facility level. From the review of various literature, theoretical and conceptual frameworks of this study were developed.

2.2 Maternal Mortality

Estimates of Maternal Mortality Ratio (MMR) from the Maternal Mortality Working Group showed that there were 536,000 maternal fatalities in 2018, or a rate of 402 deaths per 100,000 live births, with 50% of such deaths recorded in Africa (900/100,000 live births) and 46% in Asia (Hill et al., 2020). According to a recent report by the Maternal Mortality Network, South Asia and sub-Saharan Africa (SSA) has the highest MMR rates by far. The Maternal Mortality Network emphasized on how challenging it was to acquire precise estimates of maternal mortality and morbidity, partly due to the form and results of the measure in issue (Annamama, 2016).

According to a study by Annamama on maternal and child mortality in Africa, 3000 untrained midwives performed over 55% of deliveries and were utterly to blame for the high death rate (Annamama, 2016). Even in nations with highly developed health information systems, it is challenging to collect valid measurements when health information systems are poor (e.g., India and China). This study aims to provide readers with an overview of current research on birth attendants' impact on maternal health treatments and outcomes. It will summarize the critical findings of a significant study carried out in developing nations, paying particular attention to disadvantaged women and their families who reside in distant rural areas and are inaccessible to adequate referral health facilities (Chakraborty, 2017).

2.3 Theoretical Literature Review

Caregiving for pregnant women, young mothers, and infants have been traditionally perceived as a private matter, the purview of midwives and mothers. Maternal care began in Europe in the late 19th century when claims that unhealthy children compromised their

aspirations for culture and the military began to view healthy mothers and children as economic, political, and military resources (Graham, W.J., Bell, J.S. & Bullough, 2016). Birth assistance was conducted by shepherds who had prior expertise with the delivery of sheep; caring for pregnant women and giving birth is similar to caring for an egg. When archaeologists utilized evidence of a woman crouching in delivery assisted by some other woman from behind, they showed that safe practices had been documented in Egypt as early as 5000 BC (Filippi V., 2018).

In his first book on midwifery, published in 2019, William Wolfe noted that women often waited to seek medical attention until their labor that was hopelessly blocked, since in the event of pelvic deformity, this may result in both the mother and the child's death (Wolfe, 2019). There is evidence from most research that maternal health care services use is related to variables including income, education, ethnicity, religion, culture, age, and degree of decision-making. Customers seek health for two main reasons: as a consumer good and as a commodity. Healthcare needs are derived from health demand, while health demand is derived from utility demand. Health enters the client's utility function as a consumer good, but as an investment, it establishes the context of time and necessity (Graham, W.J., Bell, J.S. & Bullough, 2016).

A regular time of labor and lack of transportation, the expense of treatment, spouses' preferences, attitudes toward health care personnel, and women's prior experience and habits are some of the elements that affect how often people use health facilities (Mwabu, 2017). Research on travel costs, medications, bad roads, a lack of services at night, verbal abuse, a bad attitude among certain healthcare professionals, and long hours were conducted (Ochako, R.; Fotso, J. C.; Ikamari, L.; Khasakhala, 2019).

2.4 Underlying Determinants of Maternal Health

Health is more than merely a medical concern driven by biological elements and treatments. The environment we live in, the activities we engage in, the people we connect with, and the kind of relationships we have all impact our health (Abbas, R. K., 2015). Thus, health results from how our biology interacts with the physical, socioeconomic, cultural, and political environments in which we live; in other words, it is socially driven. As a result, socioeconomic class inequalities and biological variances contribute to differences in people's health status. Socioeconomic class, color, ethnicity,

gender and other social determinants including risk and susceptibility, health-seeking behavior, access to healthcare, and long-term health and social implications (Nicole et al, 2018). Social determinants of health significantly influence women's capacity to attain maternal and reproductive health. The decision of a woman to seek medical attention may be affected by her partner or other family members, social norms, her education, her social standing, the distance between her home and the clinic. The severity of her illness, her prior experiences with the medical system and how she expects to be treated by medical professionals, her level of household decision-making power, and her access to credit, land, and income (Chepkoech et al, 2018). It is crucial to consider how social, cultural, economic, and health system issues affect maternal health and maternal mortality. The utilization of maternal healthcare services among women of reproductive age is a multifaceted issue influenced by various determinants. This theoretical literature review focuses on three specific objectives: socio-demographic determinants, client determinants, and health provider determinants. These objectives aim to fully understand the determinants that shape maternal healthcare utilization.

2.4.1 Socio-Demographic Determinants

The sociodemographic makeup of women, culture and the accessibility of services may influence how often women in underdeveloped nations utilize maternal health care (Manishimwe C, 2017). These determinants play a crucial role in influencing maternal healthcare utilization. Income, as a key socio-demographic determinant, affects a woman's ability to access and afford healthcare services. Lower income levels often result in reduced utilization due to financial barriers (Shiffman, J. J. & Sultana, 2019). Similarly, educational attainment is vital, as women with higher education tend to seek maternal healthcare more often, demonstrating the importance of health literacy. The majority of studies published by researchers focused on quantitative research to determine the relationship between sociodemographic characteristics and the use of antenatal care services (Cleland, 2019), while some qualitative research was discovered to be primarily focused on women's perceptions and barriers to improving maternal health care services (Chakraborty, 2017).

A woman's level of education plays in shaping her healthcare-seeking behaviour. Research conducted by Harley (2019) establishes that a woman's educational attainment serves as a robust predictor of the frequency of maternity visits, consequently influencing

the likelihood of achieving the requisite number of antenatal care (ANC) and postnatal care (PNC) visits (S.J Harley, 2019). Furthermore, findings by Matthews et al. (2018) accentuate that women with higher educational backgrounds exhibit a propensity to initiate their maternity visits early, underscoring the link between education and timely healthcare access (Mathew et al., 2018). However, it is imperative to acknowledge regional variations, as a study in West Africa conducted by Rowland identifies no significant correlation between education and the utilization of ANC and PNC services (Rowland K.L, 2020) .

Exploring into the regional context of Sagamu, South-Western Nigeria, Iyaniwura and Yusuf's study (2019), encompassing 392 women who had experienced at least one full-term pregnancy, illuminates the profound impact of socioeconomic factors on maternity care patterns (Ajayi, O. & Jibowo, 2018). The research underscores that elevated levels of wealth and educational attainment wield a favourable influence on the utilization of essential maternity services (Ajayi, O. & Jibowo, 2018). An in-depth cross-sectional community-based study conducted in Munesa Woreda, Arsi Zone, Oromia Region, Southeast Ethiopia, paints a distinct picture. Among 1055 mothers who had given birth within 12 months prior to the study, only 18.3 percent experienced childbirth at healthcare facilities, highlighting the prevalence of home births (Amano et al., 2016). Intriguingly, this study reveals that the educational levels of both husbands and mothers, particularly those with secondary and higher education, significantly impact the provision of healthcare in institutions (Amano et al., 2016).

Furthermore, a comprehensive cross-sectional community household survey conducted in the Luwero area of Uganda examines prenatal and postnatal attendance rates among 769 women. The findings divulge a robust prenatal and postnatal attendance rate of 94.4 percent (Kiwuwa et al., 2018). Notably, women with post-primary education paradoxically exhibit a lower likelihood of attending four or more sessions, shedding light on the nuanced influence of education on healthcare-seeking behavior (Kiwuwa et al., 2018).

The significance of women's education extends beyond quantitative metrics and is pivotal in understanding the quality and impact of maternity care dispensed by ANC clinics, as revealed in qualitative data analysis by Mumtaz and Salway (2015). Furthermore, the role

of the husband's educational level in shaping the utilization of ANC and PNC services comes to the forefront in various studies (Muntaz N.Z & Salway G.F, 2015). While research conducted in Andhra Pradesh underscores the statistical significance of the husband's education level (Navaneetham & Dharmalingam, 2020), it is essential to note contrasting results from a Karnataka study, demonstrating the multifaceted nature of this relationship. Interestingly, the Philippines presents a unique perspective where husband education emerges as a more potent predictor compared to wife education (Filippi V., 2018).

The determinants influencing maternal healthcare utilization encompasses the education of mothers and its influence on healthcare worker-family interactions. A community situational analysis conducted in South Africa emphasizes that maternal education significantly shapes the dynamics of these interactions, thereby influencing healthcare access (Tlebere et al., 2017). Consequently, the study underscores the importance of evaluating and addressing the myriad obstacles preventing communities and families from actively participating in and utilizing maternity care (Tlebere et al., 2017). These collective findings underscore the multifaceted interplay of educational determinants in maternal healthcare utilization, urging the development of tailored interventions to enhance maternal and child health outcomes.

Researchers discovered that maternal visits were substantially related to the sequence and spacing of births. Higher order births were attributed to the delayed or insufficient usage of ANC (Navaneetham & Dharmalingam, 2020). Women from nuclear families were much less likely to need maternity services than women from extended/joint families, proving that family size and structure were significant variables in this area (Matsumura & Gubhaju, 2019). Frequent maternity visits were made for births that occurred more than three years after the previous one than those that occurred within two years (Magadi et al., 2016). Furthermore, women whose pregnancies were "unwanted" had later beginnings and fewer visits, making the desire to get pregnant a statistically significant factor in determining how often they used maternity services, including ANC, PNC, and delivery (Magadi et al., 2016).

The age of women upon marriage and pregnancy is positively correlated with the use of maternity care. The age at marriage was positively associated with access to or

attendance at maternity care in rural north India (Pallikwadha S., 2016). Maternal healthcare service was not significantly correlated with age at marriage (Potter & Obbermeyer., 2017). Compared to teens and older women, most women in their thirties attend maternity care visits earlier and more often (Mathew et al., 2018). Younger women preferred frequent clinic visits to be reassured that the baby was developing typically and to understand its location. Still, older women with no difficulties were unconcerned with regular visits (Mathole et al., 2019). However, several research indicated that the use of maternal care was not significantly predicted by the age of the women (Kabir et al., 2018).

2.4.2 Client Determinants

Client determinants encompass a wide range of personal and cultural factors that influence maternal healthcare utilization. Cultural norms, beliefs, and traditions can significantly affect a woman's decision to seek healthcare during pregnancy and childbirth. Perceptions of the value and safety of traditional practices versus modern healthcare services can be pivotal. The use of maternal services was attributed to determinants such as proximity to the hospital, higher levels of formal education, higher travel expenses (affordability) to the closest clinic, and being single. The mother's or mother-in-laboring law's experiences heavily affected the decision to deliver at home (Peltzer et al., 2016).

Schiller and Levin (2016) highlighted the influence of religious factors on healthcare utilization, noting a consistent association between religion and improved health outcomes (Gymah et al., 2017). Religion, as a significant social institution, plays a pivotal role in shaping individual and community health behaviours by impacting lifestyles, worldviews, and motivations (Benjamin et al., 2018). However, it's essential to recognize that different religious groups may hold varying perspectives on healthcare and health-related issues. For instance, among ultra-conservative Apostolic groups in Zimbabwe, faith healing and strict adherence to church beliefs often hinder modern healthcare seeking (Maguranyanga, 2019). Jehovah's Witnesses, another Christian denomination, discourage blood transfusions based on specific Biblical interpretations but are open to medical alternatives (Loma Linda University, 2018). Contemporary Pentecostal Christian groups generally have more liberal health-related teachings but often emphasize seeking spiritual counsel and faith healing before turning to medical

treatments (Oyedepo, 2017). Similar beliefs are held by some Muslim communities, where the causes of health problems may be attributed to a combination of medical and spiritual factors (Curlin S., 2018). The intertwining of spirituality and healthcare decisions significantly influences when individuals seek medical help and when they choose formal medicine. This aligns with the health beliefs of adherents of traditional religions who often resort to traditional remedies before considering modern healthcare services (Oyedepo, 2017).

