FACTORS INFLUENCING CHOICE OF PLACE OF DELIVERY AMONG WOMEN ATTENDING ANTENATAL CARE AT TASSIA KWA NDEGE HOSPITAL EMBAKASI EAST, NAIROBI, KENYA.

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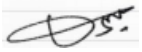
A RESEARCH THESIS SUBMITTED TO THE DEPARTMENT OF COMMUNITY HEALTH, SCHOOL OF PUBLIC HEALTH IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR A MASTER OF PUBLIC HEALTH (APPLIED EPIDEMIOLOGY) DEGREE OF AMREF INTERNATIONAL UNIVERSITY

JULY 2025

DECLARATION AND APPROVAL

Declaration by the Candidate

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

Signature……  ……...

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ABSTRACT

Background: Maternal health is a global public concern that is crucial in the development of any nation. Efforts are made to increase access to quality maternal health care. Nairobi County constructed new hospitals within densely populated areas, however there are low delivery turnouts and thus several factors seem to influence choice of place of delivery of the expectant women attending ANC in Tassia kwa Ndege Hospital, a new facility in Embakasi East Constituency.

Broad Objective: To determine factors influencing the choice of place of delivery among women attending antenatal care at Tassia kwa Ndege hospital, Embakasi East, Nairobi.

Methodology: The study design was a cross-sectional survey using mixed method approach. Systematic random sampling was used to identify the 290 respondents and purposive sampling for 5 heads of department as KII. Data was collected using questionnaires and KII guide. Content validity ensured the instruments covered all aspects being measured. Pilot study was carried out at Mukuru kwa Njenga. Reliability was tested using Cronbach's alpha with an acceptable score of 0.76. Quantitative data was analyzed using SPSS V. 30. Chi square tested the significance of variables on choice of place of delivery. Qualitative data was manually transcribed and thematically analyzed.

Findings: The findings included that age, level of education of respondent, parity, marital status, household income, employment, continuity of employment, religion, decision maker, head of family, availability of: drugs, lab. and ultrasound service (all with $p < .05$) had an influence on choice of place of delivery being other health facilities, unlike spouse education level, staff attitude, waiting time or client satisfaction.

Conclusion and recommendations: The study concludes that multiple interconnected factors influence the choice of place of delivery and recommends outreach programs on importance facility-based delivery by skilled healthcare personnel, economic empowerment of women, Promotion of shared decision making between spouses and prioritization of hospital funds towards infrastructure linked to maternal services.

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ACRONYMS/ABBREVIATIONS

ANC	Antenatal Care
APTC	Administration Police Training College
CDC	Centers for Disease Control and Prevention
CI	Confidence interval
CIDP	The County Integrated Development Plan
GSU	General Service Unit
KDHS	Kenya Demographic and Health Survey
KEMRI	Kenya Medical Research Institute
KII	Key informant interview
MMR	Maternal Mortality Rate
NACOSTI	National Commission Science Technology and Innovation
SDG	Sustainable Development Goal
UNFPA	United Nations Fund for Population Activities
UNICEF	United Nations International Children's Emergency Fund
WHO	World Health Organization

DEFINITION OF TERMS

Antenatal Care:	This is the care given by a skilled healthcare professional to women during their entire pregnancy.
Delivery/birth:	This is the process of childbirth
Maternal mortality ratio:	This is the number of maternal deaths during a given time period per 100,000 live births during the same time period.
Morbidity:	This is the state of having a particular disease
Mortality:	This the state of being subject to death
Parity:	This the number of times a woman has given birth past 24 weeks of gestation regardless of whether child was viable or not (still births)
Skilled healthcare personnel:	Competent maternal and newborn health professionals who are educated, trained and regulated to national and international standards

CHAPTER 1: INTRODUCTION

1.1 Overview

This introductory chapter serves the purpose of a general outline of the topic. In this chapter, the background, problem statement, research questions, objectives, justification, significance of the study, scope, and the assumptions, are put together to create a clear path to the study road-map.

1.2 Background of the Study

Maternal morbidity and mortality are a global public health concern. Increasing accessibility to quality health services is a global effort among many countries with the goal of realizing the right to best possible healthcare during pregnancy and childbirth while reducing inequalities in reproductive health (UNFPA, 2017). Maternal health serves as a crucial indicator of overall human health, playing a significant role in poverty alleviation and human development. Increased utilization of maternal healthcare services is essential for improving maternal health outcome, thereby reducing both morbidity and mortality rates. (Bauserman et al., 2020).

Globally, significant efforts have been made to reduce pregnancy-related morbidity and mortality and to improve the quality of maternal care during and after pregnancy. In 2020, an estimated 287,000 women of reproductive age (15–49 years) died from maternal causes (WHO, 2023). The vast majority of these deaths—approximately 95%—occurred in low- and lower-middle-income countries, highlighting a stark disparity compared to high-income nations (WHO, 2023). Encouragingly, global maternal mortality has declined between 2000 and 2020. Southern Asia and Eastern Europe recorded the most substantial reductions in maternal mortality ratios (MMR), with decreases of 70% (from 38 to 11) and 67% (from 408 to 134), respectively (WHO,

2023). Although Sub-Saharan Africa continues to have one of the highest maternal mortality rates, the region still achieved a notable 33% reduction during the same period (WHO, 2023).

In Sub-Saharan Africa, the risk of a woman dying from preventable pregnancy-related complications is alarmingly high—estimated at 1 in every 22 pregnancies, compared to just 1 in 7,300 in developed countries (Alkema et al., 2016). In Kenya, the maternal mortality ratio was reported at 355 deaths per 100,000 live births in 2022 (KDHS, 2022), underscoring the persistent and significant burden of maternal mortality in the region. One of the primary contributors to this high mortality rate in developing countries is the low utilization of maternal healthcare services. Many women do not receive focused antenatal care or are not attended to by skilled healthcare professionals during pregnancy and childbirth (Kifle et al., 2017b). Furthermore, failure to deliver in health facilities as advised by qualified healthcare providers significantly increases the risk of maternal deaths. This highlights the urgent need for improved access to and uptake of quality maternal health services across Sub-Saharan Africa.

According to Miltenburg (2023), Several initiatives have been fronted to try and reduce maternal mortality rates. It is argued that global strategies are often standardized and would thus apply across numerous country contexts which is not the case. An increase in diagnostic devices, cesarean sections and centralization of maternity hospitals are some of the ways implemented in reducing maternal morbidity and mortality.

The World Health Organization recommends a minimum of eight focused antenatal care (ANC) visits throughout pregnancy to ensure optimal maternal and fetal health outcomes (Duodu et al., 2022). Despite this, many expectant mothers in developing countries typically attend only one or two ANC visits per pregnancy (Miltenburg et al.,

2023). Moreover, data shows that only 58% of pregnant women globally complete more than four ANC visits during their pregnancy (Orangi et al., 2021), indicating a significant gap in maternal healthcare utilization.

Kenya made a significant step toward improving maternal healthcare by launching the Linda Mama program, which aimed to provide free maternal health services (Ombere, 2024). While this initiative has contributed to increasing the number of women attending focused antenatal care and promoting facility-based deliveries, concerns remain about the quality of care provided to expectant mothers. Despite improved access, a notable gap exists between service coverage and the actual burden of maternal health needs, revealing shortcomings in the quality of care delivered. Therefore, the issue is not only about where care is provided, what care is offered, or by whom, but also critically about how the care is delivered. Inadequate availability of essential medicines and a shortage of trained healthcare personnel are major factors undermining care quality, which in turn discourages women from choosing facility-based deliveries. Experiences from countries like Sri Lanka and Malaysia demonstrate that strong political commitment, removal of financial barriers, and equitable access to high-quality maternal care can lead to significant increases in facility-based deliveries (Miltenburg et al., 2023).

Several studies have demonstrated that factors such as limited resources and long distances to health facilities significantly contribute to the low uptake of maternal health services. However, even in areas where these services are available, many women still face challenges in accessing and utilizing them. Beyond physical access, individual and personal factors also heavily influence the choice of delivery location. These include marital status, religion, maternal age, socioeconomic status, cultural beliefs, and parity.

Such factors often shape a woman's decision on whether to deliver in a health facility, even after attending focused antenatal care visits and receiving skilled care.

Kenya has implemented several strategies to reduce maternal mortality, including the establishment of new healthcare facilities to enhance access to maternal health services, the recruitment and deployment of qualified healthcare professionals to address the imbalance in the healthcare provider-to-patient ratio, and the removal of user fees for maternal and child health services in public hospitals (Mwaura et al., 2024). One notable initiative is the Linda Mama program, launched in June 2013, which was designed to increase the number of deliveries attended by skilled birth attendants (Owiti et al., 2018). However, despite these efforts and the availability of free maternal care in public facilities, recent studies indicate that fewer than 61.8% of deliveries in Kenya are attended by skilled health personnel each year (Owuor & Amolo, 2019). This suggests that significant barriers to skilled care during childbirth still persist.

Despite the implementation of various initiatives such as the Linda Mama program aimed at improving maternal health and increasing service utilization, inequities in access to care persist. Women from lower socioeconomic backgrounds are disproportionately affected by these disparities. Ensuring equitable access to and optimal use of maternal healthcare services remains a significant challenge in many developing countries. A range of predisposing, enabling, and need-based factors continue to influence the extent to which women utilize these services, resulting in generally low levels of maternal healthcare utilization.

This study aimed to explore the factors influencing maternal healthcare service utilization in the Tassia area. In response to the ongoing challenges, Nairobi County took proactive steps by establishing new healthcare facilities to enhance service

delivery for expectant mothers. These facilities were strategically located in Embakasi—Nairobi's most densely populated constituency, with a population of 988,746 according to the 2019 Kenya Population and Housing Census (KNBS, 2019). Among these is Tassia Kwa Ndege Hospital, established specifically to address maternal healthcare needs in the area.

Despite a high number of clients attending antenatal care (ANC) services at Tassia Kwa Ndege Hospital—averaging 94 new ANC clients and 248 revisits per month, totaling approximately 342 ANC visits monthly between September 2022 and September 2023—delivery service utilization remains significantly low. According to the Kenya Health Information System, only 43 deliveries were recorded at the facility over the same one-year period, despite a notable increase in postnatal clinic attendance. This disparity highlights a clear under-utilization of the facility for delivery services, despite its strategic location near densely populated informal settlements intended to improve access for slum dwellers. To promote equitable access to maternal healthcare, it is essential to understand and address the factors influencing women's choice of delivery location. The primary objective of this study was to investigate the determinants affecting the choice of place of delivery at the newly established Tassia Kwa Ndege Hospital, and to understand why, despite high ANC and postnatal attendance, the number of facility-based deliveries remains strikingly low.

1.3 Statement of the Problem

In recent years, rapid urbanization and overcrowding in urban centers have placed immense pressure on existing services and basic infrastructure, largely driven by rural-to-urban migration in pursuit of better economic opportunities. Globally, it is estimated that approximately 75% of births occur outside health facilities, reflecting a significant

gap in access to skilled care during childbirth (Dantas et al., 2020).A study conducted in Uganda revealed that only 65% of births were attended by trained health professionals, highlighting the continued underutilization of maternal healthcare services (Dantas et al., 2020). Similarly, in Kenya, only 61.8% of deliveries are attended by skilled healthcare personnel each year, despite the provision of free maternal healthcare services. In Nairobi's informal settlements, just 52% of women deliver in health facilities under the care of qualified practitioners (Owuor et al., 2019). However, there has been a positive trend in the uptake of maternal health services in Kenya. Skilled birth attendance increased from 69.1% in 2015 to 80.6% in 2019, indicating progress in improving access to and utilization of maternal healthcare services (PMA, 2020).

Nairobi county constructed new health facilities within the densely populated areas to meet the high demands of expectant mothers seeking care. It is of concern that much time and investments have been made to bridge the gap to provision of quality maternal health services and to ensure there is attendance by skilled healthcare workers to expectant women in the semi urban and slum areas. However, available data shows that the turnout for antenatal care visits and maternal deliveries in the facility are not commensurate. Despite these efforts, there remains a concerning disconnect between antenatal care attendance and actual facility-based deliveries. Data from the Kenya Health Information System indicates that, over the past year since September 2022, the facility has recorded an average of 342 antenatal care (ANC) visits per month. In contrast, the number of monthly deliveries at the same facility remains markedly low, averaging only 43. This disparity raises critical questions about the factors influencing women's decisions on where to give birth. The underutilization of a well-equipped and

professionally staffed health facility suggests that other underlying barriers—beyond mere availability—may be deterring women from choosing to deliver in the facility.

Although several studies have been carried out globally to try and establish factors affecting choice of place of delivery, few have specifically investigated why expectant mothers in Nairobi continue to avoid newly established health facilities in favor of older, overcrowded, and often substandard ones. This issue is of increasing concern to the administration at Tassia Kwa Ndege Hospital, which has observed a significant underutilization of its maternal delivery services. Thus, there is need to identify factors influencing the choice of place of delivery among expectant mothers within Embakasi East after attending antenatal care visits at Tassia kwa Ndege hospital in Nairobi so as to develop proper policies improving maternal healthcare services at the hospital, enhancing patient satisfaction, and ensuring better maternal outcomes.

1.4 Research Questions

1. What is the influence of demographic factors on choice of place of delivery among women attending antenatal care at Tassia kwa Ndege Hospital, Embakasi East, Nairobi, Kenya?
2. What is the influence of economic factors on choice of place of delivery among women attending antenatal care at Tassia kwa Ndege Hospital, Embakasi East, Nairobi, Kenya?
3. What is the influence of sociocultural factors on choice of place of delivery among women attending antenatal care at Tassia kwa Ndege Hospital, Embakasi East, Nairobi, Kenya?

