

**DEVELOPMENT OF A FACILITY-BASED
INTERVENTION MODEL ON MALE PARTNER
INVOLVEMENT IN MATERNAL AND NEONATAL
HEALTH IN A PUBLIC HEALTH FACILITY, KIAMBU
COUNTY, KENYA**

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**Development of a Facility-Based Intervention Model on Male
Partner Involvement in Maternal and Neonatal Health in A Public
Health Facility, Kiambu County, Kenya**

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for the Degree of Doctor of Philosophy in Nursing of the Jomo
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DECLARATION

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

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DEDICATION

To my Parents and and Childrens

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ABBREVIATIONS AND ACRONYMS

ANC	Antenatal Care
BPCR	Birth Preparedness and Complication Readiness
IBP	Intermittent Birth Plan
ICPD	International Conference on Population and Development
KDHS	Kenya Demographic Health Survey
MNCH	Maternal, Neonatal and Child Health
MDGs	Millennium Development Goals
NCPD	National Council for Population and Development
SDGs	Sustainable Development Goals
SRH	Sexual and Reproductive Health
TBAs	Traditional Birth Attendants
UNDP	United Nations Development Programme
VSO	Voluntary Service Overseas
WHO	World Health Organization
PMTCT	Prevention of Mother to Child Transmission
MCH	Maternal and Child Health

DEFINITION OF OPERATIONAL TERMS

Indirect maternal and neonatal outcomes (proximal outcomes):	These refer to measurable intermediate outcomes that influence maternal and neonatal health but are not direct clinical endpoints. In this study, they include reduced risk factors such as domestic violence, improved birth preparedness, improved uptake of PMTCT services, and improved knowledge of maternal and newborn danger signs.
Male partner involvement	Refers to the participation of a male partner in maternal and child health care across the antenatal, intrapartum, and postpartum periods. This includes accompanying the spouse to antenatal clinic visits and during childbirth, as well as providing supportive roles such as reminding the partner of antenatal care appointments and iron–folic acid supplementation (IFAS) intake, assisting with household chores, offering financial support, and supporting exclusive breastfeeding practices.
Maternal health	Is the health of women at the time of pregnancy, childbirth and the postpartum period.
Neonatal health	Refers to the health and well-being of a newborn baby during the first 28 days of life.
Sexual and Reproductive Health	Sexual and reproductive health is a state of physical, emotional, mental and social well-being in relation to all aspects of sexuality and reproduction—not merely the absence of disease, dysfunction or infirmity.

ABSTRACT

The 1994 International Conference on Population and Development (ICPD) emphasized the need for men to actively participate in sexual and reproductive health. However, male partner involvement in maternal, newborn and child health (MNCH) in Kenya remains limited. This study aimed to develop, implement, and evaluate the effectiveness of a facility-based intervention model to promote male partner involvement (MPI) in maternal and neonatal health at Thika County and Referral Hospital. An exploratory sequential mixed-methods design was employed. The qualitative phase involved three focus group discussions (FGDs) with nurses and two FGDs with male partners to explore barriers and enablers to male involvement. Thematic analysis was conducted using MAXQDA 2022 software, which revealed key themes including limited awareness, traditional gender norms, and logistical constraints as major barriers. These insights informed the design of a structured health facility-based intervention, tested using a quasi-experimental pre-test/post-test design. Ethical approval was sought from Jomo Kenyatta University of Agriculture and Technology (Ref. No. JKU/ISERC/02316/1113) and informed consent from participants. A total of 60 women (30 intervention, 30 control) between 17–28 weeks' gestation were recruited via systematic random sampling. Male partners in the intervention group received formal invitations to attend antenatal care (ANC) and were followed through six months postpartum. Quantitative data were collected using pre-tested semi-structured questionnaires and analysed using SPSS v27.0. Statistical tests included chi-square, Fisher's exact test, and Mann–Whitney U test, with a significance threshold of $p < 0.05$. The primary outcome male accompaniment to ANC was significantly higher in the intervention group ($U = 11.000$, $p < 0.001$), with a large effect size ($r = 0.98$). Significant improvements were also observed in male support during pregnancy and childbirth ($p < 0.001$), knowledge of danger signs in pregnancy ($p < 0.001$), awareness of exclusive breastfeeding recommendations ($p = 0.005$), and uptake of couple HIV counselling and testing ($p < 0.001$). These findings demonstrate that a context-specific, structured, facility-based intervention model can effectively enhance male partner involvement in MNCH and contribute to improved maternal and infant health outcomes. This study recommends that the National and County governments should consider adapting the intervention model to promote MPI in MNCH services.

CHAPTER ONE

INTRODUCTION

1.1 Background Information

The adoption of the Sustainable Development Goals (SDGs) in 2015 by the United Nations marked a significant global commitment to improving health and development outcomes across all countries. Among these goals, SDG 3 aims to ensure healthy lives and promote well-being for all at all ages. Within this framework, SDG 3.1 targets the reduction of the global maternal mortality ratio (MMR) to less than 70 per 100,000 live births by 2030, while SDG 3.7 emphasizes universal access to sexual and reproductive health-care services, including family planning, information, and education (United Nations, 2020; World Health Organization, 2023).

Despite these global commitments and increased investment in maternal health programs, maternal mortality remains a persistent and preventable public health challenge. Recent global estimates indicate that approximately 287,000 women die annually due to pregnancy and childbirth-related complications, with the vast majority occurring in low- and middle-income countries (WHO et al., 2023). Sub-Saharan Africa alone contributes nearly 70% of these deaths, reflecting deep regional inequalities in health systems capacity, access to skilled care, and socio-economic development (WHO et al., 2023). The maternal mortality ratio in the region remains the highest globally, with several countries reporting rates exceeding 500 deaths per 100,000 live births, compared to a global average of approximately 223 per 100,000 live births (WHO et al., 2023).

These disparities are not merely medical but are strongly shaped by structural determinants such as poverty, education, gender inequality, and geographic access to care (Say et al., 2023). Health system limitations, including shortages of skilled health workers, weak referral systems, and inadequate emergency obstetric care, further compound the problem. Importantly, delays in decision-making, reaching health facilities, and receiving adequate care conceptualized in the Three Delays Model

continue to explain a large proportion of maternal deaths in low-resource settings (Thaddeus & Maine, 1994).

In Kenya, maternal mortality remains a major public health concern despite notable improvements in reproductive health indicators over the past decade. The maternal mortality ratio is estimated at approximately 530 per 100,000 live births (KNBS & ICF, 2023; WHO, 2023). While there has been an increase in antenatal care attendance and institutional deliveries, these gains have not translated proportionately into reductions in maternal deaths, suggesting persistent gaps in quality of care rather than utilization alone.

Regional disparities within Kenya remain pronounced. Rural and marginalized counties experience significantly higher maternal mortality due to limited access to emergency obstetric services, long travel distances to health facilities, and inadequate referral systems. Urban areas, although better resourced, also experience inequities linked to informal settlements, overcrowding, and health system strain. These inequalities highlight the uneven distribution of maternal health services across populations (Ministry of Health Kenya, 2021).

The leading causes of maternal mortality in Kenya include postpartum haemorrhage, hypertensive disorders of pregnancy, sepsis, obstructed labour, and complications from unsafe abortion (WHO, 2023; UNICEF, 2022). Most of these causes are preventable through timely access to skilled birth attendance and emergency obstetric care. However, persistent delays in seeking care, reaching health facilities, and receiving appropriate treatment remain significant contributors to maternal deaths.

Given these persistent challenges, global and national health strategies increasingly emphasize the need to address not only clinical care but also behavioural, social, and household-level determinants of maternal health. One of the most widely promoted strategies in recent years is male partner involvement in maternal, newborn, and child health (MNCH) services (Comrie-Thomson et al., 2020; WHO, 2021). This approach recognizes that maternal health outcomes are not solely determined by women's actions but are significantly influenced by household decision-making dynamics.

Male partner involvement refers to the active engagement of men in supporting their partners during pregnancy, childbirth, and the postpartum period. This includes accompanying women to antenatal care visits, participating in birth preparedness and complication planning, providing financial and emotional support, and engaging in reproductive health discussions (Ditekemena et al., 2020; Tokhi et al., 2021). Increasingly, male involvement is conceptualized within gender-transformative frameworks that aim to challenge harmful gender norms and promote shared responsibility in reproductive health (Dworkin et al., 2015; UNFPA, 2022).

The rationale for male involvement is grounded in the recognition that men often play a dominant role in household decision-making, particularly in patriarchal societies. In many Sub-Saharan African settings, including Kenya, men control financial resources and influence critical decisions regarding healthcare access and utilization (Aborigo et al., 2020; Comrie-Thomson et al., 2020). As a result, women's ability to seek timely maternal healthcare is often dependent on male approval or support.

Empirical evidence increasingly demonstrates the positive effects of male partner involvement on maternal and neonatal health outcomes. Systematic reviews show that male participation is associated with increased uptake of skilled birth attendance, improved antenatal care attendance, and better birth preparedness practices (Tokhi et al., 2021). Multi-country studies in Sub-Saharan Africa further indicate that women whose partners are involved in ANC are more likely to deliver in health facilities and receive timely obstetric care (Yargawa & Leonardi-Bee, 2022).

Beyond maternal health outcomes, male involvement also contributes to improved reproductive health more broadly. Evidence from recent East African studies shows that male engagement interventions increase contraceptive uptake and improve communication between partners regarding family planning (Kriel et al., 2023). This suggests that male involvement plays a wider role in strengthening household reproductive autonomy and shared decision-making.

Male involvement is also critical in HIV prevention and treatment contexts. Couple-based HIV testing has been shown to increase uptake of prevention of mother-to-child transmission (PMTCT) services and improve adherence to antiretroviral therapy

among pregnant women (UNAIDS, 2022; Ditekemena et al., 2020). In high HIV burden countries such as Kenya, integrating male partners into antenatal services contributes to early diagnosis, linkage to care, and improved maternal and infant outcomes.

Despite these benefits, male involvement in maternal health remains low across many LMICs. Global evidence indicates significant variation in male participation in antenatal care, with Sub-Saharan Africa consistently reporting lower rates compared to high-income regions (Bishwajit et al., 2020). Recent regional analyses suggest that in many African settings, male involvement remains below 50%, reflecting deep structural and cultural constraints (Moyo et al., 2024).

In Kenya, male involvement levels remain inconsistent and geographically variable. Studies in Eastern Kenya report involvement as low as 23%, while Western Kenya reports levels of up to 54% (Nyamai et al., 2022; Nyang'au et al., 2021). Coastal regions often show even lower levels of active participation, with men primarily contributing financially rather than physically accompanying their partners to health facilities (Onchong'a et al., 2020).

Several interrelated barriers explain the low levels of male involvement. Socio-cultural norms remain one of the most significant constraints. Pregnancy and childbirth are often culturally constructed as women's responsibilities, and male attendance at antenatal clinics may be stigmatized or viewed as inappropriate (Moyo et al., 2024; WHO, 2021). These deeply rooted gender norms influence behaviour across generations and are resistant to change without targeted interventions.

Economic constraints further limit male participation. Many men in LMICs are engaged in informal employment or daily wage labour, where taking time off work results in lost income. The opportunity cost of attending antenatal visits therefore discourages consistent involvement (UNFPA, 2022).

Health system barriers also play a significant role. These include long waiting times, overcrowded facilities, lack of privacy, and absence of male-friendly service delivery models (WHO, 2023). In many cases, maternal health services are structured primarily

for women, resulting in the exclusion or marginalization of male partners. Negative attitudes from healthcare providers further discourage male participation (Ditekemena et al., 2020).

At the individual level, limited knowledge and awareness of the importance of male involvement remain key challenges. Many men are unaware of their role in maternal health or the potential benefits of their participation, resulting in low motivation to engage (Comrie-Thomson et al., 2020).

Conversely, several facilitators of male involvement have been identified. These include targeted health education, community sensitization, couple-based antenatal care, and flexible service delivery hours (WHO, 2021). Structured interventions such as invitation letters for male partners and community outreach programs have also been shown to improve participation (Ditekemena et al., 2020).

Healthcare worker attitudes are also critical. Positive, respectful, and inclusive interactions encourage male participation, while negative experiences discourage engagement (UNICEF, 2022). Training health workers on gender-sensitive and couple-friendly service delivery has therefore been recommended.

Global health agencies increasingly advocate for gender-transformative approaches that actively engage men while promoting women's autonomy and rights (WHO, 2023; UNFPA, 2022). These approaches aim to address structural gender inequalities and promote shared decision-making within households rather than reinforcing male dominance.

In Kenya, policy frameworks such as the RMNCAH Strategy (2019–2023) emphasize male involvement as a key strategy for improving maternal and newborn health outcomes (Ministry of Health Kenya, 2021). Community health strategies and outreach programs further aim to promote male engagement at the grassroots level. However, implementation challenges persist due to limited financial resources, inadequate staffing, and weak health system infrastructure (WHO, 2023). Cultural norms and entrenched gender roles further slow behavioural change, requiring long-term community engagement strategies.

From a theoretical perspective, male involvement can be understood through the Social Ecological Model, which emphasizes multiple levels of influence on behaviour, including individual, interpersonal, community, organizational, and policy levels (McLeroy et al., 1988). The Health Belief Model also provides insight into how perceptions of risk, severity, benefits, and barriers influence health behaviour (Glanz et al., 2015). These frameworks collectively highlight the need for multi-level interventions rather than single-level solutions.

Emerging evidence also emphasizes the importance of integrating male involvement into broader health system strengthening initiatives. Health systems in LMICs continue to face workforce shortages, infrastructure constraints, and quality-of-care challenges (Kruk et al., 2018). Without addressing these systemic issues, increased male participation may not translate into improved maternal health outcomes.

Gender norms remain a central determinant of male behaviour. Traditional constructions of masculinity often position men as financial providers rather than caregivers, limiting emotional or direct involvement in reproductive health (Connell & Messerschmidt, 2005). Gender-transformative interventions have shown greater effectiveness in shifting these norms compared to traditional awareness-based approaches (Dworkin et al., 2015).

The concept of male-friendly health services has also emerged as an important strategy. These include creating welcoming environments, reducing waiting times, and ensuring privacy for couples. Evidence suggests that when men feel included in healthcare settings, their participation increases significantly (Ganle & Dery, 2015).

Digital health innovations also offer promising opportunities. Mobile health (mHealth) interventions such as SMS reminders and mobile education platforms have been shown to improve knowledge and increase male participation in maternal health services (Lee et al., 2016; Sondaal et al., 2016). In Kenya, high mobile phone penetration makes such interventions particularly scalable.