Despite the pervasive role of supernatural beliefs in explaining individual health situations, it's surprising that religion has not been extensively harnessed to promote maternal healthcare utilization in Nigeria. The National Population Policy for Sustainable Development encourages collaboration with religious organizations but primarily urges them to promote reproductive health services in accordance with their beliefs rather than devising religion-friendly programs to address the country's maternal health challenges (NPoC, 2016).

This study's theoretical framework is based on functionalism views religion from the perspective views on maternal, societal needs and categorizes human society into "sacred" and "profane" worlds, with religion being an integral part of the sacred, influencing human actions and behaviors. Religion contributes to social cooperation, order, and control, essential conditions for societal progress (Durkheim R., 2017). Modifications to this perspective, such as Malinowski's and Parsons' contributions on maternal healthcare, further emphasize religion's positive contributions to society by providing general rules for human behavior and criteria for evaluating human conduct (Parson, 2018). However, it's essential to acknowledge that the functionalist perspective has limitations, particularly in accounting for the abnormal operations of religion, such as conflicts and insurgencies in various parts of the world.

Contrary to the functionalist perspective, Marxists assert that religion serves the interests of the ruling class by fostering class ideologies and pacifying the oppressed. Marx and Lenin described religious beliefs as tools for promoting class ideology and maintaining the status quo (Haralambo et al., 2017). While these perspectives provide insights into the role of religion in society, the Nigerian context demonstrates that religion, both Christianity and Islam, plays a significant role in supporting positive maternal health

outcomes. Faith-based health institutions are widespread in the country, serving urban and rural areas. Additionally, religious organizations have actively aligned themselves with public health initiatives during health crises, such as the Ebola pandemic, by implementing measures to prevent the spread of contagious diseases. However, despite these contributions to public health, there is a significant gap in harnessing the potential of religion to enhance maternal healthcare utilization in Nigeria (NPoC, 2016).

2.4.3 Health Provider Determinants

The role of health providers in maternal healthcare utilization cannot be underestimated. The attitude, competence, and availability of healthcare providers significantly influence a woman's decision to seek maternal care. A respectful and supportive healthcare environment encourages utilization, while a lack of trust or negative experiences can deter women from accessing services.

The location and infrastructure of healthcare facilities, along with the quality of care provided, are critical health provider determinants (Hill et al., 2020). Proximity to healthcare facilities, especially in rural areas, affects access. Additionally, healthcare staff shortages and lack of necessary equipment can hinder utilization (Hill et al., 2020). Services provided by qualified workers are generally seen as a critical approach to lowering maternal and infant mortality. The rates of skilled attendance at delivery are normally used as an indicator for monitoring the Millennium Development Goal of enhancing maternal health services. In certain countries, little progress has been achieved regarding raising competent attendance rates during deliveries. According to the 2014 Kenya Demography Health Survey, the number of experienced midwives present during deliveries has decreased (KDHS, 2014).

Given the difficulties confronting health care resources in most countries, the provision of health facilities offers women the chance to obtain support from qualified staff. Since many fatalities occur during and during labor, medical institutions ensure that the birth process runs smoothly and with the appropriate care. As a result, expert birth attendance is required (Bun et al., 2018). To encourage facility deliveries, the Kenyan government launched a program in 2013 that provided free maternity care in public health facilities (Bournamnais, 2018). Given that the government instituted free maternity care in 2013, the 2014 KDHS reported that 61 percent of women who had recently given birth

delivered in health facilities, which is relatively low compared to the anticipated number of births (KDHS, 2014).

All women should have access to affordable, primary maternity care that includes high-quality prenatal care, clean, safe deliveries, and postpartum care for both mothers and babies. It is essential to get high-quality treatment from qualified staff to avoid complications. Eligible staff must access necessary medications, equipment, and emergency care, which are only available in health facilities (UNICEF, 2019).

There are substantial differences in service usefulness across the areas. In the world, trained medical professionals perform 68 percent of deliveries, which is a little low given that most nations have made significant investments in the health sector. Globally, trained professionals, compared to slightly over half of births in rural regions perform 87 percent of deliveries in metropolitan areas. There are notable discrepancies in certain African nations, where women in urban areas are twice as likely compared to women in rural regions to deliver their babies with the help of experienced professionals (UNICEF, 2019).

Compared to 78 percent in the Western Region and 70 percent in other Kenyan metropolitan regions, only 48 percent of women in Western Kenya give birth in health facilities that meet at least the basic requirements (Chepkoech, 2018). Research conducted in the Nyanza province in 2007 showed that awareness of maternal health issues and complications did not lead to increased hospital deliveries (MOH, 2016).

More than half of the incidents of maternal mortality included poor medical treatment, with the majority occurring at the primary health care level (Penn-Kekana, 2017). The main issue was that 40% of healthcare professionals failed follow the recommended procedures, particularly in level 2 hospitals (44%) (Penn-Kekana, 2017). Additionally, there were issues with the capacity of healthcare professionals to conduct an initial examination (24%) and identify problems (34%). Once again, this essentially happened at the primary healthcare level (49% and 50%, respectively) (Penn-Kekana, 2017). In 11 percent of the instances (mainly at the primary level), the incorrect diagnosis was made, and 22 percent of the cases included inadequate patient monitoring and failure to react to anomalies in the monitoring (mainly at the secondary level of care). Health care

personnel's judgments to send patients (9% in 1998 rising to 17% in 1999–2011) and addressing 35 issues related to maternal health at the incorrect level of care showed a considerable worsening (9% in 1998 to 17 percent in 1999-2011). These issues may have arisen due to inadequate transportation, difficulties understanding the seriousness of the ailment, or the absence of a designated referral hospital that will take the patient (MOH, 2016).

Government and international organizations have identified measures to reduce maternal mortality as one area supporting women's maternal health. To promote health and reduce maternal mortality, a lot of strategies need to be considered. Concerns have been raised about women's rights and taking center stage to encourage safer pregnancy; this was thought to be one of the result (OECD, 2018). Consider maternal mortality while promoting maternal and reproductive health rather than population control and fertility.

Some international organizations have approved making maternal health one of the MDGs, intending to reduce maternal death by 75% between 1995 and 2017. This is in favour of promoting maternal health as one of the top issues that need be considered and handled (UNICEF, 2019). The overwhelming evidence of the significant burden of maternal fatalities led to this. The International Conference on Population Development urged the government, funders, and other health stakeholders to assist in lowering the number of maternal fatalities by 2020 (UNICEF, 2019).

2.5 Barriers to providing optimum maternal care

From 1991 to 2011, administrative issues caused 42 percent more maternal deaths than in 1998, indicating a steady decline in maternal health services (UNICEF, 2017). Despite national maternity guidelines, the development of plans at the provincial level has been uneven. Only 62 percent of the 141 public health facilities that underwent a thorough evaluation in 2002 had access to maternity care guidelines (Smith & Houston., 2016). It is a concern that the lack of adequately trained staff accounted for 22 percent of the administrative issues, given that one of the main strategies for reducing maternal mortality is the promotion of skilled attendants at birth. Was it due to a lack of training, or were there other factors, as asked in the 2nd Saving Mothers Report, that health workers did not follow the protocols? (UDHS, 2016). Several programs are in place to enhance the caliber of midwifery skills through in-service learning. The four-year

introductory course that now makes up nursing training includes a year of midwifery, whose caliber is well-known internationally. Still, the Perinatal Education Programme (PEP) and the Decentralized Education Programme for Advanced Midwives are the most significant (DEPAM).

The ongoing priority is increasing staff capacity, but issues with brain drain, demotivation, insufficient staffing, frequent ward rotation, and unfavorable working conditions undoubtedly affect how well healthcare workers perform. Additionally, to address the skills gap in rural areas, the Department of Health recently made one-year community service a requirement for the registration of all doctors (Penn-Kekana, 2017). However, the issue of a lack of personnel was pointed out as a preventable factor. This might result from the staff considering insufficient staffing to be expected or the assessor not having enough information at their disposal to classify it as an avoidable factor (MOH, 2016). Transportation issues between institutions caused thirteen percent of maternal fatalities, this undoubtedly contributed to referral delays (17%) or patient management at an inappropriate institution (17%), with the latter two indicating issues with healthcare providers. Provinces experienced different transportation issues, with Gauteng and the Western Cape having the fewest issues and Mpumalanga and the Eastern Cape has the most (Tlebere et al., 2017). According to data from the 2010 National Primary Health Care Survey, 23% of clinics lack access to an ambulance (Penn-Kekana, 2017). 11 percent of maternal deaths were caused by a lack of medical facilities, including intensive care units, blood transfusion services, drugs, and laboratory facilities (WHO, 2017).

2.6 Improving Maternal Health through Sustainable Development Goal

The third Millennium Development Goal is to safeguard everyone's health and wellbeing at all ages and in all environments, primarily humanitarian and vulnerable ones. The Goal encompasses all main health goals, including universal health coverage, access to quality, affordable medicines and vaccinations for everyone, sexual and reproductive health, maternity and newborn health, child and adolescent health, communicable, non-communicable, and environmental illnesses. Additionally, it asks for more health-related research and development, expanded and diversified health finance, improved health workforce, and better health risk reduction and management capability across all nations (UDHS, 2016). The attainment of these objectives is mainly dependent on universal

health coverage (UHC). As the health emphasis shifts to deal with the dual burden of long-held priority in contagious illnesses, the unfinished MDG agenda, and emergent challenges, including NCDs and injuries, investment in all of the health-related goals in the 2030 agenda is a must.

In 2015, the worldwide maternal mortality ratio (MMR) was 216 per 100,000 live births, meaning that around 303,000 women and girls lost their lives due to difficulties with pregnancy or delivery (WHO, 2017). Increasing the yearly decrease by at least 7.3 percent, which is more than quadruple that achieved between 1990 and 2015. Because the relevant health measures are available and well understood, most maternal fatalities may be avoided (UNICEF, 2017). To prevent unintended pregnancies, it is crucial to improve pregnant women's and girls' access to high-quality care before, during, and after delivery. One of the most significant barriers to improved health for women and girls during pregnancy and delivery is a lack of trained care, which has been due to worldwide scarcity of certified health professionals, notably midwives. Professionally trained midwives and other people with midwifery abilities have been essential to success in all nations that have reduced maternal mortality (UNFPA, 2017).

Only 76% of women in developing countries get expert care during delivery (WHO, 2017). This implies that millions of births take place without the help of a midwife, doctors, or nurses with training. The incapacity or delay in obtaining treatment continues to be affected by the uneven position of women and girls. In addition to health system interventions, societal impediments such as lack of information, decision-making, and financial power, often caused by discrimination in law and practice, violence against women and girls, and gender stereotypes, must be addressed (Piroska, 2017).

Campbell et al. (2017) presented critical lessons from the pooled results in a comprehensive evaluation of tactics implemented to decrease maternal mortality (Campbell et al., 2017). No one intervention (e.g., pharmacological treatments, health education) alone will lower the incidence of maternal death. Strategies will be successful if the component packages are efficient with high target group coverage. Prioritizing the intrapartum period is a requirement by the epidemiology of maternal mortality (Liu et al., 2018). This finding is supported by the literature from various studies, where researchers promote health center intrapartum care as a beneficial tactic. There will be more chances

to prevent mother mortality during prenatal care, postpartum care, family planning, and safe abortion (Meija & Rezeberga, 2017). This supports the necessity for a continuum of care strategy that considers the full reproductive life cycle rather than just pregnancy. The main finding of this research is that a full range of services, including ANC, that are basic for birth preparation through delivery interventions and post-partum care. The most crucial time for prenatal care is during pregnancy, when difficulties might arise and can be treated by trained medical professionals (WHO, 2017).