4. What is the influence of institutional factors on the choice of place of delivery among women attending antenatal care at Tassia kwa Ndege Hospital, Embakasi East, Nairobi, Kenya?

1.5 Broad Objective

To determine the factors influencing the choice of place of delivery among women attending antenatal care at Tassia kwa Ndege hospital, Embakasi East, Nairobi.

1.5.1 Specific Objectives

1. To determine the influence of demographic factors on choice of place of delivery among women attending antenatal care at Tassia kwa Ndege Hospital, Embakasi East, Nairobi, Kenya.
2. To determine the influence of economic factors on choice of place of delivery among women attending antenatal care at Tassia kwa Ndege Hospital, Embakasi East, Nairobi, Kenya.
3. To determine the influence of sociocultural factors on choice of place of delivery among women attending antenatal care at Tassia kwa Ndege Hospital, Embakasi East, Nairobi, Kenya.
4. To determine the influence of institutional factors on choice of place of delivery among women attending antenatal care at Tassia kwa Ndege Hospital, Embakasi East, Nairobi, Kenya.

1.6 Justification

In Kenya, efforts are actively aligned with achieving Sustainable Development Goal (SDG) 3, which focuses on ensuring healthy lives and promoting well-being for all. Specifically, target 3.1 aims to reduce the maternal mortality ratio to less than 70 per 100,000 live births by 2030, while indicator 3.1.2 seeks to increase the proportion of

births attended by skilled health personnel. To realize these goals and promote overall health and well-being, it is essential to guarantee adequate access to quality and essential healthcare services for all, particularly for expectant mothers.

Hence, Nairobi County constructed new facilities within densely populated regions under the county integrated development plan 2018-2022, In order, to reduce inequality in accessing essential health services attributed to distance, cost and to also increase the health workforce. Despite the availability of these improved services, there remains a significant gap between the high number of women attending antenatal care (ANC) and the comparatively low number of deliveries taking place at the newly established facility. This study aims to investigate the underlying factors influencing women's choice of delivery location, with a specific focus on understanding why many expectant mothers choose not to give birth in the newly constructed hospitals.

The primary motivation behind this study is to understand what affects the women's decisions, which, if addressed, could lead to increased utilization of skilled birth attendance services at the new facility. This would not only improve maternal and neonatal health outcomes but also reduce the burden on the already overstretched older hospitals within Nairobi County. Findings from this study will therefore provide data on factors influencing high maternal turnouts for ANC services in the newly established facilities and what drives their choice on the place of maternal delivery thereafter. It will give Nairobi County a chance of improving user experience for expectant mothers especially those living in densely populated regions in the county to ensure they get quality care at all times in a timely manner, by qualified healthcare personnel.

1.7 Significance of the Study

The study will have both theoretical implications and practical applicability. It will fill a gap in existing literature by focusing on maternal delivery choices within a semi urban and slum environment where health facilities are available but underutilized for deliveries. It will contribute to the growing body of research on urban maternal health behavior. By generating context-specific data from densely populated area of Nairobi, the study will enhance the understanding of urban maternal health dynamics and the interplay between service provision and user preferences.

For practical significance, it will provide valuable insights to stakeholders with an interest in maternal healthcare. The findings from this study will be instrumental in guiding policy formulation and refinement at both county and national levels. By identifying barriers that prevent women from utilizing newly constructed maternal health facilities, the research will aid policymakers in crafting targeted strategies like allocating resources more effectively. It will also provide valuable insights for healthcare providers, hospital administrators, community health workers, and other stakeholders with an interest in maternal healthcare. Understanding the lived experiences, perceptions, and decision-making processes of expectant mothers will enable these stakeholders to implement user-centered interventions. The results will thus support efforts to increase trust in newly built facilities and ensure that they are optimally utilized.

1.8 Scope

The scope of this study was among adult women of child bearing age 18-49 years who were pregnant and attended their antenatal care clinic at Tassia kwa Ndege hospital as well as those who lived within Tassia, Embakasi East constituency, Nairobi. The study

assessed the factors that lead pregnant women who attended their antenatal care at Tassia kwa Ndege Hospital to deliver in other hospitals other than Tassia kwa Ndege hospital. The study sought to assess factors such as maternal age, marital status, parity, occupation, level of education, level of income among other factors and how they influenced the choice of place of delivery. Participants were selected depending on their place of residence and their attendance at the antenatal care clinic at Tassia kwa Ndege Hospital. Questionnaires and KII were used to collect data on factors that influence the choice of place of delivery. This study did not involve those who did not attend the antenatal care clinics at Tassia kwa Ndege Hospital.

1.9 Assumptions

The assumptions of this study were that study participants would be cooperative. Information given while administering the questionnaire would be truthful and not twisted to suit the study.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter focuses on literature related to factors that influence the choice of place of maternal delivery. It covers demographic factors, economic factors, sociocultural factors and facility-based factors. Conceptual framework of the study presented and knowledge gap on the reviewed literature.

2.2 The Theoretical Framework

The study was influenced by the key theory of Health Care Utilization Model by Andersen (1995).

2.2.1 Healthcare Utilization Model

The Andersen healthcare utilization model is aimed at demonstrating various factors that influence the utilization of health services. According to the model, the decision to seek healthcare is typically driven by a perceived or actual need, and the intensity of this need—shaped by the severity and duration of an individual's condition—often determines the urgency with which services are sought. The model identifies three factors determine the use of health services they include: predisposing factors, enabling factors and need. Predisposing factors are things such as marital status, maternal age, number of births, religion, decision made at household level etc. that apply in the context of this study. Enabling factors included mothers' occupation, family income, proximity to access of service, availability of services among others.

These factors will most likely influence the need which the Anderson healthcare model split as either perceived or evaluated. Perceived need is determined by health beliefs such as severity of the condition. If one anticipates complications during delivery, they

are more likely to choose a facility that will be able to handle the complication if it arose. Evaluated need is more measurable/objective. For instance, if one perceives the pregnancy as high risk due to previous cesarean section, they will recognize the need to deliver with skilled personnel and emergency interventions set in place. To ultimately use the desired service, it will depend on the persons' degree of freedom and their autonomy as well (Andersen, 1995).

A similar study conducted in Bangladesh that adopted Anderson's healthcare utilization model to explore factors that influence maternal healthcare service utilization. The study found that socio- cultural, demographic and economic factors have an influence on maternal healthcare utilization factors (Kabir, 2021). From this theoretical framework, a conceptual framework was drawn in line with this study. External environment in the study was the area of residence, predisposing factors were Age, religion, marital status and husband level of education, the service to be fulfilled in the study was maternal need, specifically access to antenatal care assistance and delivery assistance related to childbirth.

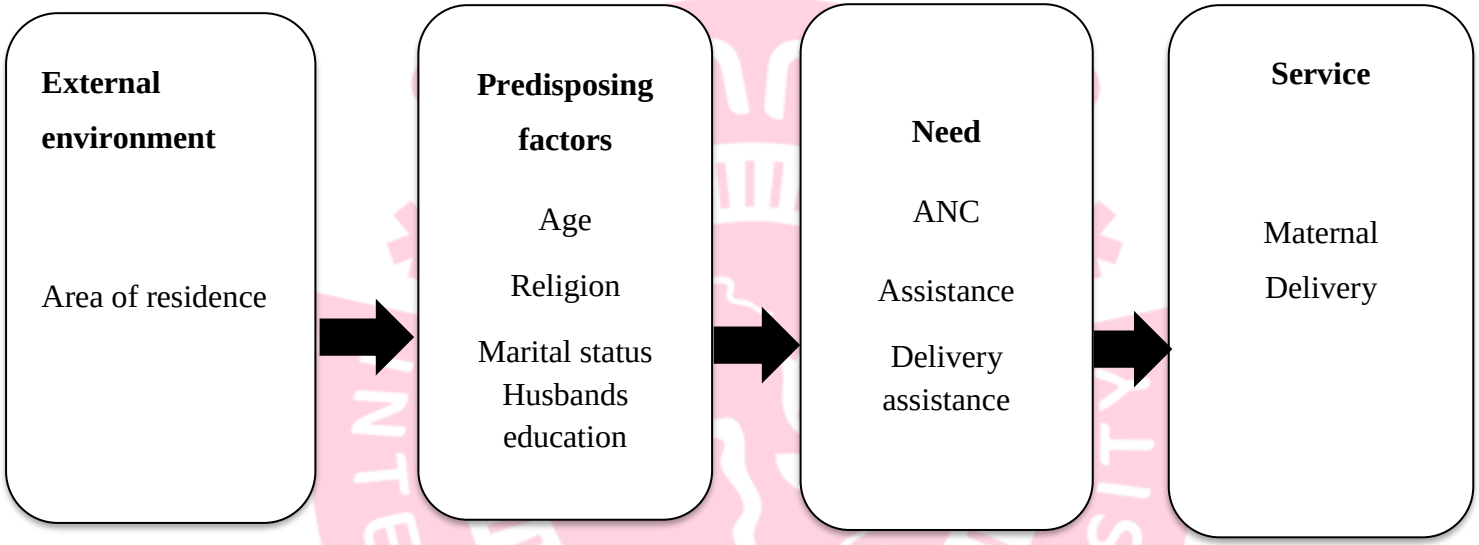

Figure 1: Andersen's behavior model (adapted) on determining the utilization of maternal healthcare service (MHS) package utilization (Kabir, 2021)

2.3 Review of Related Literature

2.3.1. Demographic Factors Influence Choice of Place of Delivery

Literature related to demographic variables such as age, parity, marital status was reviewed

2.3.1.1 Age.

While age is just one of the few factors that influence health seeking behaviors among individuals, it goes without say that it is a key factor that cannot be overlooked. Most findings however show a positive association between age and seeking maternal services at a health facility, either private and public while holding all other factors constant. A study conducted in India found women between 25-34 years of age were more likely to deliver within a health facility, private or public. (Barman et al., 2020). The study also revealed that age at marriage strongly contributed to shaping maternal health, those who before attaining the age of 18 years and were married had poor health seeking behaviors, often due to limited knowledge of maternal care, safe delivery practices, and appropriate postnatal care. Additionally, younger married women expressed fear of medical interventions such as cesarean sections, further discouraging them from seeking skilled birth (Barman et al., 2020).

A study in Congo found delivery at a health facility declined with maternal age. This was largely attributed to the perception that as age increases, the chances of having maternal complications goes down and thus delivery at a health facility is of no major importance. They therefore did not attach any importance to delivery with skilled health practitioners whether at private or government facilities. It was observed that younger women who were having their first delivery opted for hospital-based care as well and

thus there was an increase in use of hospital services by this group as compared to older women who are multiparous (Adde et al., 2020). However, a study in Angola revealed that the influence of age on maternal healthcare utilization was not linear. Instead, it was shaped by a range of other factors, including the number of children a woman had, her previous pregnancy experiences, interactions with antenatal care services, cultural beliefs, marital status, and level of health literacy (Rosário et al., 2019).

Regardless of the location, maternal age is a great contributor when it comes to selecting a place of delivery, regardless of private or governmental health facility. A study in Nairobi looking at women's preferences for a place of maternal delivery within a peri-urban setting, revealed that younger women, who have secondary education and above, financially stable and unmarried prefer clean health facilities to have their delivery, had necessary medical equipment and qualified personnel. For the older women they were more inclined to availability of the medical personnel, machinery/ equipment and supplies than the cleanliness. They also relied much on the social networking to aid in deciding where to have their deliveries (Oluoch-Aridi et al., 2020).

2.3.1.2 Parity.

Parity is considered a big contributor when it comes to decision making about place of delivery (Bolarinwa et al., 2021, Yaya & Bishwajit, 2020). A study conducted in India found that higher parity was associated with an increased likelihood of delivering outside health facilities (Patel et al., 2021). Women with multiple previous births often viewed childbirth as a routine and natural process, believing that subsequent deliveries carried minimal risk of complications. As a result, they saw little need for institutional deliveries attended by skilled health professionals.

The study also revealed that some women chose to avoid both public and private health facilities based on negative experiences from past deliveries. These past encounters influenced their decision not to return to the same facilities for subsequent births (Patel et al., 2021).

A study conducted in Ethiopia found that as parity increases, mothers are more likely to begin antenatal care (ANC) visits later in pregnancy and are often without a clear birth plan by the time of delivery (Tekelab et al., 2014). This delayed and limited engagement with ANC services negatively impacts their knowledge of pregnancy-related risks and complications. Consequently, these mothers are more likely to seek delivery services at any nearby facility, without prioritizing the presence of qualified health professionals or the safety of the facility (Tekelab et al., 2014).

In Ethiopia, a different study revealed that higher parity is associated with hospital-based delivery. Women with higher parity preferred hospital-based delivery due to previous experiences of pregnancy and childbirth and also due to the education offered after delivery as part of health promotion that enlightens them more on issues regarding pregnancy and childbirth (Asrat & Mengistu, 2018). A study carried out in Kenya, women who were of higher parity were least likely to have their deliveries in a well-equipped hospital. Those younger than 25 years were noted to deliver in hospitals that did not match the required standards and thus experienced poor outcomes cause of that reason (Magadi et al.,2007).