Male involvement is also closely linked to birth preparedness and complication readiness (BPCR), which involves planning for normal birth and emergencies,

including saving money, identifying transport, and selecting health facilities (Orwa et al., 2020). Male participation in BPCR reduces delays in accessing care, which is a major contributor to maternal mortality (Thaddeus & Maine, 1994).

Additionally, male involvement contributes to improved maternal mental health outcomes by providing emotional support and reducing stress during pregnancy (Yargawa & Leonardi-Bee, 2022). This is particularly important in settings where formal mental health services are limited.

However, concerns have been raised that poorly implemented male involvement interventions may reinforce male dominance and limit women's autonomy (Doyle et al., 2018). This highlights the importance of ensuring that interventions are designed in a way that promotes equity and shared decision-making.

Community engagement remains critical for sustaining male involvement. Community health volunteers play an essential role in health education and mobilization (Ministry of Health Kenya, 2020). Religious and cultural leaders also influence community acceptance and should be actively involved in intervention design and implementation (Sialubanje et al., 2015).

Policy implementation gaps remain a major challenge. While policies exist, many lack clear operational guidelines, measurable indicators, and accountability mechanisms for male involvement (Ditekemena et al., 2020). Strengthening monitoring systems is therefore essential.

Finally, sustainability remains a concern, as many interventions are donor-funded and short-term. Long-term integration into national health systems is necessary for sustained impact.

In conclusion, male partner involvement in maternal health is a complex, multi-dimensional intervention influenced by social, cultural, economic, and health system factors. While evidence demonstrates its potential to improve maternal and neonatal outcomes, achieving sustained engagement requires comprehensive, gender-

transformative, and system-strengthening approaches aligned with national policies and SDG 3 targets.

1.2 Problem Statement

Despite global recognition that male partner involvement contributes significantly to improved maternal and neonatal health outcomes, levels of male participation remain consistently low, particularly in sub-Saharan Africa. While countries in Europe and Asia report male involvement rates often above 40%, African nations such as Uganda and Kenya continue to experience lower levels, with engagement rates falling below 55% (Rahman et al., 2018; Bishwajit et al., 2017; Teshale et al., 2025). The Kenya Demographic and Health Survey revealed that although 95% of men were aware of their partners' antenatal care attendance, only 55% reported active involvement in any component of maternal health (National Bureau of Statistics Nairobi, 2023).

Barriers to male involvement are multifaceted, encompassing individual, socio-cultural, and systemic factors. These include limited awareness, entrenched gender norms, lack of targeted health information, unavailability of male-specific service providers, and unfriendly or inaccessible health systems (National Bureau of Statistics Nairobi, 2023; Muthiru & Bukachi, 2024; National Council for Population and Development & Ministry of State for Planning, 2014). Additionally, logistical challenges such as long waiting times and slow service delivery continue to deter male participation (KNCPD, 2014). Beyond these factors, structural and policy-level barriers remain a significant impediment. While national policies acknowledge the importance of male engagement, they often fall short in providing clear, actionable strategies for implementation. As a result, many men remain uncertain about their roles in sexual and reproductive health (SRH), how they can meaningfully engage, and what services are available to support their involvement.

Lusambili et al., (2021) highlight that male involvement remains constrained by weak institutional frameworks, inadequate integration of men into RMNCH (Reproductive, Maternal, Newborn, and Child Health) programs, and the absence of male-friendly services within health facilities. These systemic gaps in policy design and health service delivery continue to undermine efforts to increase male participation and limit

the overall effectiveness of maternal and reproductive health initiatives. Addressing these challenges is therefore critical to advancing gender-equitable healthcare and improving maternal and neonatal outcomes in Kenya and similar settings.

1.3 Study Justification

Previous studies conducted in different countries have identified both the benefits and challenges associated with male involvement in maternal and child health (MCH) services (Ganle & Dery, 2015; Yargawa & Leonardi-Bee, 2022). Evidence has shown that male involvement contributes to improved antenatal care attendance, increased skilled birth attendance, improved HIV testing uptake, enhanced birth preparedness, and better maternal and neonatal outcomes. Despite these benefits, male participation in maternal and newborn health services remains low in many low- and middle-income countries, including Kenya.

Several interventions aimed at improving male involvement have been implemented globally with varying levels of success. Facility-based and community-based interventions such as invitation letters, community mobilization, health education, and couple-focused counselling have demonstrated improvement in male participation in maternal health services (Davis et al., 2013; Tokhi et al., 2018). For instance, community mobilization and culturally tailored education interventions increased male attendance at antenatal clinics and improved communication between couples regarding maternal health decisions. However, some interventions also reported challenges including low male response rates, socio-cultural resistance, increased gender power imbalance, and poor sustainability after implementation. Tokhi et al. (2018) emphasized the need for carefully designed interventions that are context-specific and sensitive to couple relationship dynamics to avoid unintended negative consequences.

In Kenya, evidence suggests that male involvement in maternal and child health remains suboptimal despite policy recommendations encouraging male participation. A qualitative study conducted at Kiambu Level 5 Hospital by Kiogora (2016) revealed that gender roles, limited knowledge on family planning, poor spousal communication, socio-economic status, and religious beliefs significantly influenced male involvement

in reproductive health services. The study further noted that married men had rarely been targeted in family planning project activities. Similarly, Francis et al. (2018) found that male partners' knowledge and awareness regarding maternal and child health services significantly influenced their participation in such programmes. Health system barriers including negative staff attitudes, long waiting times, and shortage of healthcare providers were also identified as significant factors limiting male involvement in maternal health care in Kiambu County (Mbua et al., 2018).

Although previous studies identified barriers and facilitators of male involvement, few studies in Kenya had designed, implemented, and evaluated structured facility-based intervention models aimed at addressing these barriers. Existing interventions were often fragmented, community-specific, or lacked rigorous evaluation for effectiveness within routine maternal and newborn health services. There was therefore a need for an evidence-based and contextually appropriate intervention model that could be integrated within health facility settings to improve male partner participation during pregnancy and the immediate postpartum period.

Enhancing male involvement in maternal and newborn health is also essential for achievement of global and national health development goals. The study contributes to Sustainable Development Goal (SDG) 3, which aims to ensure healthy lives and promote well-being for all by reducing maternal and neonatal mortality through improved access to quality maternal health services. Increased male involvement has been associated with improved utilization of antenatal care, skilled delivery services, HIV testing, and birth preparedness, which are critical indicators for improving maternal and newborn health outcomes. Additionally, the study aligns with Kenya's development agenda, including Kenya Vision 2030 and national reproductive, maternal, newborn, child and adolescent health (RMNCAH) strategies, which emphasize family-centered approaches, community participation, and strengthening health systems to improve maternal and child health outcomes.

This study therefore sought to design and implement a facility-based intervention model aimed at promoting male involvement in maternal and newborn health services.

The intervention was evaluated for effectiveness by determining its influence on male partner participation during pregnancy and the immediate postpartum period.

1.4 Study Significance

The purpose of the study was to determine the barriers and facilitators to male partner involvement in maternal and newborn health with a resultant development of a model intervention which was implemented and evaluated for its effectiveness in promoting male partner involvement in maternal and newborn health services. Consequently, the National and County governments in Kenya should consider formulating policies and guidelines that support the adoption of this model in public health facilities. This is expected to result in improved male partner involvement in MNCH services and consequently better maternal and neonatal health outcomes.

In addition, the findings of this study may provide evidence to health care providers and programme implementers on effective strategies for integrating male partners into maternal and newborn health care. The study may also contribute to strengthening couple-centered antenatal and postnatal care approaches through promotion of male-friendly reproductive health services. Further, the intervention model may be used by health facilities, non-governmental organizations and development partners in designing community-based and facility-based programmes aimed at improving male participation in MNCH services.

The study may further contribute to increased uptake of key maternal and newborn health services such as antenatal care attendance, skilled birth attendance, PMTCT services, family planning utilization and exclusive breastfeeding practices. Enhanced male involvement may also improve shared decision-making within households, birth preparedness and support for women during pregnancy, childbirth and the postnatal period.

Academically, the study may add to the existing body of knowledge on male involvement in maternal and newborn health, particularly in low-resource settings. The findings may also provide baseline information for future researchers interested in male participation, reproductive health interventions and maternal-child health

outcomes. Furthermore, the validated intervention model may serve as a reference framework for future studies seeking to design and evaluate similar male involvement interventions in Kenya and other comparable settings.

1.5 Research Questions

The research sought to answer the following questions:

1. What are the factors contributing to low male partner involvement in maternal, and neonatal health services in a public health facility, Kiambu County?
2. What intervention model can effectively promote male partner involvement in maternal and neonatal health in a public health facility, Kiambu County?
3. What is the effect of a facility-based intervention model on the level of male partner involvement in maternal and neonatal health in a public health facility, Kiambu County?
4. What are the effects of a facility-based intervention model on maternal and neonatal health outcomes in a public health facility, Kiambu County?

1.6 Broad Objective

To evaluate the effectiveness of a facility-based intervention model in promoting male partner involvement in maternal and neonatal health at a public health facility, Kiambu County.

1.7 Specific Objectives

1. To explore factors contributing to low male partner involvement in maternal and neonatal health in a public health facility, Kiambu County.
2. To design an intervention model for promoting male partner involvement in maternal and neonatal health in a public health facility, Kiambu County.

3. To evaluate the effect of a facility-based intervention model on the level of male partner involvement in maternal and neonatal health in a public health facility, Kiambu County.
4. To evaluate the effects of a facility-based intervention programme on maternal and neonatal health outcomes in a public health facility, Kiambu County

1.8 Hypotheses

1. Null Hypothesis (H_{01}): A facility-based intervention programme does not increase the level of male partner involvement in maternal and neonatal health in a public health facility in Kiambu County.

Alternative Hypothesis (H_{a1}): A facility-based intervention programme increases the level of male partner involvement in maternal and neonatal health in a public health facility in Kiambu County.

2. Null Hypothesis (H_{02}): A facility-based intervention programme does not improve maternal and neonatal health outcomes in a public health facility in Kiambu County.

Alternative Hypothesis (H_{a2}): A facility-based intervention programme improves maternal and neonatal health outcomes in a public health facility in Kiambu County.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews literature on various aspects of male involvement globally. It addresses various definitions; measures, level, and the benefits of male involvement as well as strategies used to improve male involvement in maternal and newborn health. The author concludes with a summary of key findings in the literature.

2.2 Literature Search Strategy

The literature search was conducted using electronic databases including PubMed, Google Scholar, CINAHL, Scopus, Web of Science, and African Journals Online (AJOL), as well as manual searches of reference lists from relevant studies. The search utilized combinations of keywords and Boolean operators such as: “male partner involvement,” “male participation,” “maternal and neonatal health,” “maternal health,” “facility-based intervention,” “antenatal care,” “postnatal care,” “newborn health,” “Kenya,” and “Sub-Saharan Africa.” Example search strings included: (“male partner involvement” OR “male participation”) AND (“maternal and neonatal health” OR MNCH) AND (“facility-based intervention”) AND (“antenatal care” OR “postnatal care”).

The literature search yielded a total of 1,278 records from electronic databases and manual searches. After removal of duplicate records, 1,030 articles remained for title and abstract screening. A total of 842 studies were excluded because they did not meet the inclusion criteria such as publication of less than 10 years. Only historical and foundational literature review were retained. Full-text assessment was conducted for 188 articles, of which 132 were excluded for reasons including lack of intervention focus, insufficient outcome data, and non-relevance to maternal and neonatal health. Finally, 95 studies met the eligibility criteria and were included in the review, corresponding to the references cited in the study.

2.3 Background to Maternal, Neonatal and Child Health (MNCH)

Maternal, neonatal and child health (MNCH) remains a central priority in global public health due to its direct impact on population health, human development, and socioeconomic progress. MNCH encompasses the health of women during pregnancy, childbirth, and the postpartum period, as well as the survival, growth, and development of newborns and children under five years of age. Despite significant progress over the past three decades, preventable maternal and child deaths continue to pose a major global challenge, particularly in low- and middle-income countries (World Health Organization [WHO], 2023; United Nations Children's Fund [UNICEF], 2023).

Globally, substantial reductions in maternal and child mortality have been achieved since 1990, largely due to improvements in access to essential health services, immunization, nutrition, and disease control programs. However, progress has been uneven, and recent evidence suggests that gains have slowed in many regions. Approximately 4.9 million children died before their fifth birthday in 2024, including about 2.3 million neonatal deaths, with most of these deaths being preventable (WHO, 2024). Similarly, maternal mortality remains unacceptably high, with an estimated 287,000 maternal deaths occurring globally in 2020, many of which could have been avoided with timely and adequate care (WHO, 2023).

2.3.1 Global Burden of Maternal, Neonatal and Child Mortality

Maternal Mortality

Maternal mortality refers to deaths due to complications from pregnancy or childbirth. Although global maternal mortality has declined, it remains a critical issue, particularly in resource-limited settings. Nearly 95% of maternal deaths occur in low- and lower-middle-income countries, with sub-Saharan Africa accounting for the largest proportion (WHO, 2023; UNICEF, 2023). The leading causes of maternal mortality include postpartum hemorrhage, hypertensive disorders such as preeclampsia and eclampsia, sepsis, and complications from unsafe abortions (WHO, 2023). These causes are largely preventable through access to skilled birth attendance, emergency obstetric care, and timely referral systems.

Neonatal Mortality

Neonatal mortality, defined as deaths within the first 28 days of life, accounts for nearly half of all under-five deaths globally. Although neonatal deaths have declined from 5.2 million in 1990 to approximately 2.3 million in recent years, progress has been slower compared to reductions in mortality among older children (WHO, 2023). The main causes of neonatal mortality include preterm birth complications, birth asphyxia, neonatal infections (such as sepsis and pneumonia), and congenital anomalies (WHO, 2023; UNICEF, 2023). These causes are closely linked to the quality of care during pregnancy, childbirth, and the immediate postnatal period.

Child Mortality (Under-Five Mortality)

Under-five mortality has declined significantly from 12.8 million deaths in 1990 to about 4.8 million in 2023 (WHO, 2023). However, preventable deaths remain high, particularly in sub-Saharan Africa and South Asia, which together account for the majority of global child deaths (UNICEF, 2023).

The leading causes of morbidity and mortality among children under five include pneumonia, diarrheal diseases, malaria, and malnutrition (WHO, 2023). Malnutrition is an underlying contributor in nearly half of all under-five deaths, as it increases vulnerability to infections (UNICEF, 2023).

2.3.2 Regional Perspective: Sub-Saharan Africa

Sub-Saharan Africa bears a disproportionate burden of maternal, neonatal, and child mortality. The region accounts for approximately 70% of global maternal deaths and has the highest under-five mortality rates worldwide (WHO, 2023; UNICEF, 2023). Several factors contribute to this high burden, including limited access to quality healthcare services, shortages of skilled health personnel, weak health systems, poverty, and sociocultural barriers to healthcare utilization (WHO, 2022).