In a review study, Koblinsky et al., (2017) commented on moving to scale with professional healthcare (Koblinsky & Marjorie, 2017). The researchers who referenced an examination of 40 nationally representative household surveys found considerable growth in doctor-assisted deliveries, with most births accounted for in the public sector that the rising trend of women using private facilities. Despite the promising rise in access to maternal health services, Koblinsky reminds us that one in four women remain without obstetric care. The study suggested that the biggest hurdle to scaling up maternal health care is the paucity of competent health professionals, insufficient health system infrastructure, inferior quality of treatment, and women's unwillingness to utilize maternal health services. Based on a meta-analysis of 40 household surveys covering 45 percent of the developing nation populations, they extrapolate existing behaviours and outcomes for reproductive and maternal health (WHO, 2017). Some significant results include; Progress in maternal healthcare is hampered by stagnation in rural regions, primarily in sub-Saharan Africa, key contributing factors include low quality of healthcare and lack of access by impoverished rural women to services. Sustained healthcare during and after birth depends on training, deployment and retention of health personnel. Teams of midwives and midwife helpers working in facilities will enhance coverage by up to 40 percent by 2030 (Moyer, 2017).

Political commitment is necessary to address the most pressing safety gaps for mothers. The authors of a review on human resources and access to maternal healthcare call for a substantial rethinking of the problem of human resources and the division of labor among the many cadres of health and community workers engaged in supporting maternity healthcare (Moyer, 2017). The conclusion transferred attention from the immediate assumption that lives are saved by direct involvement to that of the social and community, and even farther to the political arena, including; High political commitment

to improve maternal health, as shown in Sri Lanka, Egypt, and Malaysia, nations that have been effective in decreasing the MMR. Contributions to social and economic progress, particularly those towards gender equality. Strengthening health systems with a focus on establishing referral networks and access that do not have significant opportunity costs on women's access.

A crucial set of evidence-based services includes family planning, risk-free abortion, and thorough obstetric care. Investing in human resources to the fullest, including hiring a team of trained midwives and birth attendants who can assist women before, during, and after delivery. No one measure alone contributes to a decrease in the high maternal death rates; all of the above factors must be present. Nonetheless, it is noteworthy that SDG 3 has placed a greater focus on the availability of qualified birth attendants than on many other equally important factors. This may be ascribed to credible data from nations that have seen substantial reductions in maternal mortality. Some of the critical elements that have helped these nations achieve such noteworthy accomplishments include the availability of experienced birth attendants and their effective expansion of coverage in China, Jamaica, and Egypt, as well as the presence of births in facilities in each of these nations (Koblinsky & Marjorie, 2017). The lengthy history of professional midwifery in Sri Lanka allowed for a high percentage of competent providers at the village level and the concurrent availability of operational emergency obstetric facilities (UNFPA, 2017).

2.7 Gaps in current maternal health research

In the area of mother and newborn health, most evidence are based on retrospective survey methods, quasi-experimental methods using randomized control trials, and future qualitative research in conjunction with data from healthcare facilities. Due to ethical concerns, randomized control trials are normally not used to evaluate TBA competence. Comparing data from intervention and control areas to assess the results for maternal health (Fantatum et al., 2019). The same is valid for competence assessment studies, which use knowledge and skill assessments based on anatomical models in simulated home delivery situations to evaluate birth attendants, as opposed to direct clinical observation.

Few longitudinal research and intervention studies have examined home births and pregnancy and delivery outcomes. Although the body of data on facility-based products

is expanding, little is known about community-based interventions' contribution to maternal health and their long-term effects. (Smith & Houston., 2016) called for extensive community research and drew attention to the problem of how community-based interventions are overlooked and underestimated. Numerous prospective community-based studies have been conducted on utilizing quasi-experimental methods over 12 to 24 months, particularly in Bangladesh and Indonesia (Smith & Houston., 2016).

Although some NGOs have utilized them extensively as part of community health-based programs, such as CARE in Bangladesh, there are few reliable analyses of the impact of birth preparation packages that have been put in place. The literature raised concerns that these birth preparation strategies would not have the expected outcome since there are insufficient referral services for emergency obstetric care (Sandall, 2017). Examples of the growth of SBAs in Indonesia have been mentioned; however, these attempts were thwarted by the simultaneous decline in demand for emergency obstetric care owing to high out-of-pocket expenses and a lack of cultural acceptance. Therefore, while assessing the impacts of a single intervention, such as the effects of SBA treatments on maternal health outcomes, studies must consider the correlation between all levels of care. Strong arguments are made against the one component, one cadre strategy, and in favor of a continuum of care approach that integrates both.

2.8 Relationship between determinants of maternal service utilization

The determinants which may affect maternal utilization were classified into five groups as follows:

2.8.1 Socio-demographic determinants

The framework for this study focuses on socio-demographic variables, including age, education, occupation, marital status, and parity, to analyse their influence on the subject of investigation. These variables will serve as key determinants, allowing the study to explore how each factor affects the research context. By examining the interplay of these socio-demographic variables, the study aim aim to gain a comprehensive understanding of their collective impact and individual contributions to the research objectives.

2.8.2 Client related determinants

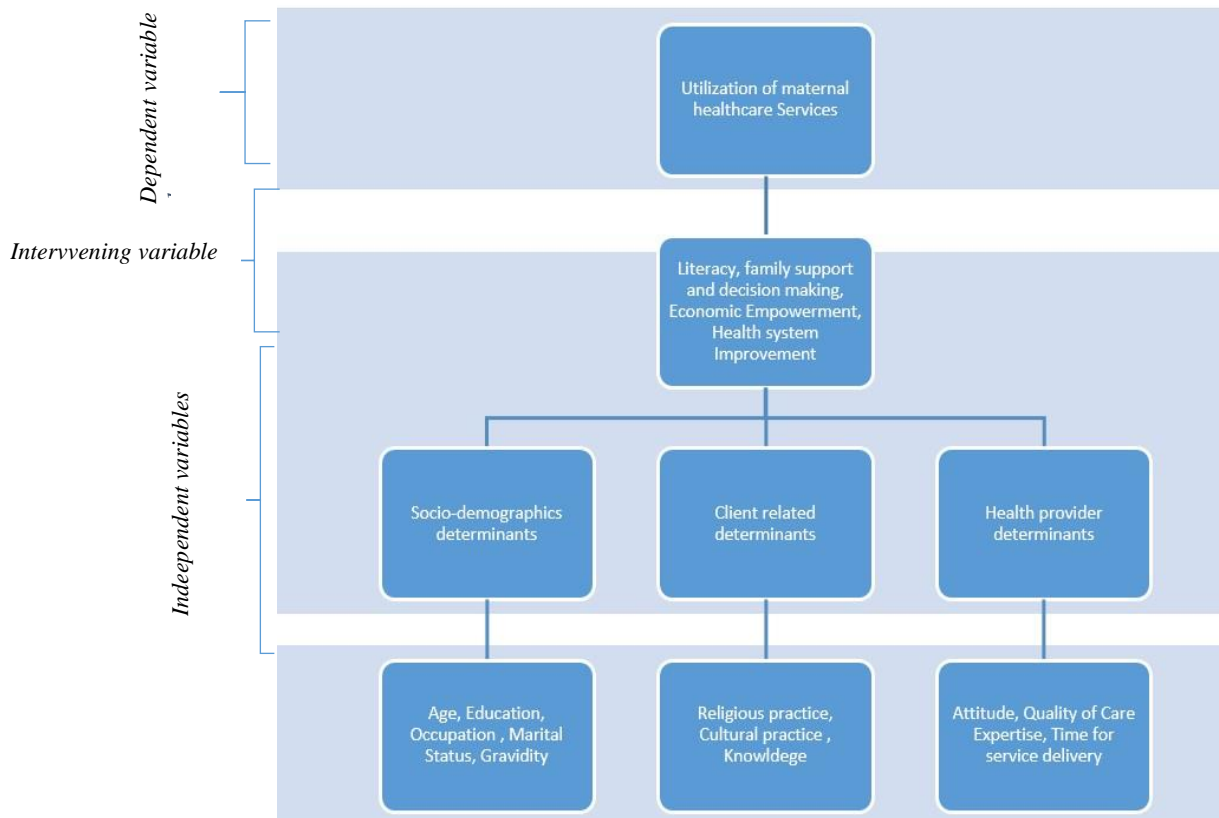
The framework of this study centers on client factors, specifically cultural beliefs, knowledge, and religious affiliations. These client determinants are essential in shaping and understanding the subject of interest. By examining how cultural beliefs, levels of knowledge, and religious backgrounds influence the research context, the study aim to gain valuable insights into their impact on the research objectives. Analyzing the interplay of these client factors will provide a comprehensive view of their individual and collective contributions to the study.

2.8.3 Provider-Related determinants

The conceptual framework of this study also focuses on health provider determinants, encompassing the attitude, quality of care, time taken for service delivery and expertise of healthcare providers. These components are fundamental in shaping the research context, as they play a pivotal role in influencing the subject under investigation. By examining the attitudes, quality of care, and expertise of healthcare providers, the study aims to gain a comprehensive understanding of their combined effects and individual contributions to the research objectives. Analyzing these health provider factors will provide valuable insights into their significance within the study's scope.

Figure 2.1: Conceptual Framework: Determinants of utilization of Maternal Services

This study's conceptual framework was changed and adapted from (WHO, 2016). The Framework outlines the elements that affect maternal service usage, including client, facility, service provider, care provided, and client sociodemographic characteristics.



Source: Adapted and modified from WHO maternal and newborn framework, 2016

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This section outlines the procedure used in this research study. The section focuses on the study setting, research design, target population, sample size and sampling procedures, data collection techniques and lastly data analysis used.

3.2 Study Setting

The study was conducted in Kapkoi Health Center. The facility is located in Kapkoi Sub Location, Kwanza Sub County, Trans-Nzoia County. The study area is positioned the 37th of the 47 counties regarding the size. The study area borders the Republic of Uganda towards the West, Bungoma and Kakamega counties towards the South, West Pokot County towards East, Elgeyo Marakwet and Uasin Gishu counties towards South East. The county is situated in North Rift of the previously Rift Valley Province. The study area is home to Mt. Elgon the second highest Mountain in Kenya.

Kapkoi Health Center lies roughly between scope $00^{\circ} 52'$ and $10^{\circ} 18'$ north of equator and longitudes $340^{\circ} 38'$ and $350^{\circ} 23'$ east of the incomparable Meridian. The facility serves the community coverage of an area approximately 15.6 square kilometres. The facility is among the five in the region, others being Kolongolo Health Center, Muungano Dispensary, Keiyo Dispensary and Biketi Dispensary. The facility was purposively chosen because it's the main primary healthcare for in the wider catchment area, represent study area. The the facility has also specific challenges like low utilization of all maternal indicators, high maternal mortality and low skilled birth attendance. On an average, the region has an elevation of 1800 meters above sea level. The altitude varies from 4300 meters above sea level in Mt. Elgon and continuously drops to 1400 meters towards the north.

The health facility serves an estimated population of 9,230 (KNBS, 2019), out of which annual average of 786 women of reproductive age are expected to be receiving maternal services in the region (KHIS, 2018). Administratively, the region is sub-divided into five community units known as “mlango”. Each unit has at least two Community Health Volunteers attached. The main maternal indicators for the region include family planning, fertility rate, antenatal visits and prenatal visits.

Figure 3.1: Map of Kapkoi Sub-Location, Kwanza Sub County



Table 3.1 Main Indicators of Kapkoi in 2019

Indicators	Value
Area (km ²)	15.6
Population (Thousands)	9230
Pop. Growth rate (%)	5.5
Fertility per woman	6.1
Life expectancy in years	70
Literacy rate among adults (%)	40
IMR 1,000 live births	56.0
Under 5 MR/1000 live births	61
Number of Healthcare work	9
Number of CHVs	24

Source: Adopted and Modified from KNBS, 2019

3.3 Study Design

Cross-sectional study design and sequential mixed method approach was applied to help in giving best measurement for study population as well as identifying best relationship between variables.. Data collection took a period of two months. The questions were intentionally developed in a non-directive manner to facilitate the cross-verification of responses gathered from the study participants.

3.4 Study Population

The study population comprises women of reproductive age, ranging from 15 to 49 years, both antenatal and postnatal care who actively sought healthcare services at Kapkoi Health Center. This population was drawn from a total population of 4,716 women during the study period.