2.3.1.3 Marital Status.

Marriage has a great impact on the utilization of maternal health services from conception to delivery. A study assessing the influence of marriage found that women married at a young age tend to lack autonomy and this influences their overall

attendance for ANC services and their choice of place for maternal delivery as they have almost no input in the matter (Paul et al.,2019). Married women who have husbands with knowledge on the possible complications that can occur during pregnancy and at childbirth are highly likely to influence their wives to seek institutional delivery services. In countries like India, where decision-making regarding healthcare for married women is often primarily influenced or determined by their husbands, the literacy level of the male partner plays a significant role. Educated men are more likely to make informed and supportive decisions that ensure women receive appropriate care during childbirth (Jungari et al.,2019).

It was similarly noted from a study done in Ethiopia that marital status as a key factor influencing the timing of antenatal care (ANC) initiation. A study by Shitie et al. (2021) found that married women were more likely to utilize facility-based maternal health services compared to their unmarried counterparts. This was largely attributed to positive support and encouragement from partners, which played a key role in motivating women to seek care. In contrast, young unmarried women often delayed initiating antenatal care (ANC) due to fear of stigma associated with their pregnancy, and as a result, many did not fully utilize facility-based services throughout their pregnancy. Similarly, a study conducted in Meru County, Kenya, found that marital status significantly influenced ANC service utilization. Women with well-informed spouses were more likely to attend ANC clinics regularly, as their partners actively encouraged them to seek care. This group showed higher rates of institutional delivery and overall use of maternal health services (Adhiambo, 2017).

2.3.2 Economic Factors Influence Choice of Place of Delivery

Literature relating to economic factors such as income level, employment status, level of education was looked into.

2.3.2.1 Income Level and Employment Status.

Women have very limited choices when it comes to place of delivery in situations where finances are taken into consideration (Adde et al., 2020). A study carried out in Indonesia, found mothers who were employment had a lower probability of utilizing health facility services during delivery in comparison to mothers who had not been employed (Efendi et al.,2019). This could be secondary to the type of work done and the amount of income obtained from the job. If the income was low and could not sustain the household, the mothers would then shy away from utilizing institutional services for delivery.

In contrast, a study conducted in Ethiopia found that employed women were more likely to give birth in health facilities than their unemployed counterparts (Fekadu et al., 2019). This suggests that economic empowerment plays a crucial role in increasing access to and utilization of maternal health services. Supporting this, a study in Ghana by Arthur (2012) revealed that only about 30% of women from low-income households delivered in private health facilities, compared to 93% of women from high-income backgrounds who gave birth in such facilities. These findings underscore the impact of economic status on access to quality maternal care.

A study conducted in Kenya during the COVID-19 pandemic found that unemployment, loss of regular income, and limited access to transportation significantly hindered pregnant women from seeking care at their preferred health facilities. Faced with financial hardship, many women prioritized purchasing food and

meeting household needs over accessing maternal healthcare services (Oluoch-Aridi et al., 2020). This helps to confirm that economic stability affects people's health seeking behaviors.

Setting up policies that ensure the woman is not disadvantaged and providing employment opportunities will increase a woman's autonomy and will broaden their power and scope in seeking healthcare pertinent to them. Additionally, Kalindi et al., (2023) reveals that continuity in employment amongst families leads to enhanced financial capacity hence access to health insurance, and this allows women to make informed decisions on matters concerning their health.

2.3.2.2 Level of Education.

In order for one to seek healthcare and to have that done at the most appropriate place, one needs to be able to appreciate the fact that a problem actually exists. The thought followed by the actual decision to look for medical attention/ services will then be influenced by the severity of the problem at hand and its possible impacts. This cannot be overlooked that some of the women do not seek healthcare due to lack of knowledge. The cognitive ability of pregnant women, which plays a key role in recognizing health needs and acting upon them, is strongly influenced by their level of education. Education enhances their understanding of treatment options, improves their ability to follow medical instructions, and supports proper adherence to prescribed medications.

Education has the potential to spur women in improving their economic status and have an autonomy over their health. It helps women with knowledge on the importance of attending antenatal care clinics more than four visits and till the eight recommended visits and to choose the appropriate health facility to have their delivery, reducing any risks of extortion, maternal morbidity and mortality altogether (Barman et al., 2020). A

study conducted in Angola, revealed that there was no much difference as education is seen as liberating to the woman. Education is an important social determinant of health that shapes health outcomes. It enhances a woman's confidence altogether and was found to improve the autonomy and capacity to make conscious judgement concerning their health (Rosario et al., 2019).

Education helped women to see the need for attending antenatal care clinics and the need to deliver at facilities which could offer basic emergency obstetric services. An extra year spent in school meant an average decline in the odds of failing to attend antenatal care clinics by an OR = 0.83 (95% CI = 0.79–0.88), after adjusting for place of residence and age (Rosario et al., 2019). Similarly, Higher levels of education, post-secondary level is associated with higher numbers attending antenatal care services and deliveries at health facilities in Kenya.

A study in Nairobi, Kenya found young unmarried women with secondary education who were breadwinners had preference for delivery at health facilities that also had to be clean, have medical supplies and offered good quality of care (Oluoch-Aridi et al., 2020). It also found that around 25% of women with lower education levels attend antenatal services and seek delivery in standard health facilities compared to 85% of women who have secondary education or higher (Nguhiu et al.,2017). Education is a crucial factor not only for women but also for men. An educated man will tend to be supportive of the maternal health needs and will also help to amicably guide in decision making processes with regards to facility delivery as well.

2.3.3 Socio-Cultural Factors Influence Choice of Place of Delivery

Literature on the social cultural factors such as religion, decision making process were looked into in this subsection.

2.3.3.1 Decision Making Process.

Socio-cultural combines both social and cultural factors, i.e., the traditions, habits and beliefs of a certain group of people. From a study done in Pakistan (Omer et al., 2021) in India it shows that Pakistan stands in sixth position in ranking of the most populated countries in the world. It still faces grave problems to do with maternal health. Maternal health in the country is greatly influenced by religious and cultural factors. This is mainly attributed to the role of the woman in the society. Women in Pakistan have limited say since it is mostly a patriarchal society and men influence household finances and decision-making processes (Omer et al., 2021). This imbalance places women at a disadvantage and can have negative consequences on their reproductive health and access to necessary maternal care.

Many governments have tried to promote gender equality; However, Pakistan is still far behind in achieving this. Women are still discriminated and have little influence on matters related to health which can be considered personal as well. They have limiting cultural practices like purdah (the veil system) where the woman has limited mobility and thus can't seek healthcare during pregnancy or delivery. The women also lack the autonomy to seek care for themselves when they needed it. They were also afraid to make decisions on their own since if adverse outcomes came about after the decision, they would bear the consequences. The mother in laws also had more power and were in charge of their daughter in laws reproductive health and would thus decide where and when healthcare would be received (Omer et al., 2021). In sub-Saharan Africa, the situation is not any different. A study carried out in southern Sudan, the male partners had great influence and even determined where the child would be born. It was constantly reiterated that the final decision rested with the husband and he would decide the place of delivery.

According to the culture, men would decide on the place of delivery which was convenient to them since the women leaving the other children at home alone was not accepted and the presence of male healthcare workers who worked as birth attendants was also not accepted generally by men (Macharia et al., 2017). Those women who went ahead and chose facilities to deliver in by themselves were subjected to acts of domestic violence and were considered rebellious. The culture in South Sudan also hindered women from attending healthcare facilities to deliver, let alone the women choosing which health facility to have their delivery from (Macharia et al., 2017). However, with time, women have embraced health facilities and the few lucky ones have autonomy to decide their healthcare and choose facilities. Similar findings have be found in studies done in Kenya, the situation is the same where the husbands have the final say in most communities or households. This hinders women to seek care where they want or deem best for them (N'Gbichi et al., 2019).

2.3.3.2 Religion.

Religion has also been noted as one of the key factors that affect attendance to healthcare facilities for care, since they have an influence on the sexual and reproductive behavior of its members (Yaya et al., 2021). Religion offers a specific way and belief that aims to guide its followers who most times are very devout on how to approach sexual and reproductive matters. Religion can be overlooked by many, but its interpretation tends to differ depending on the individual's commitment and their involvement in the faith (Rahman et al., 2021). An example of a study carried out in Ethiopia, religion affected institutional delivery where those of the Christian faith had a high likelihood of delivering in health facilities than their Muslim counterparts (Gebregziabher et al., 2019).

However, it differed in a different qualitative study, that found no difference between Muslim and Christian mothers in selecting their place of delivery and thus further studies need to be done to assess how religion affects choice of place of delivery (Gebregziabher et al., 2019). From Ghana, Christian and Muslim women had a high probability of delivering in health facilities in contrast to women practicing traditional and other beliefs. This can be linked to the fact that those women tend to oppose modern health services and thus would keep off from hospital delivery as they saw pregnancy and delivery as natural events that should not be associated to any sort of medical intervention unless an emergency arose (Dankwah et al., 2019).

2.3.4. Institutional Factors Influence Choice of Place of Delivery

Literature on institutional factors such as medical personnel drugs and hospital equipment are discussed in this subheading.

2.3.4.1 Medical Personnel.

Maternal delivery is greatly dependent on the experiences of the women. Women preferred giving birth in health facilities where there is humane treatment offered while in hospital by the healthcare providers. Majority of the women who receive harsh treatment and their views/concerns were not listened to by the healthcare providers shy off from giving birth from a health facility. This is the case of Peru where expectant mothers avoided health facilities due to the poor attitudes of healthcare personnel (Westgard et al.,2019). It was also noted that there were long waiting hours this was also attributed to the staff shortages in the facilities as well and thus expectant mothers would opt to seek services elsewhere where they would receive prompt care (Westgard et al., 2019). The long waiting times also made pregnant women to prefer private health

facilities which were hailed for having shorter waiting times and queues and providing faster and more quality services than the public government health facilities.

In Southern Nigeria, it was noted that the attitude of healthcare providers during antenatal care visits impacted on whether the mother would deliver in the health facility or not. From the same study it was also noted that poor staff coverage made the expectant mothers fear utilizing the health services since they were not sure of steady provision of maternal health services (Johnson et al., 2020). In Akordet town, Eritrea women in labor were well treated at health facilities from there reception at the facility and the healthcare personnel had higher chances of utilizing the health facilities for delivery in future pregnancies due to the trust given to the institution (Gebregziabher et al., 2019).

In Siaya Kenya, it was revealed that the perception of the healthcare workers greatly determined where the expectant mothers would deliver. The fear of abuse/mistreatment made them shy off from using a facility to deliver. Some were returned home for coming early without proper explanation and this humiliation made the shy off from utilizing health facilities for delivery services (Ochieng & Odhiambo, 2019).

2.3.4.2 Drugs and Hospital Equipment.

A study conducted in India examining the preferred birthing options among expectant mothers attending primary health centers found that government efforts to upgrade these facilities significantly influenced delivery choices. The addition of inpatient wards, operating theaters, ultrasound machines, laboratory equipment, newborn care units, and essential medications led to a notable increase in the number of deliveries taking place within these health centers. This was owed to the fact that the patients attending their antenatal care clinics in those facilities felt at ease with well-equipped

facility in terms of infrastructure and medical personnel as well and would thus prefer to deliver than seek services elsewhere (Jayanthi et al., 2015).

A study done in Peru indicated that lack of drugs deterred women from utilizing health facilities for delivery and other services as they would not get medication at the facility and thus had no need of visiting the facility. The same study also observed that the unavailability of prescribed medications in nearby local pharmacies further discouraged expectant mothers. The difficulty in accessing essential drugs locally created an additional barrier to utilizing healthcare services, even when prescriptions were provided. (Westgard et al., 2019).

To highlight the importance of well-equipped hospitals and consistent drug availability, a study conducted in Ebonyi State, South-East Nigeria, assessed patients' perceptions of infrastructure quality in public mission hospitals versus private facilities. Among antenatal care (ANC) attendees at the public mission hospital, 29.22% rated the infrastructure as excellent, 43.88% as good, 19.90% as fair, and 7.05% as poor. In comparison, ratings for private health facilities were 13.35% excellent, 45.59% good, 30.73% fair, and 10.33% poor. Similar findings were reported in a study conducted in Ethiopia, which indicated that the availability of essential drugs and medical equipment plays a crucial role in either encouraging or discouraging women from choosing institutional delivery (Debela et al., 2021).

It was noted that expectant mothers, especially first-time mothers preferred to have their delivery conducted in the public facility since there was availability of resources aside from familiarity with healthcare workers and cheaper costs (Ajah et al., 2019). In Kenya, research done revealed that hospital factors such as necessary equipment, ambulance services, unavailability and skilled birth attendants influence choice of place

for maternal deliveries. Urban slum areas like Kibera and others located in Eastlands revealed poor scores in access to and maternal service utilization. The average score was at 4.7/10 and on average those who attending antenatal care clinic visits was at 5.3/10 facility deliveries were seen at 90% in Nairobi but the number of antenatal care visits and deliveries at facilities were greatly influenced by level of education and employment status as well (Gao et al., 2019). the above studies therefore indicate that good infrastructure and availability of drugs greatly influence the choice of place for maternal delivery.

2.4 Identification of Knowledge Gap

Research by Masaba et al. (2020), assessed the Barriers to effective use of health care services in Kenya. This data was however not conclusive as it left a gap in analysis of barriers to utilization of healthcare services in newly constructed facilities for the study was only done in already existing health facilities within the country. In a different study, Moyer and Mustafa (2013), of concern was what hindered expectant mothers from having facility-based deliveries. However, the study did not compare newly established vs old existing hospital facilities, and this gives a gap to be filled with this study that is to be undertaken.