2.3.3 Local Context: Kenya

Kenya has made significant progress in reducing maternal and child mortality over the past decades. Under-five mortality declined from 102 deaths per 1,000 live births in 1990 to 43 per 1,000 in 2019 (Kenya National Bureau of Statistics [KNBS] et al., 2022). However, mortality remains high, with thousands of children dying annually from preventable causes. The leading causes of child mortality in Kenya include pneumonia, diarrhea, and neonatal conditions (UNICEF, 2023). Maternal mortality also remains a concern, although improvements in skilled birth attendance and antenatal care utilization have contributed to gradual reductions (KNBS et al., 2022). Disparities persist across regions, with higher mortality rates observed in rural and underserved populations, particularly in northern Kenya and informal urban settlements (KNBS et al., 2022).

2.3.4 Interventions to Reduce Maternal, Neonatal and Child Mortality

A wide range of evidence-based interventions have been implemented globally to reduce maternal, neonatal, and child mortality. These interventions span the continuum of care, from pregnancy through childbirth, the neonatal period, and early childhood. When effectively implemented, they have been shown to significantly reduce preventable deaths and improve overall health outcomes.

Maternal health interventions primarily focus on ensuring safe pregnancy and childbirth. Antenatal care (ANC) plays a critical role in monitoring the health of both the mother and the fetus, allowing for early detection and management of potential complications. Skilled birth attendance is another essential component, as deliveries conducted by trained health professionals significantly reduce the risk of maternal mortality. In addition, access to emergency obstetric care (EmONC) is vital for managing life-threatening complications such as hemorrhage, obstructed labor, and hypertensive disorders. Postnatal care further contributes to maternal survival by enabling early identification and treatment of complications that may arise after delivery. Collectively, these interventions have been shown to substantially reduce maternal deaths when implemented effectively (World Health Organization [WHO], 2023).

Similarly, neonatal health interventions target the critical first 28 days of life, a period during which the risk of mortality is highest. Early initiation of breastfeeding is essential for providing newborns with vital nutrients and antibodies that enhance immunity. Thermal care, including practices such as kangaroo mother care, helps maintain the newborn's body temperature and is particularly beneficial for preterm and low birth weight infants. Neonatal resuscitation is crucial for managing birth asphyxia, one of the leading causes of neonatal mortality. In addition, infection prevention and prompt treatment of neonatal infections such as sepsis and pneumonia are critical in improving survival outcomes. These interventions directly address the leading causes of neonatal mortality and have been widely promoted in global health strategies (United Nations Children's Fund [UNICEF], 2023).

Child health interventions also play a fundamental role in reducing morbidity and mortality among children under five years of age. Immunization remains one of the most cost-effective public health interventions, protecting children against vaccine-preventable diseases such as measles, polio, and pneumonia. The Integrated Management of Childhood Illness (IMCI) strategy provides a comprehensive approach to diagnosing and treating common childhood illnesses, thereby improving child survival. Nutrition programs, including the promotion of exclusive breastfeeding and the management of acute malnutrition, are essential for enhancing child growth and resilience against infections. Water, sanitation, and hygiene (WASH) interventions further contribute to reducing the burden of diarrheal diseases, while malaria prevention strategies, such as the use of insecticide-treated nets, help lower malaria-related morbidity and mortality. Collectively, these interventions have significantly contributed to reductions in under-five mortality, with immunization alone preventing millions of deaths annually (WHO, 2023).

In addition to specific clinical and public health interventions, strengthening health systems is critical for achieving sustainable improvements in maternal, neonatal, and child health outcomes. Effective health systems require adequate financing to ensure the availability of essential services, a skilled and motivated workforce to deliver quality care, and functional referral systems to manage complications appropriately. Global initiatives such as Every Woman Every Newborn Everywhere strategy have

emphasized the importance of improving the quality of care and ensuring equitable access to services for all populations (WHO, 2023).

Despite the availability of these effective interventions, several challenges continue to hinder progress in improving MNCH outcomes. Inequitable access to healthcare services remains a significant barrier, particularly among rural and marginalized populations. Weak health systems, characterized by shortages of skilled personnel and limited resources, further constrain service delivery. Sociocultural factors, including gender norms and health-seeking behaviors, also influence the utilization of maternal and child health services. Additionally, emerging issues such as vaccine hesitancy have begun to undermine the success of immunization programs. These challenges highlight the need for comprehensive and context-specific strategies to address both health system limitations and broader social determinants of health (WHO, 2022). Male partner involvement is increasingly recognized as a key determinant of MNCH outcome.

2.4 Male Involvement in Maternal and Neonatal Health

2.4.1 The Meaning of Male Involvement in Maternal and Neonatal Health

Male involvement in maternal and neonatal health has been conceptualized in different ways across time, settings, and disciplines, reflecting its multidimensional and evolving nature. Traditionally, male involvement was narrowly defined in terms of physical presence during antenatal care (ANC) visits or childbirth. However, contemporary literature has expanded this definition to include emotional, financial, informational, and decision-making dimensions of support.

Yargawa and Leonardi-Bee (2022) define male involvement as active participation in maternal health services and care through a husband's presence during antenatal care (ANC) visits and delivery, provision of support to the wife during pregnancy, childbirth, and the postpartum period, as well as shared decision-making regarding maternal health. This definition emphasizes both physical participation and collaborative decision-making within the household, highlighting the role of men as partners in reproductive health rather than passive observers.

Similarly, Adeleye et al. (2011) conceptualize male involvement as the engagement of men in supporting women's reproductive health needs, including assisting women to access skilled care during pregnancy, childbirth, and complications, as well as involvement in newborn care, breastfeeding support, and family planning services. This broader definition recognizes that male involvement extends beyond health facility attendance and includes supportive roles that occur within the household and community contexts.

August et al. (2016) further expand the concept by defining male involvement as men escorting their partners to ANC and delivery services, participating in joint decision-making on place of delivery, and attending educational sessions aimed at improving knowledge on pregnancy danger signs, childbirth preparedness, and postpartum care. This definition emphasizes the importance of knowledge acquisition and shared responsibility in improving maternal and neonatal health outcomes.

More recent evidence has further refined the concept by highlighting the importance of gender relations and household dynamics. The World Health Organization (WHO, 2021) emphasizes that male involvement should be understood within the broader framework of gender equality and shared responsibility in reproductive health. WHO highlights that male engagement should promote supportive partnership roles, reduce delays in seeking care, and improve access to skilled maternal health services.

Similarly, the United Nations Population Fund (UNFPA, 2022) underscores that male involvement is not only about participation in health services but also about transforming harmful gender norms that limit women's autonomy in decision-making. According to UNFPA, meaningful male involvement includes emotional support, shared responsibility for reproductive health decisions, and active participation in caregiving roles during pregnancy and postpartum periods.

Voluntary Service Overseas (VSO, 2019) also emphasizes that male involvement requires building positive relationships between men, their partners, and children. According to VSO, men should be encouraged to understand how their attitudes and behaviours influence family health outcomes. This includes promoting open communication, empathy, and participation in household responsibilities, which

collectively contribute to improved maternal and newborn health outcomes. VSO further highlights that men play a critical role beyond decision-making, particularly in providing emotional reassurance and reducing the workload of pregnant women.

Recent systematic reviews have also reinforced the multidimensional nature of male involvement. Comrie-Thomson et al. (2020) and Tokhi et al. (2021) note that male involvement should be conceptualized as a continuum ranging from passive support (such as financial provision) to active engagement (such as joint ANC attendance and shared decision-making). These studies emphasize that male involvement is context-specific and influenced by socio-cultural norms, health system structures, and individual attitudes.

In Sub-Saharan Africa, male involvement is often shaped by traditional gender roles where men are perceived as primary decision-makers and financial providers, while maternal health is viewed as a female domain (Moyo et al., 2024). However, recent studies show that this perception is gradually changing, with increasing recognition of men as key partners in maternal and neonatal health promotion.

2.4.2 Measures of Male Partner Involvement

Measuring male involvement in maternal and neonatal health remains complex due to the lack of standardized indicators and the multidimensional nature of the concept. Byamugisha et al. (2010) noted early that there were no universally accepted criteria for measuring male involvement, leading to variations in how studies define and assess participation.

Ampt et al. (2015) proposed several indicators for measuring male involvement, including attendance at antenatal care (ANC) visits, inter-spousal communication regarding pregnancy and childbirth, and practical support provided during pregnancy. These indicators highlight that male involvement can be both observable (e.g., clinic attendance) and relational (e.g., communication and support).

Building on this, many studies have adopted composite indices to capture the broader dimensions of male involvement. By combining multiple indicators such as financial

support, emotional support, household assistance, and decision-making participation, researchers aim to provide a more comprehensive assessment of male engagement in maternal health (Byamugisha et al., 2010; Ampt et al., 2015).

In the present study context, male involvement was measured using several key domains, including male partner accompaniment to ANC visits, joint decision-making on the choice of place of delivery, participation in household chores, knowledge of infant breastfeeding practices, and awareness of danger signs in pregnancy. Women were asked whether their partners assisted with specific household tasks such as washing, cleaning, cooking, and childcare responsibilities.

Recent literature continues to refine and expand these measurement domains. For example, a study conducted in Nairobi's informal settlements by Muthiru and Bukachi (2024) found that male involvement in maternal and child nutrition was largely defined by financial support, such as providing money for food and healthcare services. However, direct participation in ANC visits remained limited due to work-related constraints and prevailing socio-cultural norms that discourage male presence in maternal health spaces.

Similarly, Nyamai et al. (2022) in Eastern Kenya identified multiple dimensions of male involvement, including physical presence at health facilities, financial support, psychosocial support, and shared decision-making within households. These findings highlight the importance of adopting a multidimensional approach when measuring male involvement, as focusing solely on ANC attendance may underestimate the actual level of engagement.

The World Health Organization (WHO, 2021; 2023) supports the use of broader indicators that capture both behavioural and structural aspects of male involvement, including participation in reproductive health education, couple counselling, and shared decision-making. WHO emphasizes that measuring male involvement should go beyond clinic attendance and include household-level behaviours that contribute to maternal and newborn health outcomes.

The United Nations Children’s Fund (UNICEF, 2022) also highlights the importance of considering contextual factors when measuring male involvement, including cultural norms, economic constraints, and health system readiness. UNICEF notes that in many settings, men contribute significantly through financial support and logistical arrangements even when they are not physically present during ANC visits.

More recent systematic evidence suggests that male involvement should be conceptualized as a spectrum rather than a binary outcome. Rahman et al. (2022) argue that measuring male involvement requires distinguishing between different levels of engagement, ranging from passive financial provision to active participation in health service utilization and caregiving.

In addition, Moyo et al. (2024) emphasize that male involvement indicators should be context-sensitive and adaptable to different cultural and health system environments. They argue that standardized measurement tools must account for variations in gender norms, employment patterns, and accessibility of health services across regions.

Overall, the evolving literature demonstrates that male involvement in maternal and neonatal health is a complex, multidimensional construct that cannot be adequately captured using a single indicator. Instead, it requires a combination of behavioural, relational, and structural measures that reflect the lived realities of couples in different settings. This comprehensive approach ensures more accurate assessment and better informs interventions aimed at improving maternal and neonatal health outcomes.

2.4.3 The Level of Male Partner Involvement in Maternal and Neonatal Health

Male partner involvement in maternal and neonatal health (MNH) services varies significantly across regions, reflecting differences in socio-cultural norms, health system structures, and economic contexts. Globally, high-income countries generally report higher levels of male involvement, particularly in antenatal care (ANC) attendance, birth preparedness, and shared decision-making. In contrast, many low- and middle-income countries (LMICs), particularly in Sub-Saharan Africa, continue to report low and inconsistent levels of male participation in maternal and neonatal health services (WHO, 2021; UNICEF, 2022).

The World Health Organization (WHO, 2021; 2023) emphasizes that male engagement in maternal health is a critical component of improving maternal and neonatal outcomes, yet it remains underutilized in many health systems. Evidence shows that male involvement contributes to increased ANC attendance, improved skilled birth delivery, enhanced postpartum care utilization, and better newborn health practices. However, the extent of involvement remains highly variable and is often limited to financial support rather than active participation in health service utilization (Moyo et al., 2024).

Several studies conducted in Africa consistently report low levels of male involvement in MNH services. For instance, studies by Mohammed et al. (2019), Muheirwe and Nuhu (2019), and Tadesse et al. (2018) demonstrate that although men may be aware of maternal health needs, their active participation in antenatal visits, delivery preparedness, and postnatal care remains limited. These findings suggest that awareness alone does not necessarily translate into behavioural engagement.

In Bangladesh, Bishwajit et al. (2017) assessed male involvement using indicators such as knowledge, awareness, and practice regarding reproductive health. The study found that only 40% of men demonstrated active involvement in their partners' reproductive healthcare. Similarly, Rahman et al. (2018) examined husbands' knowledge and participation in MNH services in rural Bangladesh and found that although two-thirds of husbands were aware of women's reproductive rights during pregnancy and childbirth, only a small proportion could identify multiple danger signs during pregnancy, childbirth, and the postpartum period. In terms of practice, Rahman et al. (2018) further reported that approximately three-quarters of husbands discussed birth preparedness and complication readiness (BPCR) with their spouses. However, only 47% of women were accompanied by their husbands to antenatal care, and about half of the husbands were present during childbirth. These findings highlight a gap between knowledge and actual participation, suggesting that structural and socio-cultural barriers may hinder active male engagement.

Similarly, Mohammed et al. (2019) in Addis Ababa, Ethiopia, reported that 51.4% of men had accompanied their partners to ANC at least once, yet only 23.1% had actually

entered the consultation room. The study further revealed that overall male involvement was low, with 34.8% of couples classified as having poor involvement (defined as participation in two or fewer MNH-related activities). These findings demonstrate that even when men attend health facilities, their involvement may remain passive or symbolic rather than active.

In Uganda, Muheirwe and Nuhu (2019) conducted a case study in Kabale District and found that male participation in maternal and child health services remained low despite community sensitization efforts. The study highlighted persistent cultural norms that position maternal health as a female responsibility, limiting male engagement even when awareness programs are in place. This suggests that information alone may be insufficient to change entrenched gender roles.

In Tanzania, Gibore et al. (2019) conducted a cross-sectional study involving 966 married men and found that only one in five men actively participated in maternal care for their partners. This low level of engagement reflects broader systemic and cultural challenges affecting male involvement in reproductive health services across Sub-Saharan Africa.