3.4.1 Inclusion and Exclusion Criteria

The study included both antenatal and postnatal women from Kapkoi Sub Location, who made their visits to the facility during the study period and consented to take part in the study. The study also considered all women of reproductive age and are visiting the facility at the time of the study. Minors who were under age (15-17 years), and were maternal clients were considered mature minors and were allowed to participate in the study.

The study excluded antenatal and postnatal women who were eligible but did not consent to take part in the study. The study also did not minors aged 15-17 years accompanied to the facility by their parent. Non-residents antenatal and postnatal care women were also not included in the study. Lastly, women who attended antenatal and postnatal care services at the facility during the study period but were mentally disabled were also not considered to participate in the study.

3.5 Sample Size Determination

The study used Slovin Formula (Slovin E., 1960) to determine the study sample size. The method is best used in a large population and where it is not possible to study whole population but the characteristics of the study population is known. This method is also suitable because it gives accurate sample size of large population and this help in avoiding under sampling and oversampling. Simple random sampling technique is also

applied. The formula allows researchers to sample the population within specific degree of accuracy (Stephanie L., 2016).

$$n = \frac{N}{1 + Ne^2}$$

Whereby; n - Is the sample size drawn from a population

N - This is the population size

e – This is the level or precision, the margin of error that is allowed in the study, in this case

5%

The total number of women who received maternal services at Kapkoi Health Center between May 2019 and May 2020 were 4716 (MoH, 2019). This shows an average of 393 maternal mothers visiting per month. Since data collection took a period of 2 months, therefore the estimated study population was; $4716/12 * 2 = 786$

N is less than 10,000(786)

Therefore, the sample size arrived at was

$$\begin{aligned} n &= \frac{786}{1 + 786 * 0.05^2} \\ &= \frac{786}{1 + 1.965} \\ &= 786/2.965 = 266 \end{aligned}$$

Therefore, sample size was 266 participants

By use of sampling proportionate ratio 3:2 which meant that for for antenatal women to postnatal women participants as follows;

Antenatal $3/5 * 266 = 160$, Postnatal $2/5 * 266 = 106$.

The study therefore involved 266 respondents.

3.6 Sampling Procedure

The study participants were identified by systematic sampling technique through approaching all eligible maternal mothers seeking either antenatal or postnatal services at the health facility in MCH unit. The srecruitment of the study participants was done by the Research Assistant with assistance from two Community Health Volunteers attached to the facility.

Participants were drawn from all antenatal women and all postnatal women who visited the facility between the month of June 2020 and July 2020 and were taken through consenting steps to enable them take part in the study. Postnatal respondents were recruited by identifying the number of days, weeks and months since conception. 266 (160 ANCs and 106 PNCs) study participants were recruited to take part in the questionnaire. FGD participants were identified and recruited by the Community Health Volunteers upon completion of care services at the facility.

Table 3.2: Summary of study population, selection criterion, sampling procedure and data collection method.

Population	Selection Criterion	Sampling Procedure	No. of Participants	Data Collection Method
Antenatal women aged 15 – 49 years	Primary target for maternal service utilization in Kapkoi Health Center.	Simple random sampling	160	Structured Questionnaire
Postnatal women aged 15 – 49 years	Primary target for maternal service utilization in Kapkoi Health Center	Simple random sampling	106 8	Structured Questionnaire 1 FGDs

3.7 Study Instruments

The study used structured questionnaire and Focused Groups Discussion guide with the line of study objectives. The questions were organized in a logical sequence for easy flow to the participants. The questionnaire was divided into three sections namely demographic information, client’s factors, health care provider related factors. The study also used screening tool to identify participants eligible for the study. The study also used informed consent forms to ensure that participants fully understand the nature of a procedure, treatment, or study and voluntarily agree to participate.

3.7.1 Validity Test

Validity is defined as the degree to which variable represents what is intended (Patience A. Afulani & Raymond Aborigo, 2019). In this study, the content validity of data collection instrument was determined by getting cross-checks, completeness of data collection tools, expert opinion, critique and advice from my supervisors, external experts' opinions and other classmates at the university. The advice and critics provided were in correcting the tools to meets the study purpose and objectives.

3.7.2 Reliability Test

This is defined as the measure of degree to which research instruments yields consistent results. The study reliability assessed for consistency by using test-retest technique. This is a measure of reliability in which two variables of interests that are measured twice to yield consistent results. Cronbach Alpha was used to correlate between study variable, Socio demographic variables, client's variables and health care provider's variables. Reliability coefficient of ≥ 0.7 was considered and the result showed 'r' value of 0.897 for Socio-demographic, 0.92 for client factors and 0.978 for health care providers. The results for Cronbach's Alpha based on standardized items indicated that values based on all standardized items were greater than the coefficient 0.7. This indicate that there was consistency in the study instruments (Mugenda, 2014). Training of the research assistants was conducted to improve on reliability of the study instruments.

3.8 Data Collection Procedure

In the data collection process for this study, a systematic approach followed to ensure that information collected efficiently and ethically from the women seeking healthcare services at Kapkoi Health Center. Community Health Volunteers (CHV) played a key role in the initial engagement, introducing the women to a Research Assistant (RA) who was part of the study team. The RA then proceeded to explain the study's purpose and objectives. Women who expressed interest in participating were screened for eligibility using specific criteria. Once eligibility was confirmed, the RA obtained informed consent from the women, providing detailed information about the study and their rights as participants.

For quantitative interviews, the RA conducted one-on-one sessions with the women, guiding them through the research questions and facilitating their responses. Additionally,

for Focus Group Discussions (FGDs), women were scheduled for a date to participate on specific days. During these group sessions, the RA played a central role in leading the discussions and providing support when required, which included offering translation services if there language barriers.

Table 3.3: Summary of data collected per week.

Weeks	Number of Antenatal Respondents	Number of Postnatal Respondents
1 st	24	15
2 nd	26	17
3 rd	19	12
4 th	26	16
5 th	19	18
6 th	17	9
7 th	15	7
8 th	14	12
Total	160	106

For qualitative data, one of the research assistant led in introduction from the study team, then participants were requested to sign consent form, The FGDs were done in local dialect “Suk”, language that is best understood by all the participants, there was repetition of all the questions to make clear understanding during the discussion meeting. The two RAs swapped roles of both moderator and note taker. Notes were taken during the session to ensure standardization and uniformity.

3.9 Data Processing and Data Analysis

3.9.1 Data Processing

The study involved a thorough data processing procedure for both quantitative and qualitative data collected manually. For the quantitative component, the data collected from individual interviews were meticulously recorded on paper-based survey forms. The initial step included data cleaning, where the collected information were reviewed for completeness and accuracy. Any missing or inconsistent data were identified and

addressed. Subsequently, the data were coded to ensure uniformity and consistency in the responses.

Once the quantitative data were cleaned and coded, they were entered into a computerized database using statistical software for further analysis. The data entry process was double-checked for accuracy to minimize errors. After data entry, the quantitative data underwent validation, including range checks and logical consistency tests. For the qualitative component, the data processing steps were adapted to handle textual information. Transcriptions of the Focus Group Discussions (FGDs) and individual interviews were carefully prepared. The content of these transcripts was thoroughly reviewed and organized in a codebook for thematic analysis. Common themes and patterns in the qualitative responses were identified and categorized.

3.9.2 Data Analysis Method

After completion of data collection, responses were edited coded and entered using SPSS version 25.0. The study used descriptive test such as percentages and frequenciesto describe population characteristics in relation to socio-demographic variables. The results were presented in frequencies, tables and percentages. The study used Chi-square test (χ^2) to assess associations between various demographic characteristics of women of reproductive age (15-49 years) accessing maternal healthcare services. Cross-tabulation was used to show the nature of association between various study variables. P-value of less than 0.05 was considered to be statistically significant, while p-value greater that 0.05 was considered not statistically significant. For the qualitative study was done by use of thematic and context analysis.

3.9.3 Ethical Consideration

The study adhered to a stringent ethical procedure and obtained necessary approvals at multiple levels. Firstly, ethical clearance and approval for the research were obtained from Jaramogi Oginga Odinga University of Science and Technology (JOOUST) and University of East Africa,Baraton ethical review boards. These approvals ensured that the study adhered to the highest ethical standards throughout its execution. At the county level, the study received formal authorization from the relevant county authorities. This step was essential to ensure that the research is conducted in compliance with local regulations and guidelines.

Additionally, ethical considerations guided the interactions with the study participants. The principles of anonymity and confidentiality was strictly maintained throughout study period. To protect the identity of the participants, their personal information was anonymized and kept confidential. This guaranteed that individual responses could not be linked back to any specific participant.

Voluntary participation was another key ethical consideration. All women of reproductive age at Kapkoi Health Center were informed about the study, and participation was entirely voluntary. They were provided with detailed information about the research's purpose and objectives, and informed consent was obtained before any data collection took place. This ensured that participants had the autonomy to decide whether to be part of the study without any form of coercion.

Furthermore, due to the prevailing COVID-19 pandemic, stringent adherence to safety protocols and guidelines was essential. All data collection activities, whether quantitative or qualitative, was conducted in line with COVID-19 safety measures. This included the use of personal protective equipment (PPE) by the research assistants and maintaining physical distance during interviews. The safety and health of both the participants and the research team were of utmost importance.

CHAPTER FOUR

RESULTS

4.1 Introduction

This section presents findings as per the study objectives. The study sought to investigate the determinants of maternal healthcare utilization services among women of reproductive age seeking services at Kapkoi Health Center, in Trans Nzoia County. 266 clients were interviewed during their visit to the facility. Out of these, 160 antenatal clients and 106 postnatal clients participated and gave their responses which translates to 100 %. Socio-demographic, client, healthcare provider and facility determinants were considered.

4.2 Socio-Demographic Characteristics determinants

The socio-demographic factors of the respondents interviewed includes education level, ages, gravidity, marital status and their occupation. Most of the study respondents 47.0 %(125) had primary level of education slightly higher than secondary level 32.7 % (87). Fewer respondents had no formal education 10.1 %(29) whereas respondents with post-secondary education were 9.4 %(25).

More than half 53.4 %(142) of the respondents were between 20 – 35 years of age, while 15– 19 years were 32.3 %(86) while only 14.3 %(86) of the study respondents were aged between 36-49 years. Almost all respondents, higher number had gravidity >1, 79.1 %(209) while only 20.9 %(57) of the respondents were first time mothers visiting the clinic. On marital status of the respondents, 70.3 %(187) of the respondents were married, much higher compared to single women respondents 23.3 % (62), while respondents are who separated in their families were 3.8 %(10) higher compared to the widowed respondents 2.6 %(7).

Lastly, in regards to occupation, majority of the respondents were unemployed 64.3 % (171) of the respondents, higher compared to those who are self-employed 24.4 % (65). Additionally, only 2.6 %(7) of the respondents were employed while 8.6 %(23) of the total respondents were students.

Table 4.1: Socio-demographic aspects of the study respondents (n=266)

Variables	Attributes	Frequencies	Percentages %
Education level	No formal	29	10.9
	Primary	125	47
	Secondary	87	32.7
	Post-Secondary	25	9.4
	Total	266	100
Age	11 - 19 years	86	32.3
	20 - 35 years	142	53.4
	36 - 49 years	38	14.3
	Total	266	100
Gravidity	0	57	20.9
	>1	209	79.1
	Total	266	100
Marital Status	Married	187	70.3
	Separated	10	3.8
	Single	62	23.3
	Widowed	7	2.6
	Total	266	100
Occupation	Employed	7	2.6
	Not Employed	171	64.3
	Self Employed	65	24.4
	Student	23	8.6
	Total	266	100

4.2.1 Association between Socio-demographic determinants

The study result indicated significant association between education ($\chi^2=1.5343$; $df=3$; $p=0.037$), age ($\chi^2=18.143$; $df=2$; $p=0.016$) and gravidity ($\chi^2=48.553$; $df=4$; $p=0.028$) and utilization of maternal healthcare services.