Finally, a study conducted in coast province, Kenya by Mwangome et al. (2012). "Barriers to hospital delivery in a rural setting in Coast Province, Kenya: community attitude and behaviours." Rural Remote Health 12: 1852 much focus was put on what barriers affected hospital-based delivery among expectant women and they left a gap when it came to analysis of influence of demographic factors, which was not incorporated in the study as well as the fact that the study was not done in an urban setting is a gap that will be well filled with the current study that is to take place.

2.5 Conceptual Framework

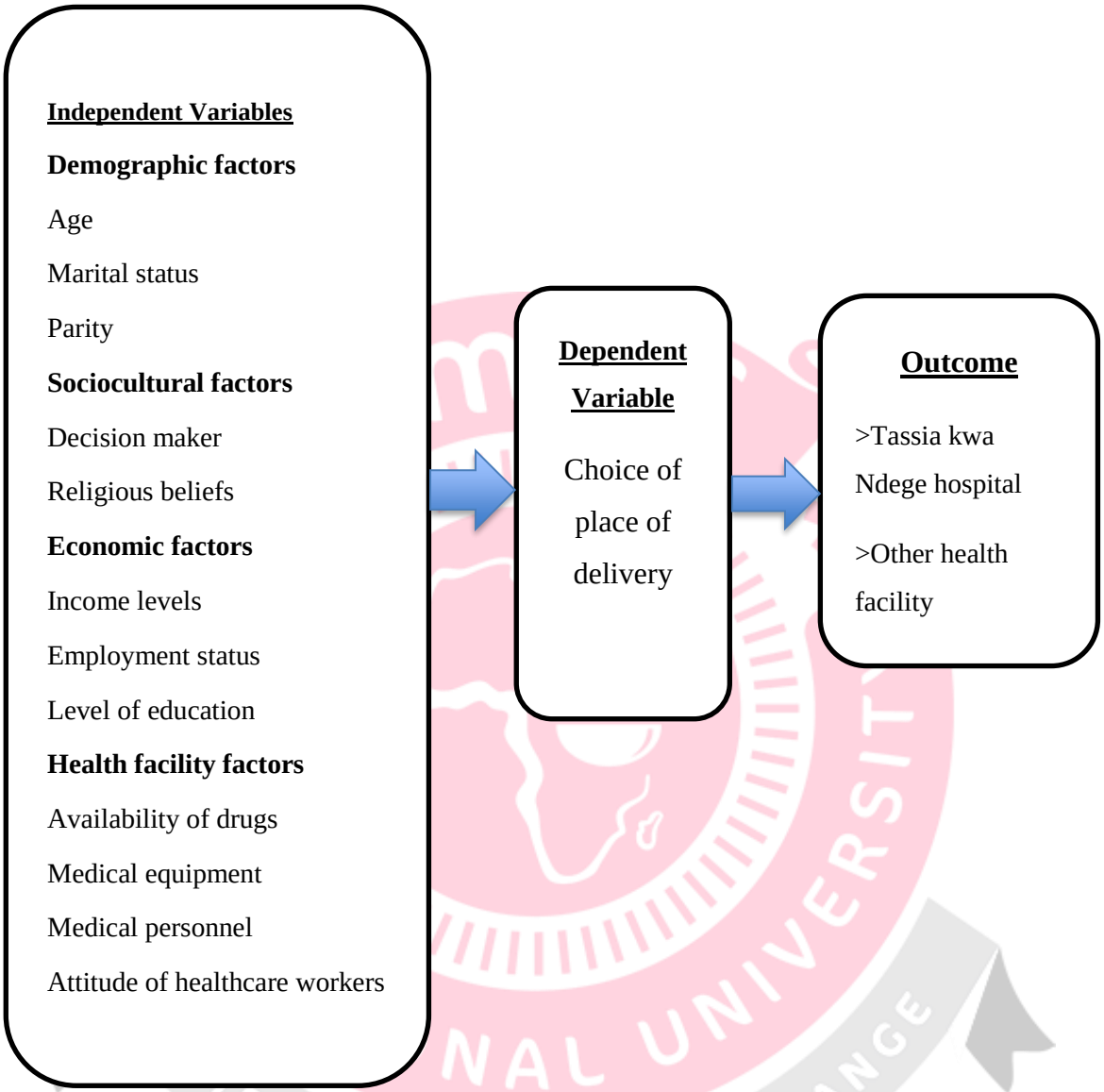

Figure 2: Conceptual framework outlining various interaction among study variables

Independent variables in the study were age, marital status**,** parity, religious beliefs, employment status, income level, availability of drugs, ultrasound among other independent variables that determines women choices for the place of delivery. All these factors predict utilization of health facility for delivery among pregnant mothers.

Dependent variable which was the choice they would prefer to deliver, this was largely influenced by the independent variables in the study. The outcome of the study being Tassia kwa Ndege verses other health care facilities

CHAPTER 3: METHODOLOGY

3.1 Introduction

This chapter provides information on the methodology and definition of study area that was used within this study and various research methods. It is organized as follows: research design of the study, description of study area/setting, target population, sample size and sampling procedure, data collection instruments and procedures, validity and reliability, data analysis, ethical considerations, constraints and limitations of the study.

3.2 Research Design

A descriptive cross-sectional study design was used where qualitative and quantitative data were collected to determine factors that influenced the choice of place of delivery among women attending antenatal care at Tassia kwa Ndege hospital, Embakasi East Nairobi Kenya.

3.3 Study Area

Tassia, Embakasi East subcounty is located within Nairobi City County, Kenya. Located on Latitude: -1°18'31.36" Longitude: 36°53'43.46". It is situated on GPS coordinate 1° 18' 17" south and 36° 54' 7" east in Tassia. There are a total of 30,948 households in the area and the land area stands at 2.5 sq. Km with a population density of 35,196 persons per square km. Tassia is a suburb region that is located next to Donholm, Kwa Ndege and Nyayo estate. The predominant land use in the area is for residential purposes with small pockets of commercial activities as well. The climate in the region tends to be that of a subtropical highland as is the larger Nairobi area. Embakasi constituency has 8 existing government health facilities that include Kayole 1, Kayole II, Mukuru, Umoja, Embakasi, GSU Embakasi, APTC Embakasi and Mukuru kwa Njenga to serve the entire population and all refer pregnant women to only

one facility, Mama Lucy Kibaki hospital. New facilities were constructed to reduce the strain on Mama Lucy Kibaki hospital these facilities include Mukuru kwa Reuben, Our Lady of Nazareth in Mukuru kwa Njenga and Tassia kwa Ndege.

3.4 Target Population

The study was carried out among expectant women age (18-49 years) who attend ANC at Tassia kwa Ndege hospital. Data was collected primarily from the women who attended their antenatal care services at the facility regularly (1125 clients per year). The study also included healthcare providers who are in charge of ANC clinic, maternity department, pharmacy, lab department and the hospital in charge as well.

3.4.1 Inclusion Criteria

1.Women in their third trimester (from 28 weeks gestation).

2.Those who attended at least 2 antenatal care visits in Tassia kwa Ndege hospital during their current pregnancy despite starting antenatal care services at other facilities but reside and continue clinic visits at Tassia kwa Ndege hospital.

3.Expectant women age 18-49 years attending ANC at Tassia.

3.4.2 Exclusion Criteria

1.Women who attended antenatal care at different health facilities with less than 2 visits at Tassia kwa Ndege hospital.

2.Women who do not live in the study area.

3. 5 Sample size and Sampling Procedures

The sample included adult women of reproductive age (18-49 years) who lived in Tassia, Embakasi East, Nairobi and sought their antenatal care services Tassia kwa Ndege hospital.

The formula applicable for sample size calculation on this study is Fisher's formula which was used in a similar study (Karanja et al., 2018).

Where n= $\frac{z^2 p(1-p)}{d^2}$

Where:

n=desired sample (for population large samples)

z= the normal standard deviation 1.96

p= target population of students' proportion

q= 1-p

d= desired precision value 0.05

Since the proportion of the population with the characteristic is not known, then 50% will be used.

Thus n= $\frac{(1.96)^2 \times 0.5 \times (1-0.5)}{0.05^2}$

=384

Since the target population is <10,000, the sample adjustment was done using the following formula to calculate the finite population correction factor.

nf= n / 1+ n/N

Where: nf= The desired sample size for population <10,000

n= the calculated sample size

N = the total population.

nf=384/(1+384/1125)

Nf=384/13.41

Nf=286

The sample size includes a 10% buffer for non-respondents. Therefore, final n=314

3.5.1 Sampling Procedure

Purposive sampling was used to select Nairobi County and Embakasi East constituency since the new hospitals were only constructed within the densely populated area. Thereafter simple random sampling was used to select Tassia kwa Ndege hospital from a pool of 3 hospitals, the other two being Our lady of Nazareth in Mukuru kwa Njenga and Mukuru kwa Reuben hospital. The procedure involved the use of balloting where the names of the three hospitals in the area were written on pieces of paper and put in a container and one piece of paper was randomly drawn. The sample size of 314 respondents were chosen via systematic random sampling.

To carry out the systematic random sampling, the population size of 1125 was divided by the sample size 314 to get the k-Th interval (4) and thus every fourth person during exit was interviewed after randomly selecting the start number. Purposive sampling was used to select head of departments as key informants and they were head of antenatal care services, head of maternity services, head of lab, pharmacy and facility in charge.

3.6 Data Collection Instruments

Data was obtained from the respondents to assess influence of demographic, economic, socio-cultural and institutional factors on choice of place of delivery using a self-developed closed ended questionnaire. In addition, a key informant interview guide was used to obtain in- depth information on institutional factors from heads of departments such as head of antenatal care services, head of maternity services, head of lab, head of pharmacy and facility in charge.

3.7 Reliability and Validity

3.7.1 Validity

The content of the questionnaire was reviewed by the researcher who went through the instrument in relation with the set objectives. Also, the content of the questionnaire was ascertained by the supervisors who examined the instrument to make sure that it was comprehensive and appropriate for the research. The validity was ensured through pre-testing the instrument through a pilot test. A sample of 10% (30 respondents) and 5 key respondents in charge of key departments at the hospital were selected from Our Lady of Nazareth Mukuru kwa Njenga. This group was distinct from the initial group but it had similar characteristics with those under the area of study. The purpose of the pilot test was to identify any deficiency and redundancy in the instrument items. Data from the instrument was collected from a single administration of the instrument and analyzed.

3.7.2 Reliability

The reliability of the instrument was calculated using Cronbach's alpha. The procedure is appropriate for establishing reliability in inter- item and inter - case consistency of an instrument that contains a wide range of answers. The overall reliability coefficient of the questionnaire was 0.76. Feedback was received, and necessary modifications and removal of some questions done.

3.8 Data Collection Procedures

Before data collection, permission was sought from AMREF ethics and research committee (ESRC), AMREF university school of graduate studies, National Commission for Science Technology and Innovation (License No.

NACOSTI/P/24/35165), County health offices (See Appendix VII). After the necessary authorization the researcher visited the hospital introduced self to the in-charge and explained the purpose of the visit and the benefit of the research. With permission from the in-charge of the hospital the researcher sought access to the respondents who visited the ANC clinic. Informed consent was sought from all study respondents before data collection. Once the respondent's consented questionnaires were administered. Study respondents were given ample time to fill in the closed ended questionnaire and those who were not able to read had the questionnaire translated to Swahili language by the researcher. The researcher also conducted interviews using the interview guide administered to the key informants who were heads of departments in the facility.

3.9 Data Analysis and Presentation

Data collected from the respondents was manually transcribed and then coded and input into SPSS version 30 for analysis. Data was then analyzed using descriptive statistics in form of frequencies and percentages and the results presented in tables. To determine the degree of association between various variables on the choice of place of delivery chi square test at p value < 0.05 level of significance was carried out and the results were presented in tables. Qualitative data was manually transcribed, thematically and presented in results/ discussion based on the research objective.

3.10 Ethical Considerations

Permission was sought from AMREF ethics and research committee (ESRC), AMREF university school of graduate studies, National Commission for Science Technology and Innovation (License No. NACOSTI/P/24/35165), County health offices (See Appendix VII). Informed consent was sought from all study participants before data

collection. During the process of consenting, the client was informed of the project and that participation was on voluntary basis. Participants were then informed of the research and the objectives, how long it will take, any foreseeable risks if any or any discomforts that may be encountered during the process as well. The benefits of the research were also be shared at this point as well. No monetary compensation was set in place during the process. No physical risks were anticipated during the study. The interviews were carried out in private spaces within the facility so as to ensure privacy of the respondents while carrying out the research.

For participants who sought to withdraw from the study partway, they were to inform the principal investigator that they so wish to withdraw and give reasons, though it was not a requirement before withdrawal. To ensure confidentiality, hard copies of the research data were kept in a tampered proof cabinet and research material with any proof of respondents' identity were to be disclosed only by their permission.

3.11 Study Constraints and Limitations

3.11.1 Limitation

1.Failure of respondents to cooperate fully during the exercise due to fear of victimization. Respondents were assured that information given was not be used against them and was confidential and limited to the study.

2.Unavailability of some of the antenatal care attendees due to busy schedules. A convenient time was planned to avert this

3.11.2 Constraints

1.Time: As most of the clients wanted to leave in a hurry after their ANC clinic to attend to other duties.