Further evidence from Southern Ethiopia by Tadesse et al. (2018) revealed that male participation in birth preparedness and complication readiness was generally poor. Approximately 45% of husbands demonstrated low participation in BPCR activities. Specific findings showed that 49% did not accompany their wives to ANC visits, 59% did not identify a skilled birth attendant, 40% did not plan transportation, and 30% did not save money for emergencies. Only 12% of husbands were considered adequately prepared for childbirth and complications. Importantly, knowledge of danger signs and spousal communication were significantly associated with higher levels of involvement. Similarly, August et al. (2015) in rural Uganda assessed men's knowledge of obstetric danger signs and their preparedness for childbirth. The study found that although 53% of men could identify at least one danger sign during pregnancy, knowledge levels during delivery (43.9%) and postpartum periods (34.6%) were relatively low. Overall, only 12% of men were adequately prepared for childbirth. The study further showed that knowledge of danger signs was positively associated

with birth preparedness, indicating that awareness plays a key role in influencing involvement.

More recent studies continue to confirm these patterns while also highlighting contextual variations. For example, Nyamai et al. (2022) in Eastern Kenya found that male involvement in antenatal care and maternal health services remains limited, with participation influenced by cultural norms, economic constraints, and health system barriers. Similarly, Nyang'au et al. (2021) in Western Kenya reported moderate male involvement (approximately 54%), suggesting regional variation within the same country.

A study conducted in Nairobi informal settlements by Muthiru and Bukachi (2024) further demonstrated that male involvement in maternal and child health is often defined in financial terms, such as providing money for food, transport, and medical expenses. However, physical participation in ANC visits was limited due to work-related constraints and societal expectations that discourage men from attending maternal health services. This reinforces the idea that male involvement is often reduced to financial provision rather than holistic engagement.

In Tanzania, Greenspan et al. (2019) examined men's roles in maternal and newborn care-seeking behavior and found that men often play a central role in decision-making regarding whether and when women seek care. Men also reported facilitating access to healthcare by arranging transport, accompanying partners to health facilities, purchasing medical supplies, and acting as advocates within health systems. Despite this, the study also noted that male involvement is not consistently supported or integrated into maternal health programs, resulting in missed opportunities for improving outcomes.

A Kenyan study conducted in a level five public hospital by Onchong'a et al. (2017) reported that only 40.6% of male partners were involved in decision-making regarding place of delivery. This low level of involvement reflects broader systemic issues, including limited male-friendly services in maternal health facilities and cultural perceptions that exclude men from reproductive health spaces.

Recent global evidence reinforces these findings. The WHO (2021; 2023) emphasizes that male involvement should be promoted through gender-transformative approaches that encourage shared decision-making and equitable participation in reproductive health. UNICEF (2022) further highlights that male engagement is essential for improving maternal health outcomes but must be supported through health system reforms, including male-friendly services and community-level interventions.

Systematic reviews by Comrie-Thomson et al. (2020) and Tokhi et al. (2021) confirm that male involvement interventions can improve maternal and neonatal health outcomes, particularly when they include couple-based education, community engagement, and health system strengthening. However, they also note that many interventions fail to achieve sustained behavioural change due to persistent socio-cultural barriers.

Moyo et al. (2024) further emphasize that male involvement in Sub-Saharan Africa is shaped by structural inequalities, gender norms, and limited health system responsiveness. The authors argue that male involvement should be understood as a continuum ranging from passive financial support to active engagement in health services and caregiving roles.

Overall, the literature demonstrates that male involvement in maternal and neonatal health remains low in many LMICs, despite its recognized importance. While men often play key roles in financial provision and decision-making, their active participation in antenatal care, delivery, and postnatal services remains limited. This gap is influenced by socio-cultural norms, economic constraints, and health system barriers. Addressing these challenges requires multi-level interventions that promote gender equality, strengthen health systems, and encourage shared responsibility in maternal and neonatal health.

2.4.4 Effects of Male Partner Involvement in Maternal and Neonatal Health

Male partner involvement in maternal, reproductive, and newborn health (MRNH) has increasingly been recognized as a key determinant of positive health outcomes for women, newborns, and families. Over the past decade, evidence has consistently

demonstrated that engaging men in maternal health services improves service utilization, enhances health-seeking behaviors, and contributes to better maternal and neonatal outcomes (Fletcher et al., 2024; Gage et al., 2022; WHO, 2023). This growing body of literature reflects a shift from viewing maternal health as solely a woman's responsibility to a more inclusive, couple-centered approach that promotes shared responsibility in reproductive health.

One of the most widely documented benefits of male involvement is the increased utilization of antenatal care (ANC) services. Studies consistently show that women are more likely to initiate ANC early, attend the recommended number of visits, and adhere to maternal health advice when supported by their partners (Gage et al., 2022; Natai et al., 2020; Mohammed et al., 2019). Male involvement provides both emotional encouragement and practical support, such as transportation and financial assistance, which reduces barriers to accessing healthcare services.

In a study conducted in Eastern Kenya, Nyamai et al. (2022) found that male support during pregnancy was significantly associated with increased ANC attendance and improved birth preparedness. The study highlighted that men who were informed about pregnancy care and actively engaged in ANC processes contributed to better maternal health-seeking behaviours. This included encouraging early booking, ensuring adherence to scheduled visits, and supporting facility-based delivery plans. The findings emphasize that male engagement plays a critical role in strengthening continuity of maternal care.

Similarly, Ampt et al. (2015), in a qualitative study conducted in rural Mozambique, identified several dimensions of male involvement that positively influenced maternal health service utilization. These included inter-spousal communication, accompaniment to ANC visits, emotional support, and financial provision. The study concluded that male involvement not only improved access to maternal health services but also helped challenge restrictive gender norms that often limit women's autonomy in seeking care. In particular, improved communication between partners was found to enhance mutual understanding and joint decision-making regarding pregnancy care.

Mohammed et al. (2019) further support these findings in their study conducted in Ethiopia, which showed that male involvement significantly contributed to timely initiation of ANC, increased likelihood of skilled birth attendance, and improved maternal knowledge of obstetric danger signs. The study emphasized that men who participated in household health decisions were more likely to support facility-based delivery and emergency care seeking. This demonstrates that male involvement influences not only service uptake but also critical decision-making during pregnancy and childbirth.

Systematic reviews provide even stronger evidence of the benefits of male engagement. Tokhi et al. (2021) conducted a comprehensive review of male involvement interventions and found that such interventions were associated with significant increases in ANC attendance, skilled birth attendance, and facility-based deliveries. The review highlighted that interventions promoting couple communication, community education, and male-friendly health services were particularly effective in improving maternal health outcomes. These findings reinforce the importance of integrating men into maternal health programs rather than treating them as peripheral actors.

Similarly, Comrie-Thomson et al. (2020) found that male involvement interventions in low- and middle-income countries (LMICs) led to improved maternal healthcare utilization and increased uptake of preventive services. The authors emphasized that male engagement contributes to reducing delays in decision-making (first delay) and improving timely access to healthcare facilities (second delay), both of which are critical in preventing maternal deaths.

Beyond antenatal care, male involvement has been shown to significantly improve skilled birth attendance and facility-based deliveries. Yargawa and Leonardi-Bee (2022), in a meta-analysis of studies from LMICs, reported that male involvement was associated with reduced maternal morbidity and mortality and improved uptake of emergency obstetric care. The study highlighted that when men are actively involved, they are more likely to recognize danger signs, facilitate timely referrals, and support rapid decision-making during obstetric emergencies.

More recent global evidence supports these findings. The World Health Organization (WHO, 2023) emphasizes that male engagement contributes to improved birth preparedness, increased institutional deliveries, and better maternal survival outcomes. WHO further notes that male involvement strengthens health system responsiveness by improving communication between families and healthcare providers.

The benefits of male involvement also extend to neonatal and infant health outcomes. Fletcher et al. (2024) and Rahman et al. (2018) highlight that paternal involvement during pregnancy and the postnatal period is positively associated with improved newborn care practices, including early initiation of breastfeeding, timely immunization, and reduced neonatal complications. In a randomized controlled trial conducted in Bangladesh, Rahman et al. (2018) demonstrated that structured male participation in prenatal counselling significantly improved newborn care behaviours and increased uptake of postnatal services. These findings suggest that male engagement has a direct and measurable impact on child survival and early development.

In addition, male involvement has been associated with improved nutrition outcomes for mothers and infants. Studies show that when men are involved in household decision-making, families are more likely to allocate resources toward nutritious food, healthcare, and child welfare (UNICEF, 2022; Moyo et al., 2024). This is particularly important in low-resource settings where financial constraints often limit access to adequate maternal and child health services.

Another important benefit of male involvement is improved psychosocial support for women during pregnancy and postpartum periods. Emotional support from partners has been linked to reduced maternal stress, lower risk of postpartum depression, and improved maternal mental health outcomes (WHO, 2021). Women who receive support from their partners are more likely to have positive pregnancy experiences and better psychological adjustment during the postpartum period.

Furthermore, male involvement contributes to improved birth preparedness and complication readiness (BPCR). Studies indicate that men who are engaged in maternal health education are more likely to participate in saving money for

emergencies, identifying transport options, and planning for skilled birth attendance (Tadesse et al., 2018; August et al., 2015). These preparatory actions significantly reduce delays in accessing emergency obstetric care and improve maternal and neonatal survival outcomes.

Beyond health outcomes, male involvement plays a significant role in promoting gender equity and strengthening household relationships. Studies show that men who actively participate in maternal health are more likely to engage in shared decision-making, improved communication, and equitable division of household responsibilities (Bagenda et al., 2021; Tokhi et al., 2021). This shift in household dynamics contributes to more supportive environments for women and children, enhancing overall family well-being.

Recent literature also highlights the role of male involvement in transforming harmful gender norms. According to UNFPA (2022), engaging men in reproductive health promotes gender equality by challenging traditional beliefs that position maternal health as solely a woman's responsibility. When men are involved, there is increased recognition of shared responsibility in reproductive health, which contributes to more balanced power dynamics within relationships.

In Kenya and other Sub-Saharan African contexts, studies have shown that male involvement interventions improve communication between couples and increase uptake of maternal health services (Nyamai et al., 2022; Nyang'au et al., 2021). However, the greatest impact is observed when interventions combine community education, health system strengthening, and couple-based approaches.

Systematic evidence from Comrie-Thomson et al. (2020) and Tokhi et al. (2021) further suggests that male involvement is most effective when integrated into broader health system interventions, rather than implemented as standalone programs. This includes training healthcare providers, creating male-friendly health facilities, and promoting community-based awareness campaigns.

Overall, the literature strongly indicates that male involvement in maternal and neonatal health produces multiple interrelated benefits. These include increased

antenatal care utilization, improved skilled birth attendance, enhanced neonatal care practices, better maternal mental health, improved household nutrition, and strengthened gender relations. Importantly, these benefits are most pronounced when male involvement is active, informed, and supported by responsive health systems.

Despite these benefits, the effectiveness of male involvement remains dependent on context-specific factors such as cultural norms, socioeconomic conditions, and health system readiness. Therefore, sustained improvements in maternal and neonatal health require not only encouraging male participation but also addressing structural barriers that limit meaningful engagement.

2.4.5 Determinants of Male Involvement in Maternal and Neonatal Health

Numerous studies have explored the barriers hindering male partner involvement in maternal and newborn health (MNH), revealing a complex and interrelated set of sociocultural, structural, economic, and interpersonal factors. Despite global and national recognition of the importance of male engagement in improving maternal and neonatal outcomes, participation remains low in many low- and middle-income countries (LMICs), particularly in Sub-Saharan Africa (WHO, 2021; Moyo et al., 2024). The persistence of these barriers indicates that male involvement is not only a health issue but also deeply rooted in broader societal structures, gender norms, and health system limitations.

A dominant barrier consistently highlighted in the literature is the influence of entrenched sociocultural norms and gender expectations. In many communities, reproductive health is traditionally viewed as a woman's domain, while men are expected to focus on financial provision and external household responsibilities. As a result, male participation in antenatal care (ANC) or childbirth is often perceived as inappropriate, unnecessary, or even a violation of cultural masculinity norms (Muloongo et al., 2019; Sakala et al., 2021; Teklesilasie & Deressa, 2020). Men who attend ANC clinics may face social ridicule, stigma, or perceptions of weakness, which discourages active participation.

Mapunda et al. (2022) and Bagenda et al. (2021) further emphasize that masculine norms significantly shape men's behaviour in reproductive health contexts. These norms position men as authority figures rather than caregivers, limiting emotional involvement and direct participation in maternal health services. Similarly, Doyle et al. (2018), Manda-Taylor et al. (2017), Muheirwe and Nuhu (2019), and Ongolly and Bukachi (2019) highlight that patriarchal systems continue to reinforce gendered divisions of labour, where maternal health is considered exclusively a woman's responsibility.

Kura et al. (2013) observed that although men often hold decision-making power within households, sexual and reproductive health (SRH) matters—including pregnancy, childbirth, and child-rearing—are largely regarded as women's responsibilities. While some men acknowledge the importance of SRH services, many prioritize social obligations, economic responsibilities, and cultural expectations over participation in maternal health services. In rural contexts, this is further compounded by the limited availability of male-friendly reproductive health services and inadequate training of healthcare providers to effectively engage male partners.

Recent literature continues to reinforce these findings. The World Health Organization (WHO, 2023) notes that gender inequality remains a major barrier to male involvement in maternal health, as health systems and communities often reinforce traditional roles rather than promoting shared responsibility. UNFPA (2022) further emphasizes that harmful gender norms must be addressed through transformative approaches that actively engage both men and women in reproductive health decision-making.

Limited Knowledge and Awareness. Limited knowledge and awareness among male partners have consistently emerged as critical barriers to their involvement in maternal and newborn health. Several studies have highlighted significant information gaps regarding antenatal care (ANC), pregnancy danger signs, newborn care, and the roles men can play in supporting maternal health (Hajian et al., 2022; Okafor et al., 2022; Roudsari et al., 2023). These knowledge gaps often result in low motivation and poor engagement in maternal health services.

Moyo et al. (2024) emphasize that even when men express willingness to participate, exclusion from maternal health education and limited access to reproductive health information significantly reduce their preparedness and involvement. In many health systems, maternal health messaging is primarily directed toward women, leaving men uninformed and disengaged.

This is supported by Sharma et al. (2018), Greenspan et al. (2019), Gibore et al. (2019), and Teklesilasie and Deressa (2020), who all identify inadequate knowledge as a persistent barrier to male involvement in SRH services. Without targeted health education strategies, men remain unaware of the importance of their roles in supporting pregnancy and childbirth.