However, the finding of the study also indicated that no statistical association between maternal healthcare utilization marital status ($\chi^2=6.639$; $df=3$; $p=0.084$) and occupation ($\chi^2=3.010$; $df=4$; $p=0.536$) of women seeking maternal service at Kapkoi Health Center.

The table indicate the socio-demographic factors and utilization of maternal healthcare services.

Table 4.2: Relationship between socio-demographic determinants. (n=266)

Variables	Attributes	Utilization of Maternal Service		Significance level
		Antenatal Respondents N (%)	Postnatal Respondents N (%)	
Education	No formal	17 (11.2 %)	12 (10.6 %)	$\chi^2=1.534$ 3; df=3; p=0.037
	Primary	60 (37.9 %)	65 (61.1 %)	
	Secondary	68 (42.8 %)	19 (19.4 %)	
	Post-Secondary	15 (9.1 %)	10 (8.9 %)	
	N	160 (100)	106 (100)	
Age	11 - 19 years	60 (37.5 %)	26 (35 %)	$\chi^2=18.14$ 3; df=2; p=0.016
	20 - 35 years	75 (47 %)	67 (63.5 %)	
	36 - 49 years	25 (17.5 %)	13 (11.5 %)	
	N	160 (100)	106 (100)	
Gravidity	0	17 (10.4 %)	40 (38.1 %)	$\chi^2=48.55$ 3; df=1; p=0.028
	>1	143 (88.6 %)	66 (62.9 %)	
	N	160 (100)	106 (100)	
Marital Status	Married	114 (70.7 %)	43 (40.6 %)	$\chi^2=6.639$; df=3; p=0.084
	Separated	4 (2.3 %)	6 (5.4 %)	
	Single	40 (25.1 %)	22 (21.8 %)	
	Widowed	2 (0.9 %)	5 (4.2 %)	
	N	160 (100)	106 (100)	
Occupation	Employed	5 (3.9 %)	2 (2.1 %)	$\chi^2=3.010$; df= 3; p=0.536
	Not Employed	108 (67.1 %)	69 (64.9 %)	
	Self Employed	39 (24.4 %)	24 (22.9 %)	
	Student	13 (7.6 %)	10 (10.1 %)	
	N	160 (100)	106 (100)	

Focused Group Discussion conducted, three of the participants mentioned age as one of the factors that greatly affected maternal utilization. Participant 6, aged 21 married and parity 2 suggested that “*Just as my colleague has said I am too young to mix with other experienced mothers, they always ashame us*”. Participants 3 who is aged 36 years, separated and parity 2 suggested that “*Young women are easily influenced by the TBAs to deliver at home*” while Participant 1 aged 19 years not married and of gravidae 1 said that “*Am young and I feel I should not be mixed with the aged in the same clinic*”.

4.3 Client Determinants

The study findings indicated a significant association between religious practices ($\chi^2 = 10.423$, $df= 4$, $p=0.034$), cultural practices ($\chi^2 = 2.786$, $df= 4$, $p=0.043$) and perception of women on quality service delivery ($\chi^2 = 2.446$, $df= 4$, $p=0.001$) and maternal healthcare utilization among women of reproductive age (15-49 years) seeking service within Kapkoi Health Centre. However, the study indicated no significant association between knowledge ($\chi^2 = 0.198$, $df= 3$, $p=0.978$) and distance ($\chi^2 = 6.315$, $df=4$, $p=0.177$). The table below shows clients determinants that were related to maternal healthcare utilization among women of reproductive age seeking services at Kapkoi Health Centre.

Table 4.3: Relationship between clients' determinants and utilization of maternal healthcare services. (n=266)

Variables	Attributes	Utilization of maternal services		Significance level
		Antenatal Resp. N (%)	Postnatal Resp. N (%)	
Knowledge on free maternal health	Strongly Agree	34 (21.3 %)	14 (13.2 %)	$\chi^2 = 0.198$, $df= 3$, $p=0.978$
	Agree	32 (20 %)	21 (19.8 %)	
	Neutral	19 (11.9 %)	18 (17 %)	
	Disagree	35 (21.9 %)	28 (26.4 %)	
	Strongly Disagree	40 (25 %)	25 (23.6 %)	
Belief in Religious practice	Strongly Agree	28 (17.5 %)	22 (13.8 %)	$\chi^2 = 10.423$, $df= 4$, $p=0.034$
	Agree	33 (20.6 %)	17 (10.6 %)	
	Neutral	40 (25 %)	24 (15 %)	
	Disagree	33 (20.6 %)	21 (13.1 %)	
	Strongly Disagree	26 (16.3 %)	22 (13.8 %)	
Belief in Cultural practice	Strongly Agree	25 (15.6 %)	23 (21.7 %)	$\chi^2 = 2.786$, $df= 4$, $p=0.043$
	Agree	28 (17.5 %)	25 (23.4 %)	
	Neutral	35 (21.9 %)	20 (18.9 %)	
	Disagree	38 (23.8 %)	18 (17 %)	
	Strongly Disagree	34 (21.3 %)	20 (18.9 %)	
Distance	Strongly Agree	18 (11.3 %)	15(14.2 %)	$\chi^2 = 6.315$, $df= 4$, $p=0.177$
	Agree	31 (19.4 %)	14 (13.2 %)	
	Neutral	44 (27.5 %)	26 (24.5 %)	
	Disagree	30 (18.8 %)	27 (25.5%)	
	Strongly Disagree	37 (23.1 %)	24 (22.6 %)	
Facility offering quality service	Strongly Agree	33 (20.6 %)	18 (17 %)	$\chi^2 = 2.446$, $df= 4$, $p=0.001$
	Agree	32 (20 %)	24 (22.6 %)	
	Neutral	42 (26.3%)	23 (21.7 %)	
	Disagree	27 (16.9 %)	19 (18 %)	
	Strongly Disagree	26 (16.3 %)	22 (20.8 %)	

Focused group discussion on factors affecting utilization of maternal services was also conducted. This involved 8 respondents per group. Majority of respondents stated that cultural practices, religion and lack of quality service at the facility indeed affect utilization of maternal services. One of the participants, Participant 8 aged 32 years, married and gravida three suggested that “Most of the services are charged and of poor quality, my neighbor do not come to clinic because their church do not allow medication”.

4.4 Health Care providers’ determinants

The results of the study indicated a significant association between quality of services being offered at the facility ($\chi^2 = 17.897$, $df= 4$, $p=0.046$) and attitude of the Healthcare workers ($\chi^2 = 6.345$, $df= 4$, $p=0.026$) and maternal healthcare utilization. However, the study finding did not any significant association between availability of facility personnel ($\chi^2 = 14.567$, $df= 4$, $p=0.567$) and utilization of maternal services.

Table 4.4: Relationship between Healthcare provider factors and maternal healthcare utilization. (n=266)

Variables	Attributes	Utilization of maternal services		Significance
		Antenatal N (%)	Postnatal N (%)	
Availability of skilled Personnel	Very adequate	64 (40 %)	63 (59.4 %)	$\chi^2 = 14.567$, $df= 4$, $p=0.567$
	Adequate	56 (35 %)	23 (21.7 %)	
	Not adequate	25 (15.6 %)	15 (14.1 %)	
	Don't know	15 (9.4 %)	5 (4.7 %)	
Quality of service offered at the facility	Very adequate	58 (36.3 %)	52 (49 %)	$\chi^2 = 17.897$, $df= 4$, $p=0.046$
	Adequate	53 (33.1 %)	47 (44.3 %)	
	Not adequate	40 (25 %)	4 (3.8 %)	
	Don't know	9 (5.6 %)	3 (2.8 %)	
Healthcare provider attitude	Excellent	36 (22.5 %)	23 (21.7 %)	$\chi^2 = 6.345$, $df= 4$, $p=0.026$
	Very Good	29 (18.1 %)	20 (18.9 %)	
	Good	32 (20 %)	25 (23.6 %)	
	Poor	33 (20.6 %)	19 (17.9 %)	
	Very Poor	30 (18.8 %)	19 (17.9 %)	

Most of the FGD participants agreed that the conduct of Health care providers do not really affect their maternal service utilization, however majority believed that the health care workers were friendly. Participant 6, aged 21 married and parity 2 said that “They

don't affect us, they are good, it's our choice not to come" another Participants 3 who is aged 36 years, separated and parity 2 said that *"I know most health care providers are great, some became my friends after I gave birth"*. While one Participant 2 aged 27 years and parity 2 disagreed with other participants saying that *"Some health care workers happen to be rude to clients"*.

4.4.1 Time for Service Delivery

The study findings indicated that majority of women 194 (72.9 %) seeking services at Kapkoi Health Center spend less than 30 minutes from the time they arrive at the facility, while 45 (16.9 %) spend less than 1 hour and only 27 (10.2 %) of the respondents spend more than one hour at the facility (Figure 4.1).

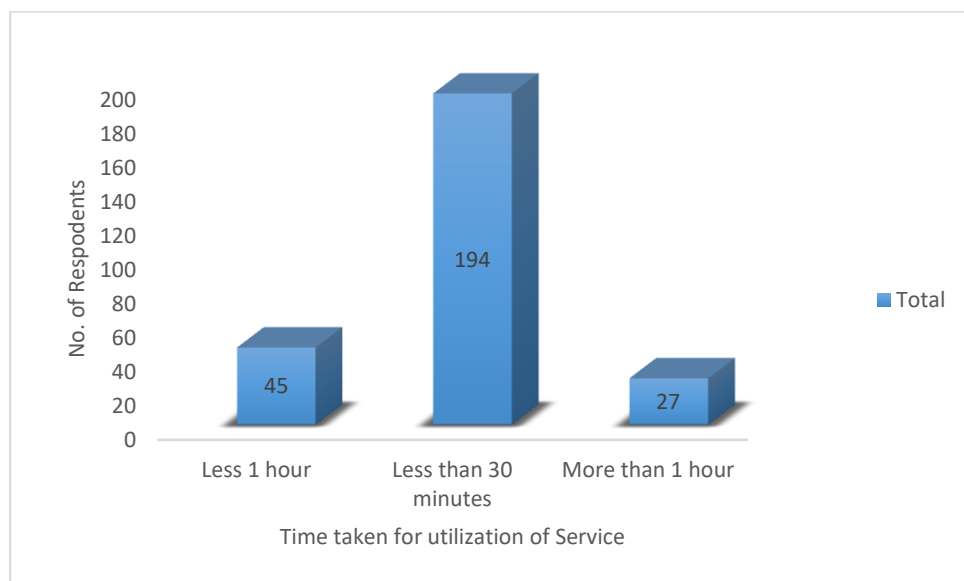


Figure 4.1: Chart showing time duration spent at the facility.

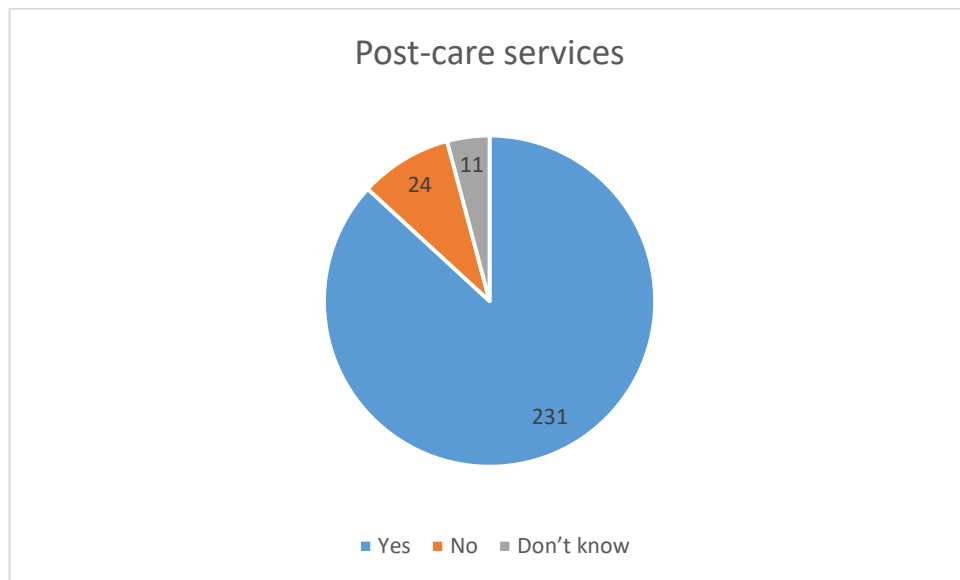
4.4.2 Expertise of Health Care Workers

In regards to the expertise of the Healthcare workers affect utilization of maternal services, the FGD participants equally agreed expertise of the healthcare workers affect their utilization of maternal services. Three participants mentioned that most of the health workers were skilled, Participant 1 aged 19 years not married and parity 1 suggested that *"They are highly skilled and competent"*. Participant 5 said that *"I believe they are competent since I rarely interact with them"* while Participant 8 also agreed that the healthcare workers are adequately skilled by saying that *"They are skilled and can handle emergencies"*.