CHAPTER 4: RESULTS

4.1 Introduction

This chapter presents results of the study on factors influencing choice of place of delivery among women attending antenatal care at Tassia kwa Ndege hospital, Embakasi East, Nairobi. The first section of the chapter describes the influence of demographic factors such as; age, marital status, parity, level of education for the respondent and the spouse. The second part of the chapter describes the relationship between economic factors and choice of place of delivery such as; household level of income, employment status, and continuity of employment. The third section focuses on sociocultural factors; such as religion, head of the household and decision maker of the place of delivery. The last section of the chapter deals with institutional factors that influence choice of place of delivery such as; availability of drugs, laboratory services, ultrasound service, satisfaction with staff attitude at the hospital, waiting time, satisfaction with the services offered at the facility.

This chapter also presents the findings from Key Informant Interviews conducted with five heads of departments as participants. The analysis follows a thematic approach, identifying key patterns and insights from the data. Direct quotes from informants are included to illustrate key points while maintaining confidentiality.

4.2 Demographic Characteristics Influence on Choice of Place of Delivery

Data was collected on demographic characteristics that may influence choice of place of delivery among women attending antenatal care at Tassia Kwa Ndege Hospital. These factors included age, marital status, the respondent's level of education, the spouse's level of education, and parity. The results are presented in Table 1.

Table 1:Demographic Characteristics Influence on choice of Place of Delivery

Demographic		Frequency Count	Percentage (%)
Age	15-19	18	6.2
	20- 24	138	47.6
	25-29	88	30.3
	30- 34	32	11.0
	35-39	12	4.1
	40 and above	2	0.7
Total		**290**	**100.0**
Marital Status	Divorce/Separated	2	0.7
	Married/Living together	177	61.0
	Never Married	111	38.3
Total		**290**	**100.0**
Level of Education	More than secondary	76	26.2
	No education	1	0.3
	Primary	55	19.0
	Secondary	158	54.5
Total		**290**	**100.0**
Spouse's Level of Education		113	39.0
	more than secondary	94	32.4
	primary	10	3.4
	secondary	73	25.2
Total		**290**	**100.0**
Number of Children	1 child	68	23.4
	2 children	41	14.1
	3 children	7	2.4
	4 children	6	2.1
	5 children	1	0.3
	8 children	1	0.3
	no child	166	57.2
Total		**290**	**100.0**

The results in Table 1 shows that majority of the respondents (47.6%) attending antenatal care at Tassia Kwa Ndege Hospital were aged between 20- 24 years, while a minority of respondents (0.7%) were 40 years and above. Regarding marital status, most respondents (61%) were married and living with their husbands, whereas a small fraction (0.7%) were divorced or separated. WhereasIn terms of educational attainment, the majority of respondents (54.5%) had completed secondary education, while only

0.3% had no formal education. For spouses' education levels, the highest proportion (32.4%) had attained education beyond the secondary level, while the lowest proportion (3.4%) had only primary education. Lastly, in terms of child birth, a majority of respondents (57.2%%) had no child birth prior to the clinic attendance, where as a minority of respondents (0.3%) had 5 and 8 previous births respectively.

To further determine whether there was a statistically significant association between demographic factors and the choice of place of delivery among women attending antenatal care at Tassia Kwa Ndege Hospital, a chi-square test was conducted at a 0.05 level of significance. The chi-square test results assessing the influence of age on the choice of place of delivery are presented in Table 2.

Table 2:Respondents Age Influence on the choice of Place of Delivery

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-square	21.586[a]	5	<.001
Likelihood Ratio	22.490	5	<.001
N of Valid Cases	290		

a. 3 Cells (25.0%) have expected count less than 5. The minimum expected count is.76.

Results in Table 2 shows the chi square test value of $\chi 2 = 21.586$, df 5, $p < .001$. This indicates a statistically significant association between age and the choice of place of delivery.

In terms of marital status influence on choice of place of delivery a chi- square test result is shown in Table 3.

Table 3:Respondents Marital Status Influence on Choice of Place of Delivery

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-square	3.320[a]	2	.190
Likelihood Ratio	3.925	2	.141
N of Valid Cases	290		

a. 2 Cells (33.3%) have expected count less than 5. The minimum expected count is .76.

The results from Table 3 show a chi square test value of χ 2 = 3.320, df 2, p < .190. This finding indicates that there is no statistically significant association between marital status and the choice of place of delivery.

As regards the level of education influence on choice of place of delivery, a chi- square test result is indicated in Table 4.

Table 4:Respondents Level of Education Influence on Choice of Place of Delivery

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-square	14.060[a]	3	.003
Likelihood Ratio	15.131	3	.002
N of Valid Cases	290		

a. 2 cells (25.0%) have expected count less than 5. The minimum expected count is .38.

Results from Table 4 shows a chi square test value of χ 2 = 14.060, df 3, p < .003. This finding indicates that there is a statistically significant association between level of education and the choice of place of delivery. Similarly, in terms of the respondent's spouse level of education influence on choice of place of delivery a chi - square test result is shown in Table 5.

Table 5: Respondents Spouse Level of Education Influence on Choice of Place of Delivery

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-square	3.105[a]	3	.376
Likelihood Ratio	3.106	3	.376
N of Valid Cases	290		

a. 1 cells (12.5%) have expected count less than 5.The minimum expected count is 3.79.

Results from Table 5 shows a chi square test value of χ 2 = 3.105, df 3, p < .376. This finding indicates that there is no association of spouse's level of education on choice of place of delivery.

On influence of parity of the on the choice of place of delivery, the chi-square test result is indicated in Table 6.

Table 6:Respondents Parity's Influence on Choice of Place of Delivery

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-square	23.861[a]	6	<.001
Likelihood Ratio	25.665	6	<.001
N of Valid Cases	290		

a. 8 cells (57.1%) have expected count less than 5. The minimum expected count is .38.

The results from the table indicates a chi square test result of χ 2 = 23.861, df 6, p < .001. This finding indicates that there is an association of parity on choice of place of delivery.

4.3. Economic Factors Influence on Choice of Place of Delivery

Data was collected on economic factors influence on choice of place of delivery among women attending antenatal care at Tassia Kwa Ndege Hospital. This included; monthly household level of income, employment status, and continuity of employment. The findings are indicated in Table 7.

Table 7:Economic Factors Influence on Choice of Place of Delivery

Economic traits		Frequency Count	Percentage (%)
Income Level	20k-39Ksh	158	54.5
	40k-59Ksh	73	25.2
	not employed	42	14.5
	Under 20Ksh	17	5.9
	Total	**290**	**100**
Respondent Employment Status	employed	43	14.8
	not employed	113	39.0
	self employed	134	46.2
	Total	**290**	**100.00**
Continuity in employment of the respondent	all year	132	45.5
	not employed	114	39.3
	occasional	2	0.7
	Total	**290**	**100.0**

The findings presented in Table 7 indicate that the majority of respondents (54.5%) attending antenatal care at Tassia Kwa Ndege Hospital reported a monthly household income between KES 20,000 and 39,000. While a minority of respondents (5.9%) had a monthly household level of income of less than 20,000 Kenya shillings. In terms of employment status, majority of the respondents (46.2%) were self-employed, while a minority of respondents (14.5%) had some formal employment. In terms of employment continuity, the majority (45.5%) reported being employed throughout the year, while only 0.7% had occasional employment.

To establish further whether there was a statistically significant association of economic factors on choice of place of delivery among women attending antenatal care at Tassia Kwa Ndege Hospital, a chi -square test at 0.05 level of significance was determined. The results evaluating the influence of monthly household income on the choice of place of delivery are presented in Table 8.

Table 8:Respondents Monthly Household level of incomes Influence on choice Place of Delivery.

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-square	66.886[a]	3	<.001
Likelihood Ratio	76.969	3	<.001
N of Valid Cases	290		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 6.45.

Results from Table 8 shows chi square test value of χ 2 = 66.886, df 3, p < .001. This indicates that there is a statistically significant association between monthly household

income and the choice of place of delivery. In terms of employment status influence on choice of place of delivery, a chi- square test result is shown in Table 9.

Table 9:Respondents Employment Status Influence on the Place of Delivery

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-square	10.864[a]	2	.004
Likelihood Ratio	11.245	2	.004
N of Valid Cases	290		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 16.31.

Results from Table 9 shows chi square test value of χ 2 = 10.864, df 2, p <. 004.This indicates that there is an association of employment status influence on choice of place of delivery.

As regards continuity in employment influence on choice of place of delivery, the chi square test result is indicated in Table 10.

Table 10:Respondents Continuity in Employments Influence on Choice of Place of Delivery

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-square	31.594[a]	3	<.001
Likelihood Ratio	31.721	3	<.001
N of Valid Cases	290		

a. 2 cells (25.0%) have expected count less than 5. The minimum expected count is .76.

Results from Table 10 shows a chi square test value of $\chi 2 = 31.594$, df 3, $p < .001$. This indicates that there is a statistically significant association between continuity in employment influence and choice of place of delivery.

4.4. Socio-Cultural Factors Influence on choice of Place of Delivery

Data was collected on socio -cultural factors influence on choice of place of delivery among women attending anti natal care at Tassia Kwa Ndege Hospital. These included; religion, decision on the place of delivery and head of the family. The results are presented in Table 11.

Table 11:Socio-cultural factors influence on Choice of place of delivery

Socio-cultural factors		Count	%
Religion	African instituted churches	15	5.2
	Catholic	48	16.6
	Evangelistic churches	79	27.2
	Islam	20	6.9
	no religion/atheist	2	0.7
	Protestant	113	39.0
	SDA	13	4.5
	Total	290	100
Decision Maker		1	0.3
	husband	47	16.2
	husband mother-in-law	1	0.3
	other	40	13.8
	self	136	46.9
	self-husband	65	22.4
	Total	**290**	**100.00**
Head of Family	other	40	13.8
	your husband	178	61.4
	yourself	72	24.8
	Total	**290**	**100.00**

Findings from Table 11 shows that majority of the respondents (39%) attending antenatal care at Tassia Kwa Ndege Hospital were of protestant faith, while a minority of respondents (0.7 %) had not confessed any faith. In terms of decision makers choice of place of delivery, majority of the respondents (46.9%) indicated self, while a minority of respondents (0.3%) indicated that decisions were made by others. As regards the family head, a majority of the respondents (61.4 %) acknowledged that the husband was the family head, while a minority of respondents (13.8%) indicated that the family was headed by others.

To establish further whether there was a statistically significant association of socio-cultural factors influence on choice of place of delivery, chi -square test at 0.05 level of significance was determined. In terms of religions influence on choice of place of delivery, the chi square test result is indicated in Table 12.

Table 12:Respondents Religions Influence on Choice of Place of Delivery

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-square	12.679[a]	6	.048
Likelihood Ratio	14.707	6	.023
N of Valid Cases	290		

a. 3 cells (21.4%) have expected count less than 5. The minimum expected count is .76.

Results in Table 12 shows a chi square test result of χ 2 = 12.679, df 6, p < .048. This finding indicates that there is an association of religions influence on choice of place of delivery.

In terms of decision makers influence on choice of place of delivery, the chi square test result is indicated in Table 13.

Table 13:Respondents Decision Makers Influence on Choice of Place of Delivery

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-square	29.204[a]	5	<.001
Likelihood Ratio	32.467	5	<.001
N of Valid Cases	290		

a. 4 cells (33.3%) have expected count less than 5. The minimum expected count is .38

Results in Table 13 shows a chi square test result of χ 2 = 31.594, df 5, p < .001. This finding indicates that there is an association of decision makers influence on choice of place of delivery.

As regards the family head influence on choice of place of delivery, the chi square test result is indicated in Table 14.

Table 14:Respondents Family Head Influence on Choice of Place of Delivery

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-square	21.322[a]	2	<.001
Likelihood Ratio	23.871	2	<.001
N of Valid Cases	290		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 15.17.

Results from Table 14 shows a chi square test value of χ 2 = 21.322, df 2, p < .001. This indicates that there is an association of family head influence on choice of place of delivery.

4.5 Institutional Factors Influence on Choice of Place of Delivery

Data was collected on institutional factors influence on choice of place of delivery among women attending anti natal care at Tassia Kwa Ndege Hospital. These included; availability of drugs, laboratory services, ultrasound services staff attitude, satisfaction, waiting time, and lastly satisfaction with the clinic. The results are presented in Table 15 below.

Table 15:Institutional factors influence on choice of place of delivery

Institutional factors		Frequency Count	Percentage (%)
Availability of Drugs			
	no	139	47.9
	yes	151	52.1
Total		**290**	**100.0**
Availability of Lab services	no	154	53.1
	yes	136	46.9
Total		**290**	**100.0**
Availability of ultrasound services	no	287	99.0
	yes	3	1.0
Total		**290**	**100.0**
Staff attitude	Neither satisfied or dissatisfied	22	7.6
	Dissatisfied	0	0
	satisfied	237	81.7
	very satisfied	31	10.7
Total		**290**	**100.0**
Waiting time	0.5 hours	44	15.2
	1.0 hours	149	51.4
	2.0 hours	96	33.1
Total		**290**	**100.0**
Satisfaction with the clinic	Neither satisfied or dissatisfied	14	4.8
	dissatisfied	0	0
	satisfied	229	79.0
	very satisfied	47	16.2
Total		**290**	**100.0**

The findings from Table 15 shows that majority of the respondents (52%) attending antenatal care at Tassia Kwa Ndege Hospital indicated that availability of drugs in the hospital was a factor influencing **c**hoice of place of delivery, while a minority of respondents (10%) indicated that it was not a factor. In terms of availability of laboratory services as a factor influencing **c**hoice of place of delivery, majority of the respondents (46.9%) indicated that it was a factor, while a minority of respondents (0.3%) indicated the opposite. As regards availability of ultrasound services majority of the respondents (99%) indicated that it was a factor influencing **c**hoice of place of delivery. Minority of respondent (1%) indicated it was not a factor.