Kura et al. (2013), in a study conducted in Papua New Guinea, found that although many men had heard about antenatal care, supervised births, family planning, and sexually transmitted infections (STIs) including HIV/AIDS, they lacked understanding of how these services function and their importance in improving maternal and neonatal outcomes. The study also found a strong association between male literacy levels and their knowledge of SRH services, communication with partners, and utilization of reproductive health services.

Similarly, Mekonen et al. (2022) in Ethiopia established that high knowledge of the benefits of antenatal care was positively associated with male involvement in ANC utilization. This indicates that increasing awareness can significantly improve male participation in maternal health services.

Recent systematic reviews by Comrie-Thomson et al. (2020) and Tokhi et al. (2021) further highlight that male-targeted health education interventions significantly improve knowledge levels, communication between partners, and uptake of maternal health services. These findings reinforce the importance of integrating men into reproductive health education programmes.

Health System Barriers. The healthcare system has been widely identified as a critical structural barrier to male involvement in maternal, newborn, and child health (MNCH). Many health facilities are not designed to accommodate men in maternal

health spaces, resulting in exclusion and discomfort among male partners (Lusambili et al., 2021; Morgan et al., 2022). This structural exclusion discourages repeated engagement and reinforces the perception that maternal health services are exclusively for women.

Common health system challenges include long waiting times, rigid clinic schedules, lack of privacy, absence of male waiting areas, and unwelcoming attitudes from healthcare providers (Doyle et al., 2018; Gibore et al., 2019; Maluka & Peneza, 2018; Saah et al., 2019). These factors collectively contribute to poor male engagement in maternal health services.

Roudsari et al. (2023) and Masaba and Mmusi-Phetoe (2020) further highlight that the lack of institutional policies supporting male involvement—such as couple-friendly services, flexible clinic hours, and paternal leave—limits men’s ability to participate meaningfully in reproductive health care.

WHO (2021; 2023) emphasizes that health systems must transition toward male-inclusive models of care, including couple-based antenatal services, improved provider attitudes, and integrated reproductive health education. Without such reforms, structural barriers will continue to undermine male involvement interventions. UNICEF (2022) also notes that weak health system responsiveness contributes significantly to low male participation, particularly in LMICs where maternal health services are already overburdened.

Socio-behavioural and Contextual Barriers. In addition to structural and knowledge-related barriers, socio-behavioural and contextual factors significantly influence male involvement in maternal health. Studies from Uganda and Kenya indicate that competing work responsibilities, lack of interest, and cultural perceptions of gender roles limit men’s participation in antenatal care (Muheirwe & Nuhu, 2019; Ongolly & Bukachi, 2019). Men often report that their exclusion from ANC services is compounded by the fact that they are not explicitly invited to attend appointments. In many cases, maternal health services are not structured to actively include men, reinforcing their marginalization. Recent studies by Nyamai et al. (2022) and Moyo et al. (2024) further highlight that socio-economic pressures and time constraints are

major determinants of male participation. In informal employment settings, men often prioritize income-generating activities over clinic attendance due to economic necessity.

Greenspan et al. (2019) also note that while men play a key role in decision-making regarding healthcare seeking, their involvement is often limited by structural exclusion and lack of formal recognition within health systems.

Economic Barriers. Economic constraints are another significant barrier to male involvement in MNH services. Studies by Masaba and Mmusi-Phetoe (2020) and Morgan et al. (2022) show that low income, transport costs, and job insecurity significantly reduce male attendance at health facilities. Men working in informal sectors often face daily income instability, making it difficult to take time off work for antenatal visits. In many cases, attending ANC may result in loss of income, further discouraging participation. Additionally, indirect costs such as transport, meals, and time spent at health facilities contribute to reduced male engagement. In rural and peri-urban areas, these economic barriers are even more pronounced due to longer travel distances to health facilities. UNFPA (2022) highlights that economic empowerment and flexible workplace policies are essential in enabling male participation in reproductive health services.

Psychosocial and Interpersonal Barriers. Psychosocial and interpersonal factors also play an important role in limiting male involvement in maternal health. Fear of HIV testing, concerns about confidentiality, and lack of trust in health systems have been identified as key barriers (Maluka & Peneza, 2018). Some men also report discomfort in discussing reproductive health issues with healthcare providers or partners, particularly in settings where gender norms discourage open communication about sexuality and pregnancy (Sakala et al., 2021). Roudsari et al. (2023) further emphasize that lack of mutual decision-making within couples significantly reduces male involvement. In relationships where communication is weak or hierarchical, men are less likely to engage in shared reproductive health decisions.

2.4.6 Strategies of Promoting Male partner Involvement Maternal and Neonatal Health

Many countries have implemented a wide range of strategies aimed at improving male partner involvement in antenatal care (ANC), maternal health services, and broader maternal and neonatal health (MNH) programmes. These strategies are grounded in the recognition that male involvement is influenced not only by individual attitudes but also by health system design, community norms, and structural constraints. However, despite the diversity of interventions implemented globally, evidence suggests that only a limited number of these strategies have been rigorously evaluated, thereby limiting the ability to draw strong conclusions on scalability and long-term effectiveness (Peneza & Maluka, 2018; WHO, 2021).

Recent literature indicates that male involvement strategies tend to fall into several broad categories, including facility-based interventions, community-based education, workplace-based interventions, and integrated health system approaches. Tokhi et al. (2018) identified a range of predominantly educational strategies aimed at increasing male participation in maternal health services. These include facility-based couples' education at antenatal clinics, community-based health education targeting both men and women, workplace-based education for expectant fathers, and home-based interventions such as family and community outreach visits. Other approaches include group discussions, public meetings, and improved linkages between communities and health facilities through social mobilisation campaigns targeting husbands, midwives, and community leaders.

Similarly, Davis et al. (2013) highlight that early engagement of boys and men across the life course is essential for sustained behavioural change. Their systematic review emphasizes that interventions implemented in both community and clinical settings, combined with efforts to make health services more father-friendly, are more effective in improving male involvement. These findings suggest that male engagement should not be treated as a single intervention at the point of pregnancy but rather as a continuous process shaped by long-term socialisation and health system responsiveness.

More recent evidence reinforces these earlier findings. Comrie-Thomson et al. (2020) and Tokhi et al. (2021) demonstrate that interventions involving men in structured health education sessions, couple counselling, and community mobilisation significantly improve maternal health service utilisation, including antenatal care attendance and facility-based delivery. These studies further highlight that multi-component interventions tend to be more effective than single-strategy approaches.

Facility-Based Strategies. Facility-based strategies are among the most commonly implemented approaches to increasing male involvement in maternal health services. These include couple-focused antenatal care sessions, invitation of male partners to ANC visits, and provision of joint counselling services. Tokhi et al. (2018) note that facility-based couples' education improves communication between partners and increases awareness of pregnancy-related risks and health service requirements. However, evidence suggests that facility-based strategies alone may not be sufficient to achieve sustained male involvement. WHO (2023) emphasizes that while facility-based interventions are important entry points, they must be supported by broader community and system-level changes. In many settings, health facilities remain poorly equipped to accommodate men, and service delivery models are still primarily women-centered.

In some contexts, innovative facility-based approaches such as fast-tracking couples attending ANC together and providing priority services have been introduced. Peneza and Maluka (2018) report that such strategies were used in Southern Tanzania, where men attending ANC with their partners were given priority services. However, these interventions also had unintended consequences, including resentment among women attending alone and concerns about equity in service delivery. More recent studies in Sub-Saharan Africa confirm that male-friendly health facility design is critical for improving sustained engagement. Lusambili et al. (2021) argue that structural modifications such as creating male waiting spaces, flexible clinic hours, and integrating couple-based services significantly improve male participation in MNH services.

Community-Based Education and Sensitisation. Community-based education remains one of the most widely used strategies for promoting male involvement in maternal health. This includes community health talks, group discussions, door-to-door outreach, and engagement of community leaders and religious institutions. Tokhi et al. (2018) highlight that community-based education targeting both men and women is effective in improving knowledge of pregnancy danger signs, increasing ANC attendance, and improving birth preparedness. Similarly, Comrie-Thomson et al. (2020) note that community-based interventions are particularly effective when they involve peer education and male champions who act as role models within the community. A quasi-experimental study conducted in Tanzania by August et al. (2016) demonstrated the effectiveness of community-based Home-Based Life Saving Skills (HBLSS) training. The intervention, implemented by community health workers, resulted in a significant increase in male involvement from 39.2% to 80.9%, with a net intervention effect of 41.1%. The study also reported improved knowledge of obstetric danger signs, increased accompaniment to ANC and delivery services, and enhanced shared decision-making regarding place of delivery. These findings highlight the effectiveness of community-level interventions in transforming male engagement behaviours. Similarly, WHO (2021) emphasizes that community-based strategies are essential for addressing deep-rooted cultural norms that limit male involvement. Community engagement helps to normalize male participation in reproductive health and reduces stigma associated with men attending maternal health services. Chereni et al. (2022), in a systematic review of Sub-Saharan African studies, further highlight that involving both men and women in the planning, implementation, and evaluation of health programmes leads to positive gender role transformation and improved health outcomes. The authors recommend combining mass education campaigns with community-based interventions to enhance male involvement.

Workplace-Based Interventions. Workplace-based strategies aim to reach men in their places of employment, particularly in contexts where work responsibilities limit their ability to attend health facilities. These interventions include health education sessions conducted at workplaces, distribution of informational materials, and employer-supported leave policies. Davis et al. (2013) emphasize that workplace-based interventions are particularly important for engaging men who may otherwise

be excluded from maternal health programmes due to time constraints. More recent studies suggest that integrating reproductive health education into workplace wellness programmes can significantly improve male awareness and participation in MNH services (UNFPA, 2022). However, workplace-based interventions remain underutilised in many LMICs due to lack of employer engagement and limited policy support for paternal involvement in reproductive health.

Policy and Health System-Level Interventions. Policy-level interventions play a critical role in shaping male involvement in maternal health services. Manda-Taylor et al. (2017) found that policy changes and institutional initiatives in Malawi contributed to increased male participation in maternal and child health services. These included reforms that encouraged male attendance at ANC and promoted couple-based health education. However, policy implementation remains inconsistent across many Sub-Saharan African countries. WHO (2023) emphasizes the need for integrated policies that support male involvement through paternal leave, couple-friendly services, and inclusion of men in reproductive health strategies. UNICEF (2022) also highlights that health system strengthening is essential for sustaining male involvement interventions. Without supportive infrastructure and trained healthcare workers, policy-level interventions may not translate into meaningful behavioural change.

Behavioural and Incentive-Based Strategies. Some health facilities have introduced incentive-based strategies to encourage male involvement. These include offering priority services to couples, providing health commodities or food supplements to women accompanied by their partners, and reducing waiting times for couples attending ANC together. Peneza and Maluka (2018) report that such strategies were implemented in some Tanzanian health facilities, where women attending ANC with their partners received faster service. While these interventions initially improved male attendance, they also raised ethical concerns, particularly when women attending alone were disadvantaged. Recent literature cautions that incentive-based approaches may produce short-term gains but are often unsustainable and may undermine equity in healthcare delivery (Moyo et al., 2024). Sustainable male involvement requires

addressing underlying socio-cultural and structural barriers rather than relying on incentives alone.

Integrated and Multi-Component Strategies. Emerging evidence strongly supports the use of integrated, multi-component strategies to promote male involvement. These approaches combine community education, facility-based services, policy reforms, and health system strengthening. Chereni et al. (2022) argue that combining mass education campaigns with health system interventions targeting both men and women results in more sustainable improvements in male involvement. Similarly, Tokhi et al. (2021) highlight that interventions are most effective when they address multiple levels of influence, including individual knowledge, interpersonal relationships, community norms, and health system factors. WHO (2023) further emphasizes that gender-transformative approaches are essential for long-term change. These approaches aim not only to increase male participation but also to shift underlying gender norms that shape reproductive health behaviours.

Evidence from Kenya and Sub-Saharan Africa. Although limited, anecdotal and empirical evidence from Kenya suggests that some health facilities have implemented strategies such as prioritizing couples at ANC clinics and offering informal incentives to encourage male participation. These strategies have shown some effectiveness in increasing attendance but are often not sustained due to resource constraints and lack of policy support. Nyamai et al. (2022) and Nyang'au et al. (2021) report that male involvement interventions in Kenya have led to moderate improvements in ANC attendance and birth preparedness. However, sustainability remains a major challenge due to inconsistent implementation and lack of integration into routine health services. Moyo et al. (2024) emphasize that in Sub-Saharan Africa, successful male involvement strategies are those that are context-specific, culturally sensitive, and integrated into existing health systems rather than implemented as standalone projects.

2.5 Conclusion

This literature review examined the global status of maternal, neonatal and child health (MNCH) and the role of male partner involvement in maternal and neonatal health (MNH), focusing on its definition, measurement, levels of involvement, benefits,

barriers, and strategies used to enhance participation. Although substantial progress has been made in reducing maternal and child mortality globally, preventable maternal and neonatal deaths remain a major public health concern, particularly in sub-Saharan Africa and Kenya.

The review demonstrates that male involvement is an important determinant of maternal and neonatal health outcomes. Evidence consistently shows that male partner involvement is associated with increased utilization of maternal health services, improved birth preparedness and complication readiness, greater uptake of family planning services, improved adherence to postnatal care, enhanced maternal mental health, and better newborn care practices. These benefits contribute to improved maternal, neonatal, and family health outcomes.

Despite its recognized importance, male involvement remains low in many sub-Saharan African settings. Sociocultural norms, inadequate knowledge among men, health system barriers, economic constraints, and psychosocial factors continue to limit meaningful participation. While various interventions have been implemented to address these challenges, evidence suggests that the most effective approaches are integrated, multi-component, and gender-transformative interventions that address individual, interpersonal, community, and health system factors simultaneously.

Overall, the literature underscores the need for sustainable, culturally sensitive, and health system–integrated strategies to enhance male involvement in maternal and neonatal health while safeguarding women's autonomy and decision-making rights. Strengthening male engagement remains an important strategy for improving maternal and neonatal health outcomes and achieving broader public health goals.

2.6 Gaps Identified in Literature

Several gaps emerge from the reviewed literature. First, there is no universally accepted definition or standardized measurement tool for male involvement in maternal and neonatal health. Existing studies use varying indicators such as antenatal care attendance, HIV testing, financial support, or participation in decision-making,

making comparisons across studies difficult and limiting the evaluation of intervention effectiveness.

Second, most studies focus on isolated dimensions of male involvement and fail to comprehensively assess broader aspects such as emotional support, communication, shared decision-making, birth preparedness, and participation in postnatal and newborn care. Consequently, the multidimensional nature of male involvement remains insufficiently explored.

Third, although numerous studies have documented barriers and determinants of male involvement, relatively few have rigorously evaluated the effectiveness of facility-based interventions designed to increase male participation in maternal and neonatal health services, particularly within the Kenyan context. Available intervention studies are limited in number and often report inconsistent findings regarding their effectiveness and sustainability.