4.4.3 Post Care services

Out of the total 266 respondents who participated in the study, 87 % (231) agreed with the fact that the facility offers post-care services once they pay a visit to the visit. 9 % (24) did not agree with the fact that facility offers post-care services while 4 % (11) did not know whether post-care services is offered after their visit to the facility. Figure 4.2 shows summary of the respondents' results.

Figure 4.2: Chart showing summary of respondents on post care services



CHAPTER FIVE

DISCUSSION

5.1 Introduction

This section presents discussions of the study findings as per the study objectives. The objectives include socio-demographic, client and healthcare provider determinants of maternal healthcare utilization.

5.2 Socio-Demographic Determinants

The findings indicate a significant association between the level of education and maternal service utilization. Women with secondary education showed higher utilization of both antenatal and postnatal services compared to those with no formal or primary education. This aligns with previous research emphasizing the role of education in improving healthcare access (Gymah et al., 2017). Higher educational attainment may result in better knowledge about the importance of maternal services, which encourages utilization. The age of women also played a significant role in service utilization. Women aged 20-35 years exhibited higher utilization of both antenatal and postnatal services compared to younger or older age groups. This finding underscores the importance of targeting interventions towards adolescents and older women, who are less likely to access maternal services. This agrees with (Burawa et al., 2019) whose study established that young women (15 – 19 years) were 0.369 times less likely to access and utilize maternal healthcare as compared to the elderly women aged (36 – 49 years).

Gravidity, or the number of pregnancies, significantly influenced service utilization. Women with more than one pregnancy demonstrated greater utilization of antenatal and postnatal services compared to women experiencing their first pregnancy. These results emphasize the importance of focusing on primigravida women to improve their access to maternal healthcare. This agrees with the study conducted in Jordan (Walker A., 2018) that established the use of maternal healthcare services to be significantly associated with women of higher gravidae compared to those of lower gravidae. Marital status displayed some noteworthy associations with service utilization. Married women had higher utilization of antenatal services than single women, while separated women demonstrated relatively lower utilization. Widowed women also exhibited low utilization of postnatal services. These findings highlight the need to consider the specific needs of women in different marital situations when promoting maternal healthcare access. This study

finding also agrees with the study conducted in Addis Ababa, Ethiopia. The study indicated risk of non-attendance was much higher in households where husband's negative attitude (Y.Dibada & Birmetta, 2018). It is reasonable enough to state that having husband who approves ANC attendance significantly increases the likelihood of women having safer and convenient maternal healthcare. Interestingly, no significant associations were found between occupation and service utilization. Employed, unemployed, self-employed, and student women showed similar patterns of utilization for both antenatal and postnatal services. This suggests that employment status might not be a determining factor in maternal service utilization in this context. This concurs with the findings in Jimma Town (Woldegohannes, 2018) that indicated no significant association between various forms of employment and utilization of maternal services.

In conclusion, this study underscores the importance of socio-demographic factors in maternal service utilization. The findings support the notion that tailored interventions should be designed for women with lower education levels, younger or older age groups, and those experiencing their first pregnancy. Furthermore, understanding the specific needs of women in diverse marital situations can contribute to improving maternal healthcare access. These results offer valuable insights for healthcare providers and policymakers striving to enhance maternal healthcare utilization in settings similar to Kapkoi Health Center.

5.3 Client Factors

The knowledge about the availability of free maternal services at the facility did not significantly influence antenatal and postnatal service utilization. This suggests that while women are generally aware of these services, their awareness alone may not be sufficient to drive utilization. Other factors likely come into play, such as accessibility, cultural beliefs, and perceived service quality.

Women who strongly agreed or agreed that their religion does not allow them to access maternal services exhibited lower utilization of antenatal and postnatal services. This finding highlights the potential influence of religious practices on healthcare-seeking behavior. Addressing this barrier may require targeted interventions that engage religious leaders and provide education on the compatibility of maternal services with religious beliefs. The findings are consistent with the result in North Nigeria, a study sought to

evaluate religious influence on utilization of maternal healthcare believe in some religious laws (Hadiza, 2019). The study in Nigeria further revealed that religious norms could be connected to poor maternal service uptake.

Cultural practices also showed a significant association with service utilization. Women who strongly agreed or agreed that their culture hinders them from accessing and utilizing maternal health care services had lower utilization rates. This emphasizes the importance of recognizing and respecting cultural practices while concurrently promoting the benefits of maternal healthcare to challenge restrictive norms. This concurs with Vilder *et al.*, (2019), whose study on access to maternal service and their determinants in Karnataka State, India revealed that cultural practice has 1.2 times likely to influence maternal utilization compared to knowledge (Vilder *et al.*, 2019).

The perceived inconvenience of long distances to the facility did not significantly affect utilization. This may indicate that women are willing to overcome geographical challenges to access maternal services, emphasizing the perceived importance of such services. A woman's perception of service quality significantly influenced utilization. Those who strongly agreed or agreed that the services were of high quality and would recommend them to others had higher utilization rates. This suggests that improving the quality of maternal services can be an effective strategy to encourage more women to seek care. This result concurs with the findings of Karnataka State, India, Vdler *et al.*, (2019) that established women perception to have 1.4 times influence on maternal utilization compared to knowledge (Vilder *et al.*, 2019).

5.4 Health care provider determinants

The study examined several key factors that influence the utilization of maternal services, including the availability of skilled personnel, the quality of services offered at the facility, and the attitude of healthcare providers. The data reveals interesting insights into how these factors affect the utilization of maternal services, with implications for both antenatal and postnatal respondents.

The quality of maternal healthcare service offered at the facility the chances of a woman's next visit .Incompetency of healthcare providers will contribute to poor quality servicedelivery and this will influence the women not to seek subsequent visits at the

facility. Quality is a major factor in maternal healthcare program and can result to the chances of women facing obstetric emergencies in health facilities (S.Goyet, 2018). Good quality facilities are a strong determinant to utilization of maternal services (S.Goyet, 2018).

In addition, maternal women can opt not to utilize a specific type of service based on how satisfied they are with healthcare provider. Negative attitude of healthcare worker toward women seeking maternal service contributes to underutilization of maternal services. Attitude of healthcare provider is therefore a greater inhibitor to utilization of maternal services. This agrees with the study conducted in Addis Ababa on factors contributing to low maternal uptake in Holeta. Almaki *et al.*, (2016) that established the risk of maternal non-attendance was as a result of healthcare provider negative attitude towards client visiting the facilities and thus leading to missed appointment and low maternal uptake (Almaki et al., 2017).

Time taken to seek maternal services, also contributes to maternal healthcare service uptake. The findings of the study indicated that most women would prefer to seek service at the shortest time possible. Young mothers of ages 15-19 years, and especially students are fearful, shy and feel stigmatized whenever they meet the elderly at the facility, therefore preferring to spend the least time at the facility, for fear of meeting older women. Older women also prefer spending shorter time so that they can go back and do other house chores. Women who wait for longer time would make their minds to attend their next subsequent visit or seek an alternative means by visiting the Traditional Birth Attendant. This finding concurs with the finding of study on access and utilization of free maternal service in Kenya among women in Kibera slums, Owiti *et al.*, (2018). The finding indicated that time and quality of service is a key factor contributing to maternal utilization uptake (Owiti et al., 2018).

Based on the study finding its evident that expertise of healthcare workers has got great impact on maternal healthcare utilization skilled workers have various capacities that attract more maternal visits. These capacities include, ways of handling customers that had been discussed previously, offering of post care services such as follow-ups for women which in turn enhance safe pregnancies, safe deliveries and safe postnatal care.

CHAPTER SIX

CONCLUSION AND RECOMMENDATION

6.1 Introduction

This section provides summary of thesis results as per research objectives.

6.2 Conclusion

In conclusion, the findings of this study shed light on critical determinants influencing the utilization of maternal healthcare services among women of reproductive age. The availability of skilled personnel, the quality of services, and the attitude of healthcare providers play significant roles in shaping the decisions of antenatal and postnatal women in seeking maternal care. It is evident that postnatal women tend to have a more positive perception of the quality of services offered at the facility, and this perception significantly influence their choice to utilize maternal services. Conversely, while no significant differences exist between antenatal and postnatal respondents regarding the availability of skilled personnel, their differing perceptions of healthcare provider attitudes emphasize the need for tailored approaches to enhance maternal service utilization.

The implications of this study suggest that healthcare facilities and policymakers should focus not only ensuring the availability of skilled personnel but also on enhancing the quality of maternal services. Furthermore, addressing variations in healthcare provider attitudes between antenatal and postnatal care can contribute to improved utilization. These findings underscore the importance of patient-centered care and continuous efforts to maintain high-quality service delivery within maternal healthcare facilities. By understanding these determinants and their impact, interventions can be designed to encourage more women to seek maternal services, ultimately contributing to better maternal and child health outcomes.

6.3 Recommendations

1. Much effort should be made by the County Health management team to enhance healthcare provider attitudes during both antenatal and postnatal care. This may include training programs and interventions to promote patient-centered care, empathy, and a positive approach. Ensuring respectful, compassionate, and sensitive care can significantly influence a woman's decision to utilize maternal healthcare services.
2. Healthcare facilities should invest in improving the quality of maternal services. Regular assessments, feedback mechanisms, and quality assurance programs should be in place to address gaps and continuously enhance the quality of care. The provision of high-quality services not only improves utilization but also fosters trust in healthcare facilities.
3. There is a need by facility leadership to offer targeted information and education campaigns to address religious and cultural beliefs that may hinder access to maternal healthcare. Such campaigns should clarify misconceptions, emphasize the importance of timely and appropriate care, and promote the compatibility of modern healthcare with religious and cultural values.
4. There is need by the facility to promote awareness on free maternal services offered at healthcare facilities is essential. Many women were not aware of these services in the study, and better communication can encourage more women to utilize these services.
5. Health policymakers and providers should recognize the differences in perceptions and determinants between antenatal and postnatal respondents. Tailored interventions and communication strategies may be more effective in addressing the specific needs and concerns of these two groups.
6. More efforts should be made by the Ministry of Health, to address issues related to distance as a barrier to healthcare utilization. This may involve increasing the number of healthcare facilities or exploring telemedicine solutions to reduce travel distances for women seeking maternal care.

6.4 Recommendations for further Research

1. There is need for research innovative approach that brings both real-time qualitative and quantitative methods in studying low access and utilization of maternal services among young mothers.
2. There is need to conduct studies exploring religious and cultural influences on maternal healthcare uptake exclusively in women on care. This would provide valuable information on eMTCT.