On matters relating to staff attitude as a factor influencing **c**hoice of place of delivery, majority of the respondents (81,7%) indicated that it was a factor, while a minority of respondents (10.7%) indicated that it was not a factor. As regards waiting time as a factor influencing **c**hoice of place of delivery, majority of the respondents (51.4%) indicated that a waiting time was one hour, while a minority of respondents (15.2%) indicated a waiting time of half an hour. In terms of satisfaction with the clinic as a factor influencing **c**hoice of place of delivery, majority of the respondents (79%) indicated that they were satisfied with the clinic, while a minority of respondents (4.8%) indicated that they were dissatisfied with the clinic.

To establish further whether there was a statistically significant association of institutional factors influence on choice of place of delivery among women attending antenatal care at Tassia Kwa Ndege Hospital, chi -square test at 0.05 level of significance was determined. In terms availability of drugs as an instructional factor influencing **c**hoice of place of delivery, the chi square test result is indicated in Table 16.

Table 16:Availability of Drugs as an Institutional Factor Influencing Choice of Place of Delivery

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-square	290.000[a]	2	<.001
Likelihood Ratio	384.961	2	<.001
N of Valid Cases	290		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 11.00.

Results in Table 16 shows a chi square test result of χ 2 = 290, df 2, p < .001. This finding indicates that there is an association of availability of drugs as an institutional factor influencing **c**hoice of place of delivery.

All key informants were in agreement that there was lack of essential medicines in adequate amounts.

"*... we lack essential medicines for our clients. This includes the supplements which are normally availed free of charge and need to be taken by all expectant women throughout their pregnancy."*

In terms of availability of laboratory services as an institutional factor influencing choice of place of delivery, the chi square test result is indicated in Table 17.

Table 17:Availability of Laboratory services as an institutional Factor Influencing the Place of Delivery

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-square	290.000[a]	2	<.001
Likelihood Ratio	384.961	2	<.001
N of Valid Cases	290		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 16.69.

Findings in Table 17 shows a chi square test result of χ 2 = 290, df 2, p < .001. This result indicates that there is an association of availability of laboratory services as an institutional factor influencing **c**hoice of place of delivery.

All 5 key informants were in agreement about laboratory services.

" …we *barely have work for expectant mothers. We have most of the machines but no reagents and will constantly ask the clients to seek lab services elsewhere. When one has to go elsewhere to seek the services which are not in the vicinity of Tassia hospital, this pushes them away and some are not satisfied with the laboratories outside as they are not sure about the quality of their work".*

In terms of availability of ultrasound services as an institutional factor influencing choice of place of delivery, the chi square test result is indicated in Table 18.

Table 18:Availability of Ultrasound Services as an Institutional Factor Influencing Choice of Place of Delivery

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-square	290.000[a]	2	<.001
Likelihood Ratio	384.961	2	<.001
N of Valid Cases	290		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 14.03.

Findings in Table 18 shows a chi square test result of χ 2 = 290, df 2, p < .001. These results indicate that there is an association of availability of ultrasound services as an institutional factor influencing **c**hoice of place of delivery.

All key informant had same perception towards ultrasound services in the facility,

"…*when the facility was opened up, the community knew that there was an ultrasound machine. Now the machine is still present but no one to operate it. It is a shame to have heavy investment into the facility for machines to be kept in a store accumulating dust while it could have helped to serve the expectant mothers.".*

As regards staff attitude as an institutional a factor influencing choice of place of delivery, the chi square test result is indicated in Table 19.

Table 19: Staff Attitude as an institutional Factor Influencing Choice of Place of Delivery

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-square	3.068[a]	2	.216
Likelihood Ratio	2.986	2	.225
N of Valid Cases	290		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 8.34.

Findings in Table 19 show chi square test result of χ 2 = 3.068, df 2, p < .001. These results indicate that there is a no association of staff attitude as an institutional factor influencing **c**hoice of place of delivery.

In terms of waiting time as an institutional factor influencing choice of place of delivery, chi square test result is indicated in Table 20.

Table 20:Waiting Time as an institutional Factor Influence on Choice of Place of Delivery

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-square	3.444[a]	3	.328
Likelihood Ratio	3.745	3	.290
N of Valid Cases	290		

a. 2 cells (25.0%) have expected count less than 5. The minimum expected count is .38.

Findings in Table 20 shows a chi square test result of $\chi 2 = 3.444$, df 3, $p < .328$. These results indicate that there is an association of waiting time as an institutional factor influencing **c**hoice of place of delivery.

In terms of satisfaction with the clinic as an institutional a factor influencing choice of place of delivery, the chi square test result is indicated in Table 21.

Table 21:Satisfaction with the Clinic as an institutional Factor Influence on Choice of Place of Delivery

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-square	.207[a]	2	.902
Likelihood Ratio	.205	2	.903
N of Valid Cases	290		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.31.

Findings in Table 21 shows chi square test result of $\chi 2 = .207$, df 2, $p < .902$. These results indicate that there is no association of satisfaction with the clinic as an institutional factor influencing **c**hoice of place of delivery.

3 of the 5 key informants were of the opinion that the clients are satisfied with the services.

"...Majority of the clients are satisfied and will keep coming back for clinic visits. They appreciate the teachings given before the clinic starts and are happy for the individualized care thereafter. If one has a concern, they are taken to the medical officer who takes his time to address their concerns and thus end up getting the ultimate care there and then. With satisfaction, this doesn't affect their choice of place of

delivery which will mostly be influenced by the other factors like lack of drugs or ultrasound services".

CHAPTER 5: DISCUSSIONS

5.1 Introduction

This chapter provides a discussion of the factors influencing the choice of place of delivery among women attending antenatal care (ANC) services at Tassia Kwa Ndege Hospital. The study examined a range of factors, including demographic characteristics, economic conditions, sociocultural influences, and institutional aspects of the health facility.

5.2 Demographic Characteristics Influence on Choice of Place of Delivery

Demographic characteristics were found to influence the choice of place of delivery among women attending antenatal care at Tassia Kwa Ndege Hospital. Specifically, the findings showed a significant association between age and the preferred place of delivery. This aligns with a study conducted in India by Singh et al. (2021), which found that as women grow older, they tend to have greater autonomy and improved decision-making abilities, positively influencing their health-seeking behavior and preference for facility-based deliveries. Similarly, in this study, women within higher age brackets were more likely to utilize hospital services, suggesting that increased age is associated with better health-seeking practices in the Tassia area and contributes to greater utilization of maternal healthcare services.

The study found that marital status was associated with the choice of place of delivery among respondents. This finding aligns with a study conducted in Pakistan by Rahman et al. (2021), which revealed that married women often rely on their husbands' decisions when determining where to deliver. This study finding contrasts findings by Kibera *et* al. (,2020) who carried out a study in Laikipia county and found, marital status had no

influence on the choice of place of delivery among women. Results in the study showed women had autonomy over their health and choice of place for their healthcare services.

Education level among respondents in this study had an association on choice of place of delivery. The study findings align with the study by Goli et al. (2022) who did a study in India and established that higher educational attainment enhances women's awareness on maternal health risks, their ability to make informed decisions, and their access to resources supporting institutional deliveries. This is in agreement with Barman et al. (2020) who did a study in India and noted that education increases awareness, economic status and thus women are well equipped to make informed decisions. Conversely, low educational levels are often correlated with home deliveries due to limited knowledge of obstetric complications and distrust in healthcare systems.

In contrast to other variables, the study found no significant association between the spouse's level of education and the choice of place of delivery. This finding differs from a study conducted in India by Jungari et al. (2019), which revealed that in many households, especially among married couples, the husband is the primary decision-maker, and literate men are more likely to make informed choices that support proper maternal care during delivery. Similarly, a study by Yaya et al. (2020) in The Gambia emphasized that educated spouses tend to encourage antenatal care attendance and institutional deliveries, largely due to their greater access to health information and adherence to progressive gender norms.

The study findings indicate that parity is significantly associated with the choice of place of delivery. Notably, as parity increases, the number of ANC visits tends to decrease owing to the fact of prior experience with pregnancy and labor. Similar findings were established by Moshi and Mbotwa (2020) in Tanzania where they noted

that the higher the parity the lower the chance of utilization of health facilities. This finding is also consistent with a study carried out in Uganda by Mugambe et al. (2021) which established that whereas parity increases so does the healthcare utilization decrease. This shows that even in semi urban areas, the health seeking behavior is still the same owing to parity as a factor that influence choice of place of delivery and thus the same factor doesn't change with residence and is associated with low utilization of health facilities.

5.3. Economic Factors Influence on Choice of Place of Delivery

Economic factors had an influence on choice of place of delivery among women attending antenatal care at Tassia kwa Ndege Hospital. The finding of this study identified a significant association on household level of income on choice of place of delivery. This finding is consistent with a study by Wulandari et al. (2021) in Philippines and Indonesia which noted that higher economic status was associated with financial freedom and more ANC visits and institutional deliveries. This is similar to a study by Oluoch-Aridi et al. (2020) in Kenya which found that loss of regular household income affected the health seeking behavior of expectant women to facilities they did not desire initially.

Similarly, the study findings established that there was an association of employment status on choice of place of delivery. The finding was supported by a study conducted in Kenya during the COVID-19 pandemic by Oluoch-Aridi et al. (2020) which found out that unemployment, loss of regular income and lack of transportation to health facilities as major factors influencing decisions made by pregnant women on seeking health service in facilities, they would have desired. This is similar to a study in Ethiopia

by Fekadu et al. (2019) who found out that working women were mostly found to prefer giving birth in health facilities in comparison to those who were unemployed.

In this study, it was revealed that there was an association of continuity in employment on choice of place of delivery. This finding is supported by Kalindi et al. (2023) in Zambia who revealed that women who are in employment are highly likely to use skilled services for safe delivery because of their enhanced financial strength and being exposed to health education programs in their places of work.

Stable employment further enhances decision-making autonomy allowing women to prioritize their health and that of their newborns. This study is also consistent with the findings of Oluoch-Aridi et al. (2020) in Kenya who established that loss of regular income influences decisions made by pregnant women on seeking health service in facilities, they would have desired. With utilization of healthcare, it is noted that economic stability has an influence for people in semi urban areas as well when it comes to decision making on important aspects of life such as place of maternal delivery and will decide where health services will be sought by an individual

5.4 Sociocultural Factors Influence on Choice of Place of Delivery

Socio-cultural factors had an influence on choice of place of delivery among women attending antenatal care at Tassia kwa Ndege Hospital. The findings of this study identified an association of religion on choice of place of delivery. This finding agrees with Bolarinwa et al. (2021) in a study carried out in Nigeria which revealed that women of the Islamic faith were less likely to give birth at the facility compared to their Christian counterparts and Rahman et al. (2021) from South East Asia who reported similar findings with religious beliefs being a major influence on decision making with regards to place of delivery. In our study, respondents from the Islam faith had lower

odds of delivering at Tassia hospital compared to those of other religious faith who had higher odds of delivering in Tassia Hospital. However, they still preferred having hospital-based deliveries.

From the study, it was revealed that there is an association of decision maker on choice of place of delivery. The finding from this study is consistent with a study by Bohren et al. (2023) which revealed that maternal autonomy is directly associated with improved outcomes in maternal health and further identifies that when delivery decisions are made by the husband or other family members, this showcases the influence of traditional norms or probable financial challenges and often lead to home deliveries. Omer et al. (2021) from Pakistan noted that in traditional family set-ups, male partners or elders like mother-in-law directly influence the choice of delivery due to perceived costs or cultural practices despite the accessibility of institutional delivery. Similarly, a study in Kenya by N'Gbichi et al. (2019) revealed a situation where the husbands have the final say in most communities or households. This hinders the women to seek care where they want or deem best for them.

The study revealed an association on head of a family on choice of place of delivery. The results concurred to a study carried out by Rahman et al. (2021) in South Asia where the husband decision making power was a strong predictor to facility delivery or not. Similarly, Omer et al. (2021) in Pakistan revealed that, women have a limited say in the community since it is mostly a patriarchal society and men influence the household finances and decision-making processes. This is in line with this study where despite the influence of male partners in decision making process, they encourage hospital deliveries altogether.

5.5 Influence of Institutional Factors on Choice of Place of Delivery

Institutional factors had an influence on choice of place of delivery among women attending antenatal care at Tassia kwa Ndege Hospital. The finding of this study established an association of availability of drugs as an institutional factor influencing choice of place of delivery. This finding was supported by Westgard et al. (2019) from Peru whose study established that lack of drugs deterred women from utilizing health facilities for delivery and other services as they would not get medication at the facility and thus had no need of visiting the facility. This is also consistent with a study carried out in Kenya by Gao et al. (2019) which indicated that availability of drugs had a great impact on the hospital attendance and utilization among the slum dwellers in the city.

The study findings revealed that there was an association of availability of laboratory services on choice of place of delivery. The unavailability of medical supplies coupled with the inability of expectant women to purchase the said items was a great hindrance to the expectant women utilizing delivery services this was established by Boah et al. (2020) in Ghana. This is in line with findings by Ajah et al. (2019) in Nigeria who found out that availability of necessary hospital infrastructure would pull women to seek healthcare from the facility itself.