Fourth, existing evidence largely focuses on male involvement as an outcome in itself, with limited assessment of its direct influence on maternal and neonatal health outcomes. There remains inadequate evidence linking specific male involvement interventions to measurable improvements in maternal and neonatal health indicators.

Fifth, many studies have concentrated on individual and sociocultural determinants of male involvement, with less attention given to institutional and health system factors such as service organization, provider attitudes, clinic environments, and male-friendly service delivery approaches that may influence participation.

Finally, there is limited context-specific evidence from Kiambu County and similar settings on the effectiveness of facility-based interventions in promoting male involvement and improving maternal and neonatal health outcomes. This study seeks to address these gaps by evaluating the effect of a facility-based intervention programme on male partner involvement and maternal and neonatal health outcomes in a public health facility in Kiambu County.

2.7 Theoretical Framework

This study was guided by the Andersen and Newman Health Services Utilization Model (Figure 1.1), which explains that utilization of health services is influenced by predisposing, enabling and need factors. The model was considered appropriate for this study because male involvement in maternal and newborn health care is influenced by individual characteristics, health system factors and perceived need for care.

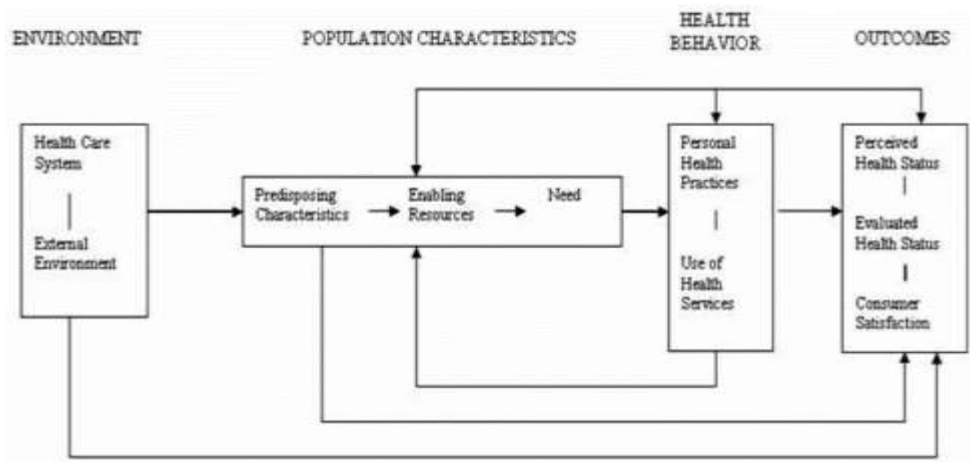


Figure 1.1: Andersen and Newman Framework of Health Services Utilization

: Adopted from Andersen and Newman, (2005)

The purpose of this framework is to discover conditions that either facilitate or impede utilization of health services. The framework was first developed in the 1960s and has since gone through four phases. Developed in the 1990s, the framework below represents the fourth phase.

An individual's access to and use of health services is considered to be a function of three characteristics:

1) Predisposing Factors: The socio-cultural characteristics of individuals that exist prior to their illness. This entails the social structure (education, occupation, ethnicity, social networks, social interactions, and culture); the health beliefs (attitudes, values, and knowledge that people have concerning and towards the health care system) and the demographic (age and gender).

2) Enabling Factors: refer to the logistical aspects that facilitate or hinder access to healthcare services. At the personal or family level, these include the financial means and knowledge required to access health services, such as income, health insurance coverage, availability of a regular source of care, transportation, and the extent and quality of social support networks. At the community level, enabling factors include the availability of healthcare personnel and facilities, as well as waiting times for services. Additional factors that may influence healthcare utilization include genetic predispositions and psychological characteristics.

3) Need Factors:

The most immediate cause of health service use, from functional and health problems that generate the need for health care services. "Perceived need will better help to understand care-seeking and adherence to a medical regimen, while evaluated need will be more closely related to the kind and amount of treatment that will be provided after a patient has presented to a medical care provider." (Andersen, 1995).

In this study, the male partner intervention model was developed based on the assumptions of the Andersen and Newman framework. The intervention sought to improve male participation in maternal and newborn health services by addressing enabling and need-related factors that influence health service utilization. The intervention included inviting male partners to accompany their spouses to antenatal clinics and providing health education on pregnancy, danger signs, PMTCT, birth preparedness and newborn care.

According to the framework, predisposing factors such as age, education level, religion and occupation may influence the willingness of men to participate in MNCH services. Enabling factors such as availability of male-friendly services, reduced waiting time, presence of male health care workers, privacy and good customer care may facilitate male involvement in antenatal and postnatal care services. Need factors in this study included the perceived quality and relevance of maternal and newborn health services offered to couples.

The study therefore hypothesized that improving enabling and need factors through the male partner intervention model would increase male involvement in MNCH services and consequently improve maternal and newborn health outcomes such as uptake of PMTCT services, health facility delivery, family planning uptake, knowledge of danger signs in pregnancy, exclusive breastfeeding practices and reduction of domestic violence.

To complement the Andersen and Newman Framework, the study draws on the Social Ecological Model (SEM), the Health Belief Model (HBM), and the Theory of Planned Behavior (TPB). The Social Ecological Model facilitates an understanding of the multiple levels of influence on male partner involvement. At the individual level, factors such as knowledge of pregnancy danger signs and attitudes toward antenatal care are considered. At the interpersonal level, the study examines partner support and family relationships, while community-level influences include cultural norms and beliefs regarding male participation in maternal health. Institutional factors, such as health facility practices and service organization, are also explored.

The Health Belief Model and the Theory of Planned Behavior further inform the intervention design and the assessment of behavioral outcomes. The Health Belief Model explains how perceived benefits and perceived barriers influence men's decisions to participate in maternal health activities. The Theory of Planned Behavior complements this perspective by emphasizing the role of attitudes, subjective norms, and behavioral intentions in shaping male involvement. Consequently, the intervention seeks to improve knowledge, modify perceptions, strengthen positive attitudes, and influence social norms that support male participation in maternal and neonatal health.

Together, these theories complement the Andersen and Newman Framework by providing a broader understanding of the individual, interpersonal, community, and institutional factors that influence health-related behaviors and service utilization. Their integration enhances the interpretation of study findings and strengthens the development of interventions aimed at increasing male partner involvement in maternal and neonatal health.

2.8 Conceptual Framework

The conceptual framework was adapted from Andersen and Newman's Health Services Utilization Model to illustrate the relationship between predisposing, enabling and need factors, male involvement and maternal-newborn health outcomes (Andersen & Newman, (2005).

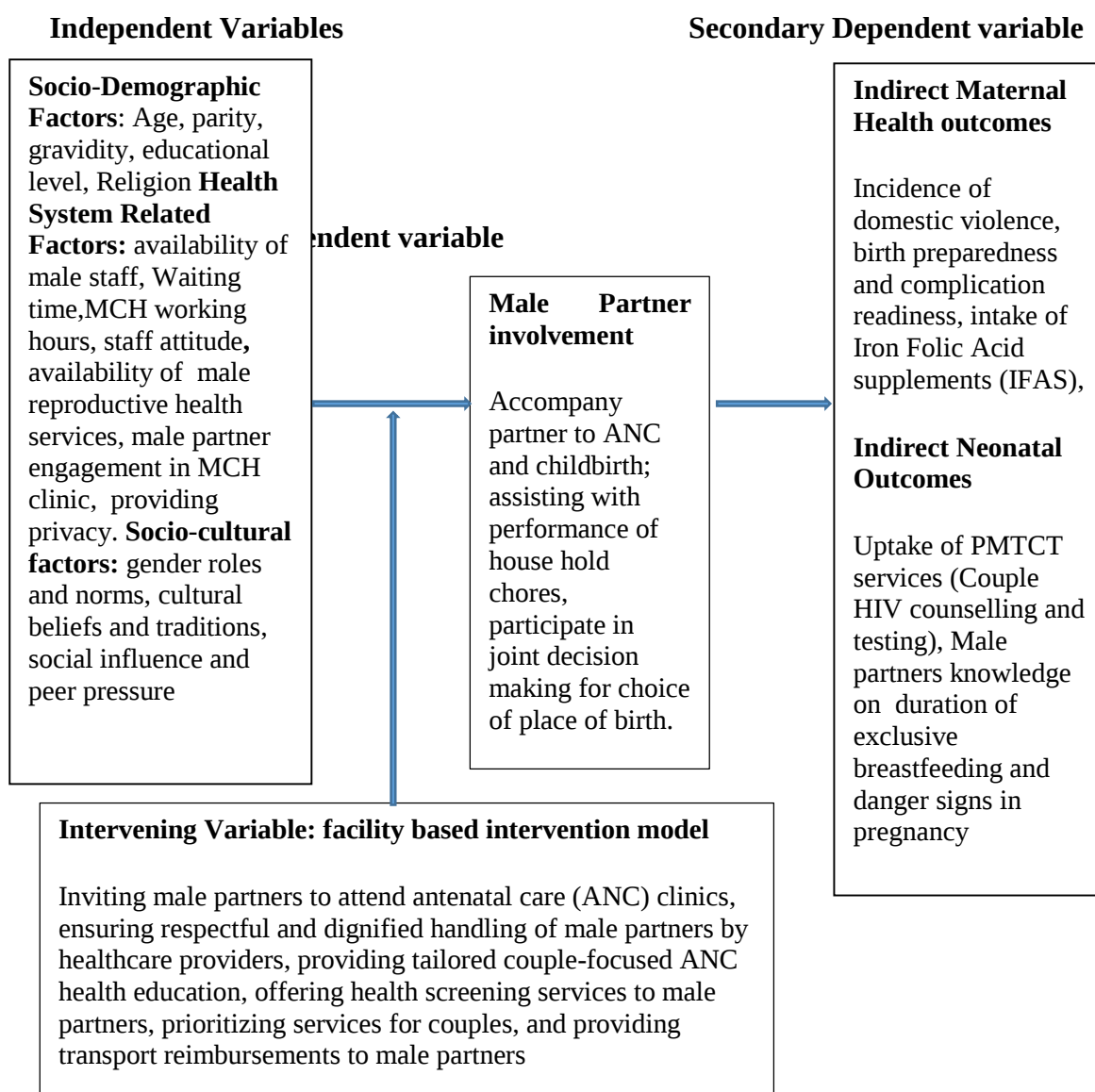


Figure 1.2: Conceptual Framework

CHAPTER THREE

METHODOLOGY

3.1 Study Design

A mixed-methods design employing a sequential exploratory strategy, followed by a pre-test and post-test quasi-experimental design with non-equivalent groups, was utilized. Mixed-methods research is a methodology that involves the collection, analysis, and integration of both qualitative and quantitative data within a single study (Dawadi et al., 2021). This approach was appropriate as it allowed for an in-depth exploration of the research problem and subsequent empirical testing of the developed intervention.

The study was conducted in two distinct but interconnected phases. The first phase employed a qualitative exploratory design to generate context-specific insights that informed the development of the intervention model. This involved gathering perspectives from relevant stakeholders, including clinical nurse experts, to identify barriers and facilitators of male partner involvement in maternal and neonatal health services. The qualitative findings were then used to guide the design of a facility-based intervention model tailored to the identified needs and context.

The second phase employed a pre-test and post-test quasi-experimental design to evaluate the effectiveness of the developed intervention model. In this phase, participants were assigned to intervention and comparison groups without randomization, consistent with the nature of quasi-experimental designs. Melender et al. (2020) note that quasi-experimental research designs, similar to experimental designs, test causal hypotheses by evaluating whether an intervention achieves its intended outcomes. In such designs, the programme or policy is conceptualized as an “intervention,” and its effectiveness is assessed using pre-specified indicators measured before and after implementation.

A quasi-experimental design, by definition, lacks random assignment. Instead, allocation to study conditions (treatment versus comparison) may occur through self-

selection, administrative decision-making, or both. Despite the absence of randomization, this design is useful in real-world health service settings where random assignment is often impractical or unethical.

Overall, the sequential exploratory strategy involved the collection and analysis of qualitative data followed by quantitative data. This design was particularly suitable for exploring the phenomenon in depth, using qualitative findings to inform intervention development, and subsequently testing the intervention's effectiveness. In this study, the approach also supported the generalization of qualitative insights into measurable outcomes, including the assessment of male partner involvement and maternal and neonatal health outcomes following implementation of the intervention model.

3.2 Philosophical Underpinning and Methodological Orientation

The philosophical foundation of this study, primarily rooted in Pragmatism, directly informs the methodological choices adopted. Pragmatism supports the use of methods that best address the research problem and allows for flexibility in integrating both quantitative and qualitative approaches. In this study, the objective is to evaluate the effect of male partner involvement on maternal and child health outcomes while also understanding the contextual factors influencing such involvement. This dual focus justifies the adoption of a mixed-methods approach.

The quantitative component of the study is guided by a quasi-experimental design involving control and intervention groups. This approach enables the assessment of causal relationships between the intervention (inviting male partners to participate in antenatal care) and key outcome variables such as male attendance at antenatal clinics, uptake of HIV testing, and knowledge of pregnancy danger signs. The use of structured questionnaires and pre- and post-intervention measurements aligns with the pragmatic emphasis on generating objective, measurable evidence to inform practice and policy.

Complementing this, the qualitative component is informed by Constructivism, which facilitates an in-depth exploration of participants' experiences, perceptions, and socio-cultural contexts. Through interviews or focus group discussions, the study captures how male partners, women, and healthcare providers interpret and respond to the

intervention. This is particularly important in understanding the influence of gender norms, cultural expectations, and interpersonal dynamics on male involvement in maternal health.

The inclusion of Critical Theory further strengthens the methodological orientation by providing a lens to examine underlying power relations and gender inequalities that may affect male participation. It supports the interpretation of findings beyond surface-level associations, allowing the study to highlight structural and cultural barriers and propose transformative strategies for improving male engagement in maternal and child health.

The integration of these philosophical and theoretical perspectives ensures coherence between the study's objectives, design, data collection methods, and analytical strategies. Quantitative data are analyzed to determine the effectiveness of the intervention, while qualitative data provide explanatory insights into why and how the intervention succeeded or failed within the given context. This alignment enhances the validity and applicability of the study findings in informing maternal and child health programs and policies.

3.3 Study Area

The study was conducted in Thika Level 5 Hospital and Kiambu Level 5 Hospital, both public health facilities located in Kiambu County, Kenya. Thika Level 5 Hospital, which served as the intervention site, is situated in Thika Town within Thika Sub-County. Thika Town is a major urban and industrial center located approximately 40 kilometres northeast of Nairobi along the Nairobi–Nakuru highway. The hospital is a key referral facility serving Thika Sub-County and surrounding areas, including peri-urban and rural populations within Kiambu County and neighbouring counties.