REFERENCES

- Abbas, R. K., W. (2015). Factors associated with utilization of antenatal care services in Cambodia. *Journal of Public Health*, 3(1).
- Ajayi, O. & Jibowo, A. A. (2018). Experience of women with at least one full-term pregnancy in Sagamu, South Western Nigeria. *BMJ Global Health Alliance*, 4(2), 167–170.
- Ali, H. S. (2019). Understand Factors Influencing Accessibility of Pregnant Women to Antenatal Care Services. *Health Science Journal.*, 4(2), 1788–190.
- Almaki et al. (2017). Utilization of maternal health care services in Ethiopia. *School of Public Health and Biomedical Studies Journal*, 4(216).
- Amano et al. (2016). Barriers to under utilization of maternal care in MUnesa Woerda, Ethiopia. *GSJ Global Healthnpublication*, 32(4), 1.
- Andersen, RM., & Newman, J. . (2020). *Social and Individual determinants of medical care utilization in the united states” Milbank memorial quarterly*. 51, 95–120.
- Annamama. (2016). Factors contributing to low maternal utilization in low income countries. *Department of Public Health Sciences Global Health Karolinska Institutet, Stockholm, Sweden*, 3(1), 49–58.
<https://doi.org/10.1039/p19760000048>
- Barrera, A. (2017). The role of maternal schooling and its interaction with public health programs in child health productions. *Journal of Development Economics*.
- Benjamin et al. (2018). Maternal health care utilization in Teso District. *BMC Pregnancy & Childbirth*, 12(1), 211.
- Bournamnais. (2018). Utilization of health and medical services: Factors influencing health care seeking behaviour and unmet health needs in rural areas of poor Asian countries. *Crown University*.
- Bun et al. (2018). Grossman’s theory of the demand for health care. *Health Economic. Global Publisher Journal*, 4(2), 178–190.
- Burawa et al. (2019). *Maternal utilization among women seeking care in Lilongwe, Malawi*.
- Campel et al. (2017). Mind the gap: addressing the" delivery challenge" in European Commission Development Cooperation. *Institute of Health Studies*, 1(1), 156.

- Castella, S. I. (2020). Examining barriers to maternal health care in Kenya using the three-delay framework. *Unpublished Dissertation, McMaster University, Hamilton, Canada.*
- Chakraborty, N. (2017). “Determinant of the use of maternal health services in rural Bangladesh. *Health Promotion International, 18(3), 218.*
- Chepkoech, R. et al. (2018). *The demand for antenatal and obstetric care services in Selected Slums in Nairobi.*
- Cleland, J. (2019). “Maternal education and child survival: further evidence and explanations. *19(4), 167.*
- Countdown to 2030. (2019). *Ending maternal death through complication in developing countries.*
- Curlin S. (2018). The Human Capital Model. Handbook of Health Economics Volume 1. *New York School of Graduate Studies.*
- Durkheim R. (2017). . Determinants of the use of maternal health services in rural Bangladesh. *Int J Africa Nursing Science, 1(1), 210.*
- Fantatum et al. (2019). Previous early antenatal service utilization improves timely booking: cross-sectional study at university of Gondar hospital, northwest Ethiopia. *Journal of Pregnancy, 3(1), 201–214.*
- Filippi V, R. C. (2018). *Maternal health in poor countries: The broader context and a call for action. 15(2), 214.*
- Graham, W.J., Bell, J.S. & Bullough, C. . (2016). Can skilled attendance during delivery reduce maternal mortality in developing countries? *Studies in Health Services Organization and Policy, 17(3).*
- Gymah et al. (2017). *Stemming the tide: A study of technical and perceived quality of care and their associations with maternal health determinants. 13(2), 111.*
- Hadiza. (2019). Religious influence on utilization of maternal healthcare in North Nigeria. *Health Transition Review, 4(3), 214–216.*
- Haralambo et al. (2017). The Maternal Health Challenges in Poor Urban Communities. *Int J Africa Nursing Science, 6(2), 146–159.*
- Hill, A., Chattopadhyay, A., Gangtaba, A. G., Matsui, M., Kamiya, Y., Ganguly, N., & Roy, P. S. (2020). Utilization of maternal and child health care services in North and South India: does spousal violence matter? *European Scientific Journal ESJ, 2(7), 107–122.* <https://doi.org/10.18063/ijps.2016.02.001>
- J.Kaggia. (2017). *Determinants of utilization of maternal care in Nairobi urban informal*

settlement. 3(20), 118.

- Kabir et al. (2018). Utilization and Factors Affecting Delivery in Health Facility Among Recent Delivered Women in Nkasi District. *Journal of Public Health*, 12(3).
- KDHS. (2014). *Kenya National Bureau of Statistics (KNBS). Kenya Demographic and Health Survey*.
- KHIS. (2018). *Kenya Health Indicator Survey*.
- Kiwuwa et al. (2018). Community household survey conducted in the Luwero area of Uganda examines prenatal and postnatal attendance rates among 769 women. *Global Publisher Journal*, 43(2), 1.
- KNBS. (2019). 2019 Kenya Population and Housing Census. In *2019 Kenya Population and Housing Census: Vol. II*. <http://www.knbs.or.ke>
- Koblinsky & Marjorie. (2017). Culture as a Social Determinant of Health Examples from Native Communities in rural China, Bolivia and Egypt. *S. Commision Paper for Institute of Medicine on the Promotion of Health Equity and the Elimination of Health Disperities*.
- Liu et al. (2018). Barriers in utilization of maternal health care services: Perceptions of rural women in Eastern Nepal. *University Medical Journal*, 48, 278–293.
- Loma Linda University. (2018). . Making Pregnancy and Childbirth Safer [fact sheet]. In *EC/UNFPA Initiative for Reproductive Health in Asia in cooperation with the German Foundation for World Population*.
- Magadi et al. (2016). Comparison in uptake of ANC, PNC and maternity services in Nakuru County Refferal Hospital, kenya. *GSJ Global Health Publication*, 54(2).
- Maguranyanga. (2019). Can Mothers Afford Maternal Health Care Costs? User Costs of maternity in Rural Zimbabwe. *African Journal of Reproductive Healt*, 3(1).
- Manishimwe C. (2017). “*Determinants of maternal Health care demand in Rwanda*.”
- Mathew et al. (2018). Impact of maternity visits among ANC and PNC clients in Holeta, Ethiopia. *BMJ*, 21(1), 160.
- Mathole et al. (2019). Use of maternal health care among African women in South. *SA Journal of Demographic*, 56(4), 321.
- Matsumura & Gubhaju. (2019). Influence of families on utilization of maternal healthcare in urban informal settlement, Zimbabwe. *International Publishers*, 16(1), 243.

- Meija, L., & Rezeberga, D. (2017). Proper maternal nutrition during pregnancy planning and pregnancy: a healthy start in life. *Institute of Maternal Studies*, 1–31. http://www.euro.who.int/__data/assets/pdf_file/0003/337566/Maternal-nutrition-Eng.pdf
- MoH. (2018). *Trans Nzoia County Ministry of Health - Report on maternal uptake among rural setting*.
- MoH. (2019). *Trans Nzoia County Health at Glance*. 35.
- MOH. (2016). *Kenya Reproductive Maternal Newborn Child and Adolescent*. https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=MOH+2016.Kenya%0Aa+reproductive%2C+maternal%2C+newborn%2C+child+and+adolescent+&btn%0AG=
- Moyer. (2017). *A framework for the evaluation of quality of care in maternity services*. 204–206.
- Mugenda, M. &. (2014). *Research methods: Quantitative and qualitative approaches*.
- Muntaz N.Z & Salway G.F. (2015). Impact of ANC clinics on low income facilities in Liberia. *International Journal of A Sustainability Publisher Journal*.
- Mwabu, G. (2017). The Production of Child Health in Kenya: A Structural Model of Birth Weight. *Journal of Africa Economics*, 22(2), 187.
- Navaneetham & Dharmalingam. (2020). Impact of education on maternal utilization in Andhra Pradesh. *International Journal of Health*, 12(4), 189.
- Nicole, B. (2018). Implementing Free Maternal Health Care in Kenya: Challenges, Strategies, and Recommendations. *KNCHR, Kenya*, 4(1).
- NPoC. (2016). Comprehensive Public Expenditure Review, EYE on Budge. *Nigeria Population Policy for Sustainable Development*.
- NRHSK. (2019). *National Reproductive Health Strategy for Kenya*. <https://www.bing.com/ck/a?!&&p=b01a2ef111740b25JmltdHM9MTY5Nzc2MDAwMCZpZ3VpZD0xNTNkZjdhMi0yZWY1LTU1ZWEtMGU2MC1INWE1MmY3MjY0OWQmaW5zaWQ9NTIwOA&pfn=3&hsh=3&fclid=153df7a2-2ef5-65ea-0e60-e5a52f72649d&psq=National+Reproductive+Health+Strategy+for+Kenya+2019&u>
- Ochako, R.; Fotso, J. C.; Ikamari, L.; Khasakhala, A. (2019). Utilization of maternal health services among young women in Kenya: Insights from the Kenya Demographic and Health Survey. *BMC Pregnancy & Childbirth:Kenya*

Publication.

- Ochieng B.M, K. M. M. M. (2020). Perspectives of stakeholders of the free maternity services for mothers in western Kenya: lessons for universal health coverage. *BMC Health Serv Res*, 22(1), 226.
- OECD, W. B. (2018). Delivering quality health services. In *World Health Organization, World Bank Group, OECD* (Issue July). <http://apps.who.int/bookorders>.
- Owiti et al. (2018). Utilization of maternal health care services in Kibera slums, Nairobi Kenya. *Ethnobotany Research and Application*, 206–212.
- Oyedepo. (2017). Factors Associated with Inadequate Prenatal Care. *Journal of Community Health Nursing*, 7(4), 265.
- Pallikwadha S. (2016). Maternal Mortality in Central India. *BMC Pregnancy & Childbirth*, 21(2), 190.
- Parson. (2018). Reducing Maternal Mortality: Strengthening the World Bank Response. *BMJ Glob Heal.*, 3(2), 142.
- Patience A. Afulani & Raymond Aborigo. (2019). Person-centred maternity care in low-income and middle-income countries: analysis of data from Kenya, Ghana, and India. *Lancet Glob Health*, 7(1), 96–109.
- Peltzer et al. (2016). Health seeking behaviour and health service utilization in Pakistan: challenging the policy maker. *BMJ Glob Heal.*, 4(1), 96.
- Penn-Kekana. (2017). Health seeking behaviour and health service utilization in Western Cape, South Africa. *International Journal of Health Science*, 5(4), 109–121.
- Piroska. (2017). Effect of distance on utilization of health care services in rural kogi state, Nigeria. *Journal of Human Ecology*, 20–29.
- Potter & Obbermeyer. (2017). Improving Access to Reproductive and Child Health Services in Developing Countries. *Indian Journal of Sexually Transmitted Diseases*, 5(1), 165.
- Rowland K.L. (2020). Relationship between education and utilization of ANC and PNC services. *BMJ Glob Heal.*, 85(2), 109–114.
- S.Banda. (2017). *Utilization of Antenatal care among adolescent in Malawi*. <https://www.bing.com/ck/a?!&&p=ef83d317df464396JmltdHM9MTY5Nzc2MDAwMCZpZ3VpZD0xNTNkZjdhMi0yZWY1LTU1ZWEtMGU2MC11NWE1MmY3MjY0OWQmaW5zaWQ9NTE3MQ&pntn=3&hsh=3&fclid=153df7a2-2ef5-65ea-0e60-e5a52f72649d&psq=Banda+2013&u=a1aHR0cHM6Ly9pci1saWJyYXJ5Lm>


t1LmFjLmtlL2J

- S.Goyet. (2018). Utilization of maternal and child health care services in India: Does women s autonomy matter? *Journal of Development Economics*, 6(2), 115–122.
- S.J Harley. (2019). Maternal Inequalities among women in Sub Saharan. *GSJ Global Health*, 34(4), 112–132.
- Sandall. (2017). Correlates of and barriers to the utilization of health services for delivery in Bangladesh. *The Scientific World Journal*, 9(2), 146.
- Shiffman, J. J. & Sultana, M. H. (2019). Experiences with facility-based maternal death reviews in northern Nigeria. *International Journal of Gynecology & Obstetrics.*, 5(2).
- Slovin E. (1960). Slovin formula for sample technique. *Sample Size Determination*.
- Smith & Houston. (2016). How Effective is Cultural Competence Training of Health Care Providers on Improving Patient Satisfaction of Minority Groups? Case study of Bangladesh and Indonesia. *World View on Evidence Based Nursing*, 3(2), 178.
- Stephanie L. (2016). *Determinants of maternal health in Sub-saharan Africa*. 14(2), 154.
- Tlebere et al. (2017). A community situational analysis conducted in South Africa emphasizes that maternal education. *Community Journal Publishers*, 76(4), 209–213.
- UDHS. (2016). *Uganda Demographic and Health Survey 2016: Key Indicators Report*. Kampala, Uganda: UBOS, and Rockville, Maryland, USA: UBOS and ICF. [4.https://dhsprogram.com/pubs/pdf/PR80/PR80.pdf](https://dhsprogram.com/pubs/pdf/PR80/PR80.pdf)[0Ahttps://dhsprogram.com/pubs/pdf/PR80/PR80.pdf](https://dhsprogram.com/pubs/pdf/PR80/PR80.pdf)[0Awww.ubos.org](http://www.ubos.org)
- UNFPA. (2017). *Adoption of Sustainable Development Goal - Aim is to end maternal death in women of reproductive age*.
- UNICEF. (2017). *Trends in Maternal mortality 2000-2015*.
- UNICEF. (2019). *Ending preventable maternal deaths in third worlds countries*. <https://www.bing.com/ck/a?!&&p=aab82f34c0699d54JmltdHM9MTY5Nzc2MDAwMCZpZ3VpZD0xNTNkZjdhMi0yZWY1LTY1ZWEtMGU2MC11NWE1MmY3MjY0OWQmaW5zaWQ9NTIwMQ&ptn=3&hsh=3&fclid=153df7a2-2ef5-65ea-0e60-e5a52f72649d&psq=Any+maternal+death+can+be+prevented+as+evidenced+by+hu>