The study findings revealed that there was an association of availability of ultrasound services on choice of place of delivery. This finding is supported by a study carried out in Uganda by Mugambe et al. (2021) to assess place of delivery (private vs public hospitals), private hospitals were found to have better equipment and were well staffed to handle any obstetric complications that would arise. Similar results were noted in this study, where most respondents reported lack of ultrasound services.

Staff attitude of healthcare workers had no association on choice of place of delivery. Results from this study contrasts findings by Johnson et al. (2020) which found staff attitude has the potential to pull expectant mothers towards or away from a facility. Similarly, A study in India found out that negative staff attitude towards expectant mothers in a facility was responsible for expectant mothers to shun from seeking delivery services from a facility (Hamal et al., 2020). However, this was not in line with results obtained from this study where staff attitude was found to have no effect on the choice of place of delivery. This could be attributed to other variables that weigh heavy on the decision-making process on where to seek delivery services and not the staff attitude only.

The findings of this study reveal no association of waiting time to be attended to on choice of the place of delivery. This contrasts findings by Kidane et al. (2021) in Ethiopia which established that delivery in public hospitals is greatly influenced by the waiting times as this affects maternal satisfaction with the facility and the services being offered. Similarly, Kibera et al. (2020) study in Kenya revealed that long waiting hours at the public hospital had an influence on whether the mother would deliver in the said facility or not. However, this differed with results in this study which found out that waiting time had no influence on the choice of place of delivery. This shows the decision-making process could be affected by other factors such as lack of drugs and ultrasound services as well.

This study found no significant association between satisfaction with the clinic and the choice of place of delivery. This contrasts with findings by Gebregziabher et al. (2019) in Eritrea, which showed that women who were treated well during labor beginning from their reception at the facility and throughout their interaction with healthcare

personnel were more likely to return to the same facility for future deliveries due to increased trust in the institution. However, as noted by Bohren et al. (2023), while positive experiences such as respectful treatment can encourage institutional deliveries, broader socio-economic and structural factors often have a stronger influence on decision-making regarding where to give birth.

CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

This chapter presents conclusions and recommendations from the study. The conclusions are derived from the main variables. Assessed in the study to see if they had an influence in the choice of place of delivery among women attending ANC at Tassia Kwa Ndege hospital. The variables included demographic characteristics, economic factors, socio-cultural factors and institutional factors. The recommendations aim to address these influencing factors and provide actionable strategies to enhance the utilization of health facilities for delivery.

6.2 Conclusions

The primary objective of this study was to examine the factors influencing the choice of place of delivery among women attending antenatal care at Tassia Kwa Ndege Hospital. The findings revealed significant associations between the choice of delivery location and various demographic, economic, and institutional factors.

Demographic factors on choice of place of delivery: Demographic characteristics assessed in the study were found to have an influence on the place of delivery among study respondents. However, spouses' level of education did not show a significant influence on the decision regarding place of delivery.

Economic factors on choice of place of delivery: Economic factors such as monthly income, employment status, and job stability were found to significantly influence the choice of place of delivery among the respondents.

Socio-cultural factors on choice of place of delivery: Socio-cultural factors, including religion, the primary decision-maker in the household, and the identity of the family head, were found to influence the choice of place of delivery.

Institutional factors on choice of place of delivery: The study also revealed that the availability of drugs, laboratory services, and ultrasound facilities influenced the choice of place of delivery. However, factors such as staff attitude, waiting time, and client satisfaction with clinic visits showed no significant association with the delivery location chosen.

6.3 Recommendations

The study conducted at Tassia Kwa Ndege Hospital provides valuable insights into the needs of expectant women and the factors influencing their health-seeking behavior, particularly in the context of newly established healthcare facilities designed to meet their specific needs. Based on the study findings, the following recommendations are proposed:

1. Launch outreach initiatives aimed at educating women on the importance of facility-based delivery by skilled healthcare personnel.
2. Economic empowerment of women in the society by provision of start-up capital and mentorship of women entrepreneurs.
3. Promotion of shared decision making between spouses through couple focused education to ensure that women are actively involved in choices concerning their care.
4. The hospital administration should allocate additional resources to procure essential drugs, lab reagents and recruitment of skilled personnel.

For Future Research:

Role of male: This study focused exclusively on expectant mothers and did not include male partners or consider their role and influence within the household or community. Future research should explore the role men play from pregnancy through to delivery, particularly their impact on the health-seeking behaviors of expectant women.

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APPENDIX

APPENDIX I: INFORMED CONSENT FORM FOR QUESTIONNAIRE

Study Title: FACTORS INFLUENCING CHOICE OF PLACE OF DELIVERY AMONG MOTHERS ATTENDING ANTENATAL CARE AT TASSIA KWA NDEGE HOSPITAL EMBAKASI EAST, NAIROBI, KENYA.

Name of Principal Investigator(s): Vincent Momanyi

Co Investigators: Sr. Dr. Margaret Wandera Nyongesa, Dr. Isaac Okeyo

Name of Sponsor: [SELF-SPONSORED]

My name is Vincent Momanyi I am the Principal Investigator.

Purpose of study/project:

The study is being done to assess factors that influence choice of place of delivery among mothers who attend antenatal care at Tassia kwa Ndege Hospital.

We would like to invite you to be part of this research study. A research study is a way of searching for information. In this case we are looking for information on what influences one choosing their place of delivery after attending antenatal care at Tassia kwa Ndege hospital. This is important in order to know what makes one choose to deliver at Tassia or to choose another place to have their delivery services. This will help to better the services and the needs of the expectant women who attend their antenatal care clinics at the facility.

Who will take part in this study?

The study participants in this study will include women of reproductive age(18-49 years) who attend ANC at Tassia kwa Ndege hospital.

How long will the study last?

You will be in this study for 2 months from April 2024 to May 2024.

Do I have to be in the study? Can I say no?

Participating in this study is your choice. You can choose to take part in this study, or you can choose not to take part in the study. You can also decide to stop being in this study at any time. In the event where you will refuse to join the study or will want to withdraw from the study, there will be no victimization of any form and all benefits that would be given during the access to healthcare services will still be offered as before. The data collected before one decides to withdraw partway during the study will be discarded as it will be considered incomplete.

Procedure: To participate in this study, you are asked to: Fill a questionnaire. Your participation in this study will take approximately 10mins to answer a set of questions.

Benefits

This study will help us better understand the needs of expectant mothers when it comes to delivery services after attending ANC services and what influences their choice of place of delivery and thus mitigate on the same.

Risks

There are no anticipated physical risks that you are likely to be exposed to during their involvement in this study. However there might be a risk in breach of confidentiality.

Are there any costs for me if I agree to join the study?

There will be no monetary costs to you for participating in this study. There is no form of reimbursements that will be administered during this study.

Confidentiality:

There is no private information that will be requested from participants, However to ensure confidentiality of participants and data collected participants will be identified using a unique code to conceal any information that can be traced back to participants in the study. Passwords where data is stored will also be changed so as to contain the information that is confidential and also control of access to physical documents as well.

Contact: Who do I call if I have questions about the study?

Vincent Momanyi – 0727334161/ 0737006968

Questions about the study: If you have any questions regarding this study or you want any clarification pertaining this research you may contact the study Principal Investigator indicated here:

VINCENT MOMANYI

P.0 BOX 14541-20100

Vincent.Momanyi@mcampus.amref.ac.ke

0727334161/0737006968

Questions about your rights as a research participant:

If you want to know more about your rights while participating in this research or if you feel that your rights have been violated you may contact:

The Research Officer
Amref Health Africa in Kenya
Wilson Airport, Lang'ata Road
Office Tel: +254 20 6994000
Mobile No: 0795746777
Fax: +254 20 606340
P.O Box 30125-00100
Nairobi, Kenya

.

Consenter statement

I have read the information provided or has been read to me. I have been given an opportunity to ask questions and the questions have been answered satisfactorily. I consent voluntarily to participate in the project knowing that I have a right to withdraw at any time.

Participant's Name :…….

Signature----------or Thumb print----------

Date:…….

[In case it the adult is unable to consent and a Legally Authorized Representative (LAR) is consenting on behalf of the participant]

I have read the information provided or has been read to me as the legally authorized representative. I have been given an opportunity to ask questions and the questions have been answered satisfactorily. I consent voluntarily for the person I am representing to participate in the project knowing that I have a right to withdraw the consent and stop the person I am representing from further participating in the research at any time.

LAR's Name: …….

Signature----------or Thumb print----------

Date:…….

I the undersigned affirm that the consent have been sought with full disclosure of project details to the participant to consent. (I have explained the study to the extent compatible with the participant's capability, and the participant has agreed to be in the study)

Name of the presenter (who presented/explained the consent document):……
……

Signature:
……

Date:……
……

Principal Investigator:

Signature:

Date:

APPENDIX II: QUESTIONNAIRE FOR FACTORS INFLUENCING CHOICE OF PLACE OF DELIVERY AFTER ATTENDING ANC AT TASSIA KWA NDEGE HOSPITAL.

My name is Vincent Momanyi. I am a student at AMREF International University taking a Master's Degree in public Health. I am carrying out research entitled **FACTORS INFLUENCING CHOICE OF PLACE OF DELIVERY AMONG MOTHERS ATTENDING ANTENATAL CARE AT TASSIA KWA NDEGE HOSPITAL EMBAKASI EAST, NAIROBI.** The purpose of this questionnaire is for collecting data and to aid in research that I am conducting. I am kindly requesting for your time in filling in the responses to the best of your knowledge. Responses for this research is only meant for academic purpose and will be treated as confidential.

Signature……...

Please tick (√) in the appropriate box or fill in the empty spaces.

Kindly respond to all questions.

A) Demographic information

1. What is your age? ……

2. What is your education level?

1.No education…[ ]

2.Primary… [ ]

3.Secondary… [ ]

4.More than secondary… [ ]

3. Have you delivered before?

1.Yes… [ ]

2.No… [ ]

4. If yes, what is the number of children? …….

5. What is your marital status?

1.Never married… [ ]

2.Married/living together… [ ]

3.Widowed… [ ]

4.Divorced/separated… [ ]

6. If married, what is your husbands education level?

1.No education… [ ]

2.Primary… [ ]

3.Secondary… [ ]

4.More than secondary… [ ]

7. Religion:

1. Catholic… [ ]
2. Protestant… [ ]
3. Evangelical churches… [ ]
4. African Instituted churches… [ ]
5. Orthodox… [ ]
6. Islam… [ ]
7. Hindu… [ ]
8. Traditionists… [ ]
9. No religion/atheists… [ ]
10. other[ ]

B) Economic information

1. Employment status

1. Employed… [ ]

2. Not employed… [ ]

3 .Self employed… [ ]

2.Continuity of employment

1.All year… [ ]

2.Seasonal… [ ]

3. Occasional… [ ]

3.What is the level of monthly household income?

1. Under 20,000 Ksh

2. 20,000-39,000 Ksh

3. 40,000-59,000 Ksh

4. Above 60,000 Ksh

C)Socio cultural information

1.Who is the head of the family?

1. Yourself … [ ]

2. Your husband … [ ]

3. Other specify… [ ]

2. Who makes decision regarding the place of delivery ?

1. Self… [ ]

2. Husband… [ ]

3. Mother in law… [ ]

4. Other (specify) _____

3.Who decides when you should go for ANC?

1.My husband… [ ]

2. Myself… [ ]

3. In laws… [ ]

C) Hospital factors information

1.How many ANC visits did you attend?

2.Rate ANC services

1. Good… [ ]

2. Bad… [ ]

3.Who attended to you during your ANC visit?

4.How long did you wait to see the healthcare provider?

5. How satisfied are you with the attitude of the staff towards you?

1. Very dissatisfied… [ ]
2. Dissatisfied … [ ]
3. Neither satisfied or Dissatisfied … [ ]
4. satisfied… [ ]
5. Very satisfied… [ ]

6. Were drugs available at the facility?

1. Yes… [ ]

2. No… [ ]

7. Were lab services offered at the facility?

1. Yes… [ ]
2. No… [ ]

8. Was obstetric ultrasound service offered at the facility?

1. Yes… [ ]

2. No… [ ]

9.How satisfied are you with the services offered at the facility?

1. Very dissatisfied… [ ]
2. Dissatisfied … [ ]

3. Neither satisfied or Dissatisfied … [ ]
4. Satisfied… [ ]
5. Very satisfied… [ ]

APPENDIX III: INFORMED CONSENT FORM FOR KEY INFORMANTS

Study Title: FACTORS INFLUENCING CHOICE OF PLACE OF DELIVERY AMONG MOTHERS ATTENDING ANTENATAL CARE AT TASSIA KWA NDEGE HOSPITAL EMBAKASI EAST, NAIROBI, KENYA.

Name of Principal Investigator(s): Vincent Momanyi

Co Investigators: Sr. Dr. Margaret Wandera Nyongesa, Dr. Isaac Okeyo

Name of Sponsor: [SELF-SPONSORED]

My name is Vincent Momanyi I am the Principal Investigator.

Purpose of study/project:

The study is being done to assess factors that influence choice of place of delivery among mothers who attend antenatal care at Tassia kwa Ndege Hospital.

We would like to invite you to be part of this research study. A research study is a way of searching for information. In this case we are looking for information on what influences one choosing their place of delivery after attending antenatal care at Tassia kwa Ndege hospital. This is important in order to know what makes one choose to deliver at Tassia or to choose another place to have their delivery services. This will help to better the services and the needs of the expectant women who attend their antenatal care clinics at the facility.

Who will take part in this study?

The study participants in this study will include head of departments at Tassia kwa Ndege hospital (ANC, maternity, lab, facility in charge).

How long will the study last?