Kiambu Level 5 Hospital, which served as the control site, is located in Kiambu Town within Kiambu Sub-County. Kiambu Town lies approximately 20 kilometres northeast of Nairobi and functions as an administrative and service hub for Kiambu County. The hospital provides secondary-level healthcare services and caters to a large catchment

population drawn from both urban and rural communities within Kiambu Sub-County and adjacent areas.

These two facilities were selected because they are among the busiest public health institutions in Kiambu County, handling a high volume of maternal and child health clients. From May 2019 to April 2020, Thika Level 5 Hospital and Kiambu Level 5 Hospital attended to a total of 13,950 and 12,869 antenatal mothers, respectively. Their high client load, urban–peri-urban mix of populations, and comparable service delivery levels made them appropriate sites for assessing the effectiveness of the facility-based intervention model on male partner involvement in maternal and neonatal health services. Furthermore, low levels of male participation in maternal and child health services have been documented in Kiambu County, as reported in the Kiambu County Strategic Plan (2008–2012). In addition, the participants drawn from both study sites were considered broadly comparable in terms of socio-demographic and cultural characteristics, as the two facilities are located in urban centres within the same county and serve populations with similar social, economic, and cultural contexts. According to Melender et al., (2020), quasi-experimental designs identify a comparison group that is as similar as possible to the treatment group in terms of baseline (pre-intervention) characteristics. Therefore, the comparison group should capture what would have been the outcomes if the programme/policy had not been implemented (i.e., the counterfactual). As a result, the programme or policy can be said to have caused any difference in outcomes between the treatment and comparison groups.

3.4 Target Population

The target population for this study comprised individuals involved in maternal and newborn health service delivery and utilization specifically nurse-midwives working in maternal and child health (MCH) departments, as well as all pregnant women and their male partners attending antenatal care services in public health facilities in the county.

3.4.1 Study Population

This included nurse-midwives working in the MCH department as well as women and their male partners attending antenatal clinic at Thika and Kiambu level 5 hospitals.

3.4.2 Inclusion Criteria

It constituted women in their second trimester from 17-28 weeks gestation who were staying together with their partners, planning to reside in the study area for the next one year and owning a mobile phone. Owning a phone was a requirement to enable follow up and reminder to attend clinic as per the appointment. Marital status was based on participant self-report, which is a standard and ethically acceptable approach in community and health research. Furthermore, participants for qualitative phase were nurse-midwives and midwives working in the MCH department for at least one year were recruited.

3.4.3 Exclusion Criteria

The exclusion criteria were women in second trimester with a partner too sick or mentally unwell, nurse-midwives and midwives on study leave, and those on long sick leave lasting more than six months.

3.5 Study Variables

3.5.1 Dependent Variables

The primary dependent variable was the number of times male partners accompanied their spouses to the antenatal clinic. Male involvement was also measured based on assistance in performance of household chores and joint decision making on place of birth. Secondary dependent variables involved maternal and newborn health indicators such as: Incidence of domestic violence, men's knowledge on danger signs in pregnancy, men's knowledge on recommended duration of exclusive breastfeeding, skilled birth attendance (birth in the hospital), partner reminder of IFAS intake, regular intake of iron and folate supplements (IFAS), having a plan for emergency transport, availability of emergency birth components (cord clamps/string, a razor blade, cotton

wool and a pair of clean or surgical gloves) and Couple HIV counselling and testing. Incidence of domestic violence during pregnancy was determined through participants' self-reports of exposure to any episode of physical, sexual, verbal, or psychological abuse occurring during the index pregnancy. A binary outcome (Yes/No) was generated based on whether at least one form of abuse was reported.

3.5.2 Independent Variables

This study had both manipulated and non-manipulated independent variables. The manipulated independent variable is one that the experimenter purposely changes or varies over the course of investigation while a non-manipulated independent variable is one the researcher measures but does not manipulate. The following intervention strategies formed the manipulative independent variables: issuing male invitation letter, education of male partners on the danger signs in pregnancy, duration and importance of exclusive breastfeeding practices and supportive measures to their partners, providing male friendly services that included privacy and timely services provision; allowing men in the antenatal room, taking blood pressure, weight and height of men, and calculation of body mass index. Socio-demographic characteristics (education level, age, religion, occupation, parity) formed the non-manipulative independent variables.

3.6 Sample Size Determination

3.6.1 Quantitative Phase

The sample size formula for difference in mean between groups in interventional study by Fleiss et al., (2003) was used.

n = sample size

$$\left\{ \frac{z_{2\alpha} \sqrt{\{2\pi(1-\pi)\}} + z_{2\beta} \sqrt{\{\pi_1(1-\pi_1) + \pi_2(1-\pi_2)\}}}{\pi_1 - \pi_2} \right\}^2$$

π_1 = Expected prevalence or event rate in intervention group 44% (Gage et al., 2022).

Π_2 = Prevalence or event rate in control (i.e. 3%= 0.03) (Francis, et al. 2018)

$\Pi = \Pi_1 - \Pi_2$ is the effect size (the difference in means or proportions); 0.44-0.03 = 0.41

$Z_{\alpha/2} = 1.96$ (From Z table at type 1 error of 5%)

$Z_{2\beta} = 1.282$ (From Z table at 90% power)

Substituting values in the formula:

$$n = \frac{\{1.96\sqrt{2*0.41(1-0.41)} + 1.28\sqrt{0.44(1-0.44)} + 0.03(1-0.03)\}^2}{0.44-0.03}$$

n = 25 participants per group

Considering for possibility of loss to follow-up, the sample size was increased by 20%,

Thus n = 120/100 * 25

Thus n = 30 participants per group

3.6.2 Qualitative Phase

For the qualitative phase, three FGDs were conducted among nurse-midwives and two FGDs among male partners. Each FGD comprised 6–8 participants, which is considered adequate for generating meaningful discussion (Krueger & Krueger, 2002). Guest et al. (2017) further reported that thematic saturation is commonly achieved within three to six FGDs.

3.7 Participant Recruitment and Sampling Procedure

3.7.1 Quantitative Phase

Systematic random sampling was used to recruit pregnant women attending antenatal care (ANC) clinics at Thika and Kiambu Level 5 Hospitals for the intervention and

control groups, respectively. Eligible participants were women between 17 and 28 weeks of gestation who met the study inclusion criteria.

At the intervention site, records from May 2019 to April 2020 indicated that a total of 3,904 new ANC clients attended the clinic, translating to an average weekly attendance of approximately 75 clients. Based on the required weekly recruitment target, a sampling interval of two was determined; therefore, every second eligible client attending the ANC clinic was recruited into the study until the required sample size was achieved.

Similarly, at the control site, a total of 3,348 new ANC clients attended the ANC clinic during the same period, corresponding to an average weekly attendance of approximately 60 clients. Using the calculated sampling interval of two, every second eligible client was recruited into the control group until the desired sample size was attained.

Following recruitment at the intervention site, male partners were contacted by the principal researcher prior to scheduled ANC appointments through phone calls and text message reminders. The importance of accompanying their spouses to ANC visits was emphasized as part of the study intervention and follow-up process.

3.7.2 Qualitative Phase

For the qualitative phase of the study, nurse-midwives were purposively selected from Thika Level 5 Hospital and Kiambu Level 5 Hospital in Kiambu County, both of which are public referral and teaching hospitals offering maternal and child health (MCH) services. Male spouses of women attending antenatal care (ANC) clinics were also invited to participate in focus group discussions (FGDs). Purposive sampling was considered appropriate because the participants possessed characteristics and experiences relevant to the study objectives. In particular, nurse-midwives had professional experience and knowledge related to maternal and newborn health services, while the male participants had spouses attending ANC services and were therefore considered capable of providing relevant perspectives on male involvement in maternal health care.

Recruitment was facilitated through the nurse in-charges at the two facilities, who assisted in providing contact information for eligible nurse-midwives. Invitations to participate were communicated through WhatsApp messages, emails, and phone calls. The study purpose, procedures, and voluntary nature of participation were explained to potential participants, after which those willing to participate confirmed their availability several days prior to data collection as part of the informed consent process.

Nurse-midwives who consented to participate were organized into three FGDs comprising six to seven participants per group. Two FGDs involving nurses at the intervention site were conducted face-to-face within the hospital boardroom , while one FGD at the control site was conducted virtually using Zoom. Participants joining the virtual FGDs were requested to register using their official names upon accessing the Zoom link to facilitate participant identification and attendance verification. Internet bundle costs incurred during participation in the virtual discussions were reimbursed at the end of each session as earlier communicated to the participants.

Male participants were selected using homogeneous purposive sampling among women attending ANC clinics at the intervention site. Male partners were recruited only from the intervention site because they had direct exposure to the facility-based intervention and were therefore better positioned to provide experiential perspectives regarding the intervention processes and acceptability. Women attending ANC clinics who were living with their spouses and experiencing their first pregnancy were identified at the waiting bay and requested to invite their spouses to participate in the FGDs through invitation letters issued at the clinic. A total of 16 men were invited, which was considered adequate to form two FGDs comprising at least six participants each. The male FGDs were intended to complement the perspectives obtained from the nurse-midwives, whose views had already reached thematic saturation by the third FGD. Ultimately, six men participated in the first FGD, while seven participated in the second FGD.

Each FGD comprised between six and eight participants, which is considered adequate for generating meaningful interaction and in-depth discussion (Krueger & Krueger,

2002). Furthermore, Guest et al. (2017) reported that more than 80% of themes are typically identifiable within two to three focus groups, while approximately 90% of themes are discoverable within three to six FGDs. The number of FGDs conducted in this study was therefore considered sufficient to achieve thematic saturation and capture diverse participant experiences and perspectives regarding male involvement in maternal and newborn health services.

3.8 Development of the Study Intervention

The development of the male partner involvement intervention model followed the six-step framework for quality intervention development as described by Wight et al. (2015). This framework provides a systematic approach to designing contextually relevant and evidence-based interventions. These steps include: (1) defining and understanding the problem and its causes; (2) identifying modifiable causal or contextual factors; (3) deciding on mechanisms of change; (4) clarifying how these mechanisms will be delivered; (5) testing and refining the intervention; and (6) generating sufficient evidence to support further evaluation.

The first step involves defining and understanding the problem and its underlying causes. In this study, this was achieved through an exploratory qualitative phase using focus group discussions to identify barriers and facilitators to male partner involvement in maternal and child health services.

The second step focuses on identifying modifiable causal or contextual factors that can be targeted by the intervention. Findings from the exploratory phase were analysed to determine key factors amenable to change, including socio-cultural norms, knowledge gaps, and health system-related barriers.

The third step entails deciding on appropriate mechanisms of change through which the identified factors can be influenced. Based on the study findings and existing literature, mechanisms such as health education, partner invitation strategies, and enhanced communication between healthcare providers and couples were identified.

The fourth step involves clarifying how these mechanisms of change will be delivered in practice. Accordingly, an initial draft of the intervention model was developed, outlining the structure, components, and delivery strategies of the intervention within the antenatal care setting.

The fifth step focuses on testing and refining the intervention. This draft was first reviewed by the research supervisors to obtain technical input. The draft was then subjected to a panel of eight experienced nurse-midwives working in the Maternal and Child Health (MCH) department for a consensus-building process. The expert validation panel comprised four nurse-midwives who had participated in the exploratory phase and four new participants. The inclusion of both prior participants and new experts was methodologically justified. Participants from the exploratory phase contributed continuity and ensured that the model accurately reflected the contextual realities and insights previously identified. Meanwhile, the inclusion of new participants enhanced the objectivity and credibility of the validation process by minimizing potential bias and introducing independent perspectives. This approach aligns with recommendations in consensus development methods such as the Delphi technique, which emphasize the value of combining informed insiders with independent experts to strengthen content validity and reduce groupthink (Hsu & Sandford, 2007; Keeney et al., 2011). The Principal investigator facilitated the discussion, during which participants critically reviewed the feasibility and relevance of each component of the model. During this process, minor adjustments were made to the intervention model to enhance feasibility within the study setting. For instance, due to limited space in the MCH clinic, it was agreed that routine physical examination of male partners would be omitted. Instead, male partners identified with medical concerns would be referred to appropriate departments for further management. Additionally, proposed laboratory investigations, including the Venereal Disease Research Laboratory (VDRL) test for syphilis, were excluded due to the unavailability of test kits for male clients.

The refined intervention model was subsequently pilot-tested to assess its feasibility and acceptability prior to implementation in the main study. Findings from the pilot study informed further refinement of the intervention model, including incorporation

of follow-up phone calls, text message reminders, and transport reimbursement strategies to enhance male partner participation. Details of the pilot study procedures are presented under Section 3.10. The finalized intervention model was then implemented at the intervention site.

The third phase of the study involved implementation of the developed intervention model by the principal researcher and research assistants with the support of the hospital MCH staff. This addressed the sixth step developed by Wight et al., (2015). Implementation was proceeded by a sensitization workshop of 12 nurse-midwives and midwives working in the MCH department on the final intervention model by the principal researcher. This focused on creating an enabling environment to encourage male partner accompaniment to antenatal clinic. This included welcoming male partners to the ANC clinic and offering priority services to the couples, providing a health talk to the couples, ensuring couple HIV counselling and testing as well as providing male centred services outlined in the model. Using systematic random sampling method, thirty women attending antenatal clinic from 17-28 weeks gestation were issued with a letter inviting their male partners in the subsequent ANC visit. The women were explained on the need to tell their partners to accompany them to ANC clinic preferably early in the morning. To enhance compliance with male partner ANC attendance, male partners were contacted by the principal researcher by phone prior to their scheduled appointments. A follow-up text message was also sent as a reminder. The need to accompany their spouses was emphasized during the contacts. Furthermore, to encourage male partner accompaniment during subsequent ANC visits, couples were warmly welcomed at the MCH department and provided with priority care. The couples were educated on the danger signs in pregnancy, duration of exclusive breastfeeding, and the roles of men in supporting their partners during and after pregnancy. These roles encompassed accompanying their partners to antenatal clinic, childbirth and postnatal clinic, helping with household chores, reminding their partners to attend ANC clinic and regular intake of IFAS, early recognition of danger signs, shared decision making on family planning, choice of place of birth, and encouraging exclusive breastfeeding by the partner. Additionally, the interested men were allowed to enter examination room to witness further service provision to their spouses. Furthermore, the blood pressure, weight and height checkups were done for

accompanying male partners. Their body mass index was also determined and those found unfit advised accordingly. Couple HIV counselling and testing was also offered voluntarily. The principal researcher provided his contacts to the study participants in the intervention group which enabled them to make any enquiries and consultations about the health of the pregnant woman. Women in the control group study site received routine antenatal care which included physical examination, antenatal profile check-up and tailored health messages. Unlike the intervention site, male partners were not invited to the ANC clinic. For any man who had accompanied their partners to ANC clinic, nothing special was done to them. The healthcare workers in this facility continued with their routine focus to the woman without paying special attention to the accompanying male partner.