- Vilder et.al. (2019). Accessing determinants of maternal services in Karnataka States, India. *BMC Pregnancy & Childbirth*, 6(2), 221–227.
- Walker A. (2018). Comparing Gravidity and Its Influence on Maternal Healthcare Utilization Among Women in Jordan. *International Health and Biomedical Journal*, 5(2), 205–215.
- WHO. (2016). *Standards for improving quality of maternal and newborn care in health facilities*.
- WHO, U. & U. (2017). Maternal Mortality in 2015. Estimates. *World Health Organization*.
- Woldegohannes. (2018). Determinants of maternal utilization in Jimma Town. *Health Promotion International*, 6(3), 342–345.
- Wolfe, B. L. (2019). Women’s schooling and child health: are the effects robust with adult sibling control for the women’s childhood background? *Journal of Health Economics*, 6(2), 109.
- Y.Dibada & Birmetta. (2018). *Determinants of Maternal Health Care Utilization in Holeta Town, Central Ethiopia*. 10(18).

APPENDICES

Appendix I: Research Authorization


JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE & TECHNOLOGY
BOARD OF POSTGRADUATE STUDIES
Office of the Director

Tel. 057-2501804
Email: bps@jooust.ac.ke P.O. BOX 210 - 40601
BONDO

Our Ref: H153/4023/2018 Date: 5th February 2020

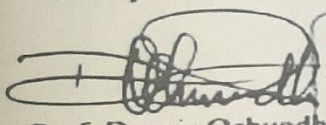
TO WHOM IT MAY CONCERN

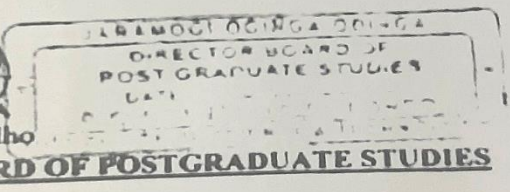
RE: ADERO GODFREY OOKO – H153/4023/2018

The above person is a bona fide postgraduate student of Jaramogi Oginga Odinga University of Science and Technology in the School of Health Sciences pursuing Master of Science in Epidemiology and Biostatistics. He has been authorized by the University to undertake research on the topic: *“Determinants of Utilization of Maternal Services among Women of Reproductive age in Kapkoi Health Center, Trans Nzoia County”*.

Any assistance accorded to him shall be appreciated.

Thank you.


Prof. Dennis Ochuodho
DIRECTOR, BOARD OF POSTGRADUATE STUDIES



Appendix II: Research Authorization



UNIVERSITY OF GRADUATE

OFFICE OF THE DIRECTOR OF GRA STUDIES AND RESEARCH
UNIVERSITY OF EASTERN AFRICA, BARATON
P.O. BOX 2500-30100. Eldoret, Kenya, East Africa

March 18, 2020

TO: Adero Godfrey Ooko

Department of Public Health

Jaramogi Oginga Odinga University of Science and Technology

Dear Godfrey,

RE: Determinants of Utilization Of Maternal Services Among Women Of Reproductive Age
In Kapkoi Health Center, Trans Nzoia County

This is to inform you that the Research Ethics Committee (REC) of the University of Eastern Africa Baraton has reviewed and approved your above research proposal. Your application approval number is UEAB/REC/10/03/2020. The approval period is 18th March, 2020 — 17th March, 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 the Research Ethics Committee (REC) of the University of Eastern Africa Baraton.
- 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 the Research Ethics Committee (REC) of the University of Eastern Africa Baraton 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 the Research Ethics Committee (REC) of the University of Eastern Africa Baraton 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 the Research Ethics Committee (REC) of the University of Eastern Africa Baraton.

Prior to commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology and Innovation (NACOSTI) <https://oris.nacosti.go.ke> and also obtain other clearances needed.

<https://oris.nacosti.go.ke> and also obtain other clearances needed.

Sincerely yours,

Handwritten signature of Prof. Jackie K. Obey, PhD.
Prof. Jackie K. Obey, PhD
Chairperson, Research Ethics Committee



UNIVERSITY OF EASTERN AFRICA
A SEVENTH-DAY ADVENTIST INSTITUTION OF HIGHER LEARNING
CHARTERED 1991

Appendix III: NACOSTI Apporval



REPUBLIC OF KENYA



**NATIONAL COMMISSION
SCIENCE, TECHNOLOGY &
INNOVATION**

Ref No: **90061**

Date of **2/June/2021**

RESEARCH LICENSE



This is to Certify that Mr. Godfrey Ooko Adero of Jaramogi Oginga Odinga University of Science and Technology, has been licensed to conduct research in Transnzoia on the topic: Determinants of Utilization of Maternal Services Among Women of Reproductive Age In Kapkoi Health Center, Trans Nzoia County for the period ending: 20/June/2021.

License No: **NACOSTI/P/20/53**

90061

Applicant Identification

Director
**NATIONAL COMMISSION FOR
SCIENCE, TECHNOLOGY &
INNOVATION**

Verification QR



**NOTE: This is a computer generated License. To verify the authenticity
Scan the QR Code using QR scanner**

THE SCIENCE, TECHNOLOGY AND INNOVATION ACT, 2013

The Grant of Research Licenses is Guided by the Science, Technology and
Innovation (Research Licensing) Regulations, 2014

CONDITIONS

1. The License is valid for the proposed research, location and specified period
2. The License any rights thereunder are non-transferable
3. The Licensee shall inform the relevant County Director of Education, County Commissioner and County Governor before commencement of the research
4. Excavation, filming and collection of specimens are subject to further necessary clearance from relevant Government Agencies
5. The License does not give authority to transfer research materials
6. NACOSTI may monitor and evaluate the licensed research project
7. The Licensee shall submit one hard copy and upload a soft copy of their final report (thesis) within one of completion of the research
8. NACOSTI reserves the right to modify the conditions of the License including cancellation without prior notice

National Commission for Science, Technology and Innovation off

Waiyaki Way, Upper Kabete,

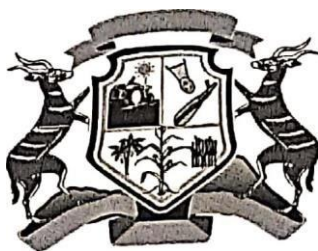
P. O. Box 30623, 00100 Nairobi, KENYA

Land line: 020 4007000, 020 2241349, 020 3310571, 020 8001077

Mobile: 0713 788 787 / 0735 404 245

E-mail: dg@nacosti.go.ke / registry@nacosti.go.ke Website: www.nacosti.go.ke

Appendix IV: Ministry of Health, Trans Nzoia



REPUBLIC OF KENYA

Office of the Director Medical Services P.o Box 4211-30200 TEL: 054-30301;
KITALE 054-30302 Fax;

**COUNTY GOVERNMENT OF TRANS NZOIA
DEPARTMENT OF HEALTH SERVICES**

Date: Tuesday, June 23, 2020

When replying please quote our

Ref: CGTN /HLT/CDW2020

Your Ref:

TO:

ADERO GODFREY OOKO

NACOSTI Ref 900610

Dear Godfrey,

RE: RESEARCH AUTHORIZATION

Following your request and authorization by the relevant research organizations, you are hereby authorized to conduct your study titled; Determinants of Utilization of maternal services among women of Reproductive age in Kapkoi Health Centre, Trans-Nzoia County.

Note that this authorization is specific to Kapkoi Health Centre in Trans-Nzoia County and is limited to the study period. Present this letter to the Sub County MOH Kwanza and the Facility in charge Kapkoi Health Centre. You will be required to share with the County department of Health a final report at the end of your study.

Dr. Philip Mbithi

AG CDMS-TRANS NZOIA Box 4287-30200,
KITALE.



CC:

Directors

Subcounty MOH Kwanza Kapkoi HC in char

Appendix V: Questionnaire Guide

SECTION A: SOCIO-DEMOGRAPHIC CHARACTERISTICS

This survey is about meant to evaluate utilization of maternal health survey among ANC and PNC women in Kapkoi H/C. Please complete this survey accordingly. Please do not write any identifying marks on the survey. Thank you for your time and corperation.

Answer the following questions by ticking where appropriate.

1. What is your level of Education?

No formal education

Primary education

Secondary education

Post-Secondary education

2. What is your age?

11 - 19 years

20-35 years

36 – 49 years

3. What is your marital status?

Single

Married ()

Widowed

Separated

4. What is your occupation?

Not Employed

Self-Employed

Employed

Student

5. Total of number of pregnancies?

0

>1

SECTION B: CLIENT RELATED FACTORS

Answer the following questions by ticking where appropriate.

Questions	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I am aware of the free maternal services offered at the facility.					
My religion does not allow me to access and utilize the maternal health care					
My culture does not allow me to access and utilize the maternal health care					
I do not like coming to the facility because of long distance.					
The maternal services offered in the hospital are of high quality and I would recommend the					

SECTION C: HEALTHCARE PROVIDER RELATED FACTORS

Answer the following questions by ticking where appropriate.

6. What is your opinion on the staffing / availability of personnel in the health facility to offer maternal health service?

Very Adequate Adequate

Not adequate Don't know

7. What is your opinion on the availability of maternal equipment/drugs in the health facility?

Very Adequate Adequate

Not adequate Don't know

8. How would you rate Health Care Workers' attitude towards clients seeking maternal health Service in this facility?

Excellent Very good Good

Poor Very poor

9. How long does it take to be offered maternal health service in the facility?

Less than 30 \leq 1 hour

More than 1 hour

10. Do the health care workers offer posts care services?

Yes No Don't know

Appendix VI: Focus Group Discussion Guide

This is a focused group discussion guide for women seeking care at Kapkoi Health Center.

1. What are some of the socio-demographic factors that affect utilization of maternal health service?
2. For what reason would you prefer to seek maternal health services in the facility?
3. For what reason would you prefer not to seek maternal health service in the facility?
4. What is your opinion on attitude of health care providers in this facility to offer maternal health service?
5. How does conduct of health care provider affect utilization of maternal health service?
6. How does expertise of health care provider affect utilization of maternal health service?
7. What is the level of accessibility of free maternal health services provided in this facility?
8. Do you approve maternal health services offered at this facility?
9. How do the knowledge, belief, myths and conception affect utilization of maternal health services?
10. What do you think should be done to enable more people utilize maternal health services?