You will be in this study for 2 months from April 2024 to May 2024.

Do I have to be in the study? Can I say no?

Participating in this study is your choice. You can choose to take part in this study, or you can choose not to take part in the study. You can also decide to stop being in this study at any time. In the event where you will refuse to join the study or will want to

withdraw from the study, there will be no victimization of any form and this will not be used to interfere with your daily responsibilities at work. The data collected before one decides to withdraw partway during the study will be discarded as it will be considered incomplete.

Procedure: To participate in this study, you are asked to: Fill a consent form for the interview. Your participation in this study will take approximately 30mins to answer a set of questions.

Benefits

This study will help us better understand the needs of expectant mothers when it comes to delivery services after attending ANC services and what influences their choice of place of delivery and thus mitigate on the same.

Risks

There are no anticipated physical risks that you are likely to be exposed to during their involvement in this study. However there might be a risk in breech of confidentiality.

Are there any costs for me if I agree to join the study?

There will be no monetary costs to you for participating in this study. There is no form of reimbursements that will be administered during this study.

Confidentiality:

There is no private information that will be requested from participants, However to ensure confidentiality of participants and data collected participants will be identified using a unique code to conceal any information that can be traced back to participants in the study. Passwords where data is stored will also be changed so as to contain the information that is confidential and also control of access to physical documents will be ensured as well.

Contact: Who do I call if I have questions about the study?

Vincent Momanyi – 0727334161/ 0737006968

Questions about the study: If you have any questions regarding this study or you want any clarification pertaining this research you may contact the study Principal Investigator indicated here:

VINCENT MOMANYI

P.0 BOX 14541-20100

Vincent.Momanyi@mcampus.amref.ac.ke

0727334161/0737006968

Questions about your rights as a research participant:

If you want to know more about your rights while participating in this research or if you feel that your rights have been violated you may contact:

The Research Officer
Amref Health Africa in Kenya
Wilson Airport, Lang'ata Road
Office Tel: +254 20 6994000
Mobile No: 0795746777
Fax: +254 20 606340
P.O Box 30125-00100
Nairobi, Kenya

.

Consenter statement

I have read the information provided or has been read to me. I have been given an opportunity to ask questions and the questions have been answered satisfactorily. I consent voluntarily to participate in the project knowing that I have a right to withdraw at any time.

Participant's Name :…….

Signature----------or Thumb print----------

Date:…….

[In case it the adult is unable to consent and a Legally Authorized Representative (LAR) is consenting on behalf of the participant]

I have read the information provided or has been read to me as the legally authorized representative. I have been given an opportunity to ask questions and the questions have been answered satisfactorily. I consent voluntarily for the person I am representing to participate in the project knowing that I have a right to withdraw the consent and stop the person I am representing from further participating in the research at any time.

LAR's Name: …….

Signature----------or Thumb print----------

Date:…….

I the undersigned affirm that the consent have been sought with full disclosure of project details to the participant to consent. (I have explained the study to the extent compatible with the participant's capability, and the participant has agreed to be in the study)

Name of the presenter (who presented/explained the consent document):……
……

Signature:
……

Date:……
……

Principal Investigator:

Signature:

Date:

APPENDIX IV: INTERVIEW GUIDE FOR KEY INFORMANT

1. How would you describe the level of attendance of antenatal care clinics by expectant women in the community?
2. In your opinion, do you think expectant women are satisfied with your antenatal care service package?
3. If no (to above question), why not?
4. If yes (to question 2), what makes them satisfied in your opinion?
5. What are the specific maternity services that you provide in this health facility?
6. Does the hospital have all the necessary medical devices needed to deliver maternal healthcare services appropriately? Explain
7. In your opinion, where do expectant women deliver? Private or public facility or home delivery?
8. If in your opinion they prefer to deliver in a private health facility, what drives them to choose those facilities?
9. In your opinion, are the health workers are properly trained to identify and handle maternal complications during delivery?
10. In your opinion, what areas should be worked on so that more women could come and deliver at the facility?

APPENDIX VII: NACOSTI RESEARCH PERMIT

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **120104**

Date of Issue: **14/May/2024**

RESEARCH LICENSE

This is to Certify that Dr.. Vincent Momanyi of Amref International University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Nairobi on the topic: FACTORS INFLUENCING CHOICE OF PLACE OF DELIVERY AMONG MOTHERS ATTENDING ANTENATAL CARE AT TASSIA KWA NDEGE HOSPITAL EMBAKASI EAST, NAIROBI, KENYA. for the period ending : 14/May/2025.

License No: **NACOSTI/P/24/35165**

120104

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Verification QR Code

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See overleaf for conditions

APPENDIX VIII. AMREF UNIVERSITY RESEARCH AUTHORIZATION

amref health africa

Amref Health Africa in Kenya

REF: AMREF – ESRC P1641/2024 **April 23, 2024**

Vincent Momanyi
Amref International University
P.O. Box 14541-20100
Nakuru, Kenya
Tel: +254727334161
Email: Vincent.Momanyi@mcampus.amref.ac.ke

Dear Vincent Momanyi,

RESEARCH PROTOCOL: FACTORS INFLUENCING CHOICE OF PLACE OF DELIVERY AMONG MOTHERS ATTENDING ANTENATAL CARE AT TASSIA KWA NDEGE HOSPITAL EMBAKASI EAST, NAIROBI, KENYA

Thank you for submitting your protocol to the Amref Ethics and Scientific Review Committee (ESRC).

This is to inform you that the ESRC has reviewed and approved your protocol. Your application approval number is ESRC P1641/2024. The approval period is from April 23, 2024, to April 22, 2025, and is subject to compliance with the following requirements:

a) Only approved documents (including informed consents, study instruments, advertising materials, material transfer agreements, etc.) will be used.
b) All changes including (amendments, deviations, violations, etc.) are submitted for review and approval by Amref ESRC before implementation.
c) Death and life-threatening problems and serious adverse events (SAEs) or unexpected adverse events whether related or unrelated to the study must be reported to the Amref ESRC within 72 hours of notification.
d) Any changes, anticipated or otherwise that may increase the risks or affect safety or welfare of study participants and others or affect the integrity of the research must be reported to Amref ESRC within 72 hours.
e) Clearance for export of biological specimen must be obtained from the relevant government authorities for each batch of shipment/export.
f) 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.
g) In case of late renewal, the Amref ESRC shall not be held responsible for any serious adverse events (SAEs) that may occur as a result of research activities that were carried out after the expiry of approval.
h) Submission of an executive summary report within 90 days upon completion of the study to the Amref ESRC.
i) All government regulations for prevention and control of the spread of COVID-19 including social distancing, provision of personal protective equipment for participants and research assistants should be adhered to during data collection. All research assistants should be monitored for COVID 19 symptoms and referred for testing in case they present with symptoms.

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

amref health africa

Amref Health Africa in Kenya

Please do not hesitate to contact the ESRC Secretariat (esrc.kenya@amref.org) for any clarification or query.

Yours sincerely,

AMREF - ESRC
23 APR 2024
P.O. Box 27691-00506 NAIROBI

Prof. Mohamed Karama
Chairman, Amref ESRC
CC: Samuel Kuloba, Senior Manager, Learning and Impact, Amref Health Africa.

APPENDIX IX: NAIROBI COUNTY RESEARCH AUTHORIZATION

NAIROBI CITY COUNTY
www.nairobi.go.ke

HEALTH, WELLNESS AND NUTRITION

Office of the County Chief Officer – Medical Services

REF: NCCG/HWN/REC/564 **DATE: 22nd MAY 2024**

DR. VINCENT MOMANYI
AMREF INTERNATIONAL UNIVERSITY

Dear Dr. Vincent,

RE: RESEARCH AUTHORIZATION

This is to inform you that the Nairobi City County – County Health Research Ethics Committee (REC) reviewed the documents on the study titled "FACTORS INFLUENCING CHOICE OF PLACE OF DELIVERY AMONG MOTHERS ATTENDING ANTENATAL CARE AT TASSIA KWA NDEGE HOSPITAL EMBAKASI EAST, NAIROBI, KENYA. "

I am pleased to inform you that you have been authorized to carry out the study in Nairobi County. The researcher will be required to adhere to the ethical code of conduct for health research in accordance with the Science Technology and Innovation Act, 2013 and the approval procedure and protocol for research for Nairobi.

On completion of the study, you will submit one hard copy and one copy in PDF of the research findings to the REC. In addition, you required to disseminate the research findings to health sector in liaison with the county REC. By copy of this letter, the Sub County Medical Officers of Health – Embakasi East is to accord you the necessary assistance to carry out this research study.

Yours sincerely,

DR. IRENE MUCHOKI
CHIEF OFFICER MEDICAL SERVICES &
Ag. CHIEF OFFICER NUTRITION, WELLNESS & SCHOOL FEEDING PROGRAM

Cc: Chief Officers – Public Health and Health Facilities
Sub County Medical Officer of Health - Embakasi East

LET'S MAKE **NAIROBI** WORK

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APPENDIX X: TRAINING CERTIFICATE ON RESEARCH ETHICS

TRREE

Zertifikat
Certificat
Certificado
Certificate

Promouvoir les plus hauts standards éthiques dans la protection des participants à la recherche biomédicale
Promoting the highest ethical standards in the protection of biomedical research participants

Certificat de formation - Training Certificate

Ce document atteste que - this document certifies that

Clinical Trials Centre
The University of Hong Kong

Vincent Momanyi

a complété avec succès - has successfully completed

Module 1 (2023) - Introduction to Research Ethics

du programme de formation TRREE en évaluation éthique de la recherche
of the TRREE training programme in research ethics evaluation

Release Date: 2024/02/02

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Coordinateur TRREE Coordinator

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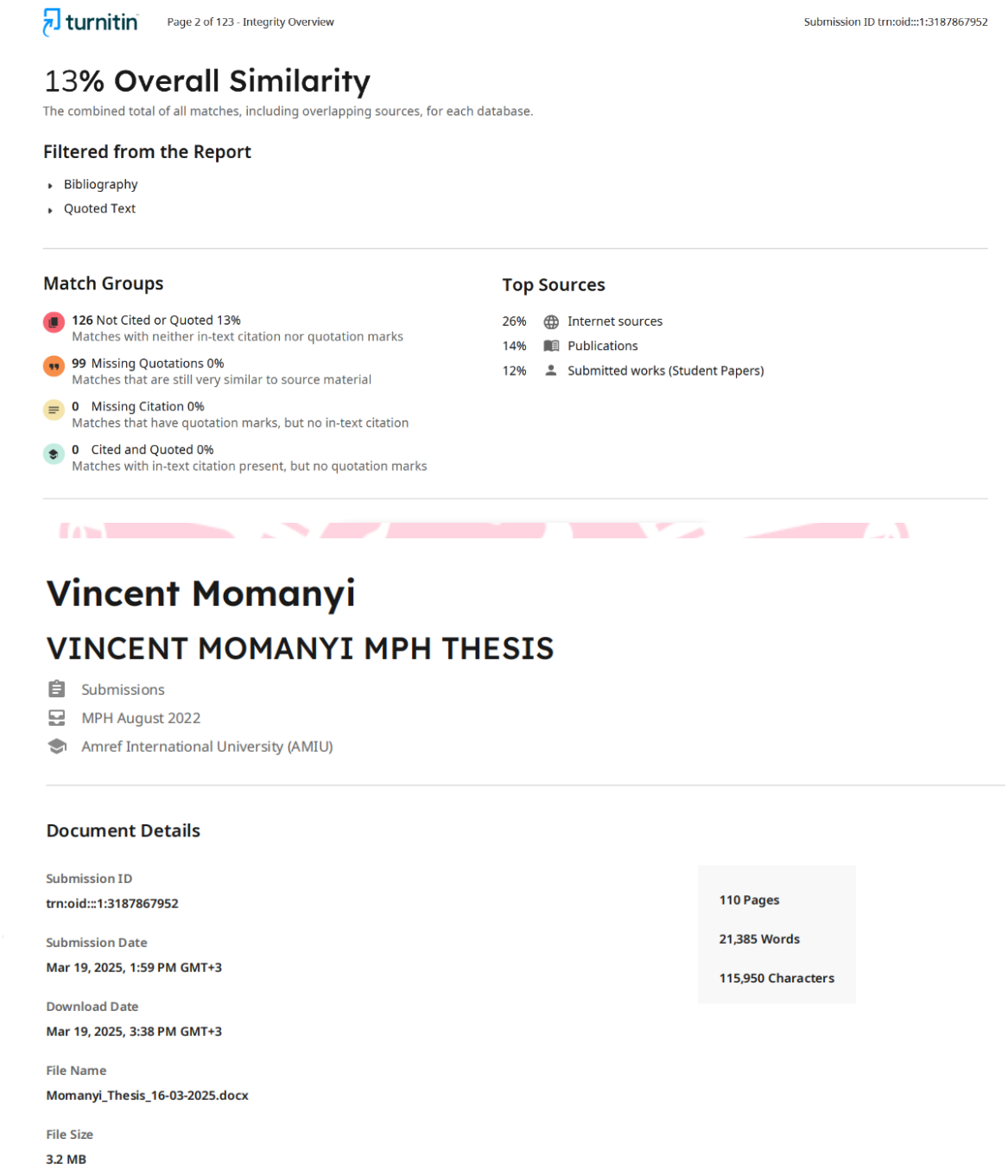
[REV : 20220217]

APPENDIX XI: PLAGIARISM REPORT



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Vincent Momanyi

VINCENT MOMANYI MPH THESIS

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