3.9 Data Collection Instruments

Quantitative data was collected using a researcher administered structured questionnaire composed of closed and open-ended questions while qualitative data was collected using focused group discussions guide. The questionnaire consisted of two sections. The first section collected participants' socio-demographic characteristics, while the second section assessed maternal and neonatal health-related knowledge, behaviours, and selected outcome indicators associated with the intervention model. Both study instruments were translated to Kiswahili for ease of comprehension using Swahili-English online translator. Back translation was done to ensure correct English-Swahili translation. During the pilot study, the study instruments were pre-tested to assess for the clarity of questions, expected duration, suitability to the participants, and appropriateness to answer research questions.

3.10 Research Assistants

For the quantitative phase, research assistants were recruited based on predefined qualifications, including possession of at least a diploma in nursing and prior clinical experience. The research assistants underwent comprehensive training on the research protocol and data collection procedures one month prior to commencement of data collection to ensure uniformity in administration of the instruments. The principal

investigator frequently participated in implementation of the intervention model and supervision of data collection to ensure adherence to the study protocol.

3.11 Study Piloting

A pilot study was conducted one month before the main study to pre-test the study instruments and assess the feasibility of the intervention model. The pilot study evaluated the clarity of the questionnaire items, suitability of the questions to the participants, appropriateness of the tools in answering the research questions, and the average time required to complete the interviews. The pilot study was conducted at Ruiru Sub-County Hospital among 10 pregnant women attending the Maternal and Child Health (MCH) clinic. The pilot sample represented approximately 30% of the estimated study sample size, which is within the recommended range for pilot studies. Participants were issued with invitation letters requesting their spouses to accompany them to the antenatal clinic during their subsequent clinic visit. Data obtained from the pilot study were not included in the final analysis of the main study.

3.12 Data Collection Procedure

Data was collected by the principal researcher and two research assistants. Qualification for research assistants were a diploma and degree in nursing with previous experience in data collection. Research assistants were trained for three days by the principal investigator on the research protocol and data collection tools. In the first phase of the study, three and two FGD's from nurse-midwives and men respectively were conducted. The FGD's lasted between 45-90 minutes and were moderated by the principal researcher. The FGDs were audio recorded. Probing questions were used to seek clarity and gather more information. The moderator ensured that all participants provided their inputs on every aspect under discussion. Inactive members were called by their numbers to provide their perspectives. During recruitment, contacts for both the man and woman as well as the socio-demographic data was collected for participants in the intervention and control groups. This included maternal age, parity, residence, educational level and occupation status. Krueger & Krueger, (2002) suggests that participants should share similar characteristics such as gender, age range, ethnic and social class background. Baseline and post-intervention

data taken included men's knowledge of danger signs in pregnancy and duration of exclusive breastfeeding. Men in the control group were called by the principal investigator using the phone numbers provided by their spouses. Women attending antenatal care had been told to inform their partners that they would be called to participate in an interview. After the researcher was introduced and the study protocol explained, verbal consent was obtained from the male participants. A baseline interview was then conducted, followed by post-intervention interviews carried out one to two weeks postpartum to collect follow-up data. Quantitative data on frequency of female spouse accompaniment by partner during ANC, male partners assisting with household chores, joint decision making on the place of birth, intake of IFAS and skilled birth attendance were taken from female participants in both groups. Participants in the intervention group were followed up at every antenatal clinic visit by the principal investigator and research assistants for support until one week after birth to ensure adherence to the study protocol. Antenatal clinic contacts were scheduled based on the WHO (2016) model which stipulates first contact within 12 weeks, second to eighth contacts at 20, 26, 30, 34, 36, 38 and 40 weeks.

3.13 Data Management and Analysis

For qualitative data, voice recorded FGDs were transcribed verbatim, then coding done to identify emerging themes using MAXQDA 2022 software for qualitative data. Both inductive and deductive coding was used. First, data from the first FGD was read and re-read for further familiarization. Initial and subsequent new codes were generated after reading data. Codes were assigned to data. General refining of codes continued as analysis proceeded to subsequent FGDs and emerging sub-categories and categories generated. Finally, analysis of the generated categories was done and conclusion drawn. Data validity was ensured through member checking of the transcribed data and generated themes. Furthermore, the principal researcher shared the audio-recorded FGDs, transcripts and analysed data with co-researchers and their inputs incorporated in the final analysis. Quantitative data was collected in a pre-tested questionnaire then entered into excel sheet. Collected data was checked for completeness, accuracy and consistency before being exported to SPSS version 27 for analysis to generate both descriptive and inferential statistics. Descriptive statistics were used to summarize

participants' socio-demographic characteristics, baseline data and key study outcomes, including the proportion of respondents with knowledge of danger signs in pregnancy, male attendance at antenatal care visits, and other predictor variables. Categorical variables were presented as frequencies and percentages, while continuous variables were summarized using means and standard deviations. Comparisons to test association and effect of the intervention between the control and intervention groups were conducted using chi-square and Fishers Exact tests for categorical variables and independent t-tests for continuous variables. The possible effect of three sociodemographic factors (gravidity, age and education) on dependent variables was analysed using binary logistic regression.

Table 3.1: Summary of Statistical Analysis

Variable Type	Examples	Statistical Test Used
Socio-demographic characteristics	Age, gravidity, education level, etc.	Descriptive statistics (mean, SD, frequencies, %)
Baseline and outcome comparisons	Key study outcomes between intervention and control groups	Frequencies, percentages, Chi-square test/ Fisher's Exact test and Independent t-test
Predictor analysis	Effect of age, gravidity, education on outcomes	Binary logistic regression

3.14 Ethical Consideration

Ethical approval was sought from Jomo Kenyatta University of Agriculture and Technology Research Ethics Committee (JKU/ISERC/02316/0891). Permission to conduct the study was obtained from National Commission for Science, Technology and Innovation (NACOSTI/P/21/9660) as well as Thika and Kiambu Level 5 Hospitals Administration. Participants were informed about the nature and benefits of the study before obtaining a written consent. Confidentiality was ensured by assigning personal identification number to study participants. Participants in the FGDs were assigned numbers for anonymity and guidance during the discussions. Respondents were free to withdraw from the study at any time and this did not risk them losing the right to

access any service that they were otherwise entitled to. The study foresaw no physical nor psychological harm to study subjects.

3.15 Study Delimitations

The study was deliberately designed as a quasi-experimental study rather than a randomized controlled trial. This design choice was made to allow implementation of the intervention within a routine Maternal and Child Health (MCH) service setting, where random allocation of participants to intervention and control groups was not feasible due to operational and ethical considerations.

The study was also delimited to a single health facility, which enabled close monitoring of the intervention implementation and ensured consistency in data collection procedures. However, this setting-specific focus was intended to enhance internal validity rather than generalisability.

The study did not measure direct clinical endpoints such as maternal morbidity, maternal mortality, or neonatal mortality. Instead, it assessed proxy (intermediate) indicators, including knowledge, attitudes, and health-promoting behaviours, which are established precursors to improved maternal and neonatal health outcomes. These indicators were selected because they are more feasible to measure within the study period and are sensitive to behavioural change resulting from the intervention.

Furthermore, the follow-up period was limited to the immediate postpartum period (one to two weeks), which was selected to capture early post-intervention effects on knowledge and behaviours, while acknowledging that long-term outcomes were beyond the scope of the current study.

Finally, the study involved both intervention implementation and data collection within the same clinical setting, a design choice made to ensure fidelity to the intervention protocol and improve participant follow-up within resource-constrained service delivery conditions.

3.16 Study Assumptions

The study assumed that the sample selected was representative of the target population and that respondents provided honest and accurate information during data collection. It was further assumed that the intervention was implemented consistently across all participants and that external influences affecting male partner involvement remained relatively stable during the study period.

3.17 Study Limitations

The study used a quasi-experimental design, which did not allow for random allocation of participants into the intervention and control groups. As a result, differences in baseline socio-demographic characteristics such as education level, age, and gravidity were observed to be statistically significant between the two groups. These differences had the potential to influence the study outcomes. However, to address this limitation, binary logistic regression analysis was performed, which indicated that these socio-demographic variables did not have a statistically significant effect on the outcomes.

In addition, the study relied on self-reported data, which may have been subject to recall bias and social desirability bias, particularly in relation to male partner involvement and maternal health behaviours. The study was also conducted in a single health facility setting, which may limit the generalisability of the findings to other settings with different socio-cultural or health system contexts.

Due to the unavailability of male staff and staffing shortages in the Maternal and Child Health (MCH) clinic, the principal researcher was involved in both service delivery and data collection. While this approach helped ensure adherence to the study protocol and reduced participant waiting time, it may have introduced potential observer bias. To minimise this risk, standard operating procedures were strictly followed, and data collection was conducted in a systematic and consistent manner to maintain objectivity.

Loss to follow-up was another potential limitation. This was mitigated through regular reminders and telephone follow-ups with participants prior to scheduled appointments, which improved retention and reduced attrition bias.

Finally, although the study was framed within maternal and neonatal health, it did not assess direct clinical outcomes such as maternal morbidity or neonatal mortality. Instead, it focused on indirect behavioural and knowledge-based indicators, which included awareness of key maternal health practices (such as recommended duration of exclusive breastfeeding and danger signs in pregnancy), health-promoting behaviours (such as uptake of iron and folic acid supplementation), and birth preparedness strategies (such as emergency transport planning and availability of a birth companion). These indicators are recognised as important precursors to improved maternal and neonatal health outcomes

3.18 Quality Assurance

3.18.1 Validity

Validity refers to the extent to which the study instruments and procedures accurately measured the intended variables. Several measures were undertaken to ensure validity of both the qualitative and quantitative phases of the study.

For the qualitative phase, credibility of the findings was enhanced through use of focus group discussions to obtain in-depth information on barriers and facilitators to male partner involvement in maternal and child health services. An interview guide developed from the study objectives and literature review was used to ensure consistency during discussions. Probing techniques were employed to obtain detailed responses from participants. Member checking was conducted during discussions by summarizing participants' responses for confirmation and clarification. In addition, findings from the qualitative phase informed development of the intervention model, thereby enhancing contextual relevance.

For the quantitative phase, internal validity was enhanced through use of a pre-test and post-test design with a focal local control group to ensure that the intervention and

control groups shared similar observable characteristics. The data collection instruments were pre-tested during the pilot study to assess clarity, appropriateness, and suitability in addressing the research objectives. Minor adjustments were subsequently made to improve clarity and flow of questionnaire items.

Content validity of the intervention model was further enhanced through review by research supervisors and expert validation by experienced nurse-midwives working in Maternal and Child Health services. The intervention components were refined based on expert feedback to ensure feasibility and relevance within the study setting. To enhance comprehension among participants, the data collection instruments were translated into Kiswahili using an online English–Swahili translation guide.

3.18.2 Reliability

Reliability refers to the consistency and dependability of the research instruments and procedures over time. To ensure reliability in the qualitative phase, the same interview guide was used consistently across all focus group discussions. The principal investigator moderated the discussions using standardized procedures to maintain consistency in data collection. Field notes and audio recordings were used to complement the discussions and minimize loss of information. To minimize attrition and ensure consistency in follow-up procedures, participants received reminder phone calls one week and at least three days prior to their scheduled appointment dates.

3.19 Study Dissemination

Study findings were disseminated by presenting seminars to staff and other postgraduate students at JKUAT school of nursing and published in Pan African Medical Journals (*DOI: 10.11604/pamj.2023.46.102.33470; 10.11604/pamj.2023.46.102.40935*). In addition, the findings were shared with research participants, MCH staff, hospital management team, and county reproductive health coordinators.

CHAPTER FOUR

STUDY FINDINGS

4.1 Introduction

This chapter presents the findings of the study according to the study objectives. The chapter includes participants' socio-demographic characteristics, baseline findings, and the effects of the male partner intervention model on maternal and neonatal health outcomes. Comparisons between the intervention and control groups are presented, and statistical tests were used to determine the significance of the observed differences.

4.2 Socio-Demographic Characteristics of FGD's Participants

As shown in Table 4.1, a total of 32 participants took part in the focus group discussions (FGDs), comprising 19 nurse-midwives and 13 male respondents. The nurse-midwife group was predominantly female, with nearly all participants being women (n = 18, 94.7%), while only one participant (5.3%) was male. In contrast, all male respondents were men (100%). In terms of age distribution, most nurse-midwives were above 40 years of age (n = 10, 53.0%), followed by those aged 31–40 years (n = 5, 26.0%), and a smaller proportion aged 20–30 years (n = 4, 21.0%). Among male respondents, the majority were aged 31–40 years (n = 8, 62.0%), with fewer participants in the 20–30 years category (n = 3, 23.0%) and those above 40 years (n = 2, 15.0%). Regarding marital status, most nurse-midwives were married (n = 12, 63.0%), while a smaller proportion were single (n = 5, 26.0%) or divorced/separated (n = 2, 11.0%). All male respondents were married (n = 13, 100%). In relation to education level, the majority of nurse-midwives had attained college-level education (n = 15, 79.0%), while the remainder had university-level qualifications (n = 4, 21.0%). Among male respondents, most had secondary-level education (n = 8, 61.0%), followed by primary education (n = 3, 23.0%), and a small proportion had college education (n = 2, 15.0%). Employment status varied between the two groups. All nurse-midwives were formally employed (n = 19, 100%). In contrast, most male respondents were casual workers (n = 9, 69.2%), while a few were employed (n = 2, 15.4%) or self-employed (n = 2, 15.4%).

With regard to working experience, most nurse-midwives had 4–6 years of experience (n = 11, 58.0%), followed by those with 1–3 years and 7–10 years of experience (each n = 3, 16.0%), while a smaller proportion had more than 10 years of experience (n = 2, 10.0%). Among male respondents, the majority had 4–6 years of experience (n = 8, 62.0%), followed by those with 1–3 years (n = 3, 23.0%) and 7–10 years (n = 2, 15.0%).

Table 4.1: Socio-Demographic Characteristics of FGD Participants (N= 32)

Characteristic	Category	Nurse-Midwives (n = 19), n (%)	Male Respondents (n = 13), n (%)
Gender	Male	1 (5.3)	13 (100.0)
	Female	18 (94.7)	—
Age	20–30 years	4 (21.0)	3 (23.0)
	31–40 years	5 (26.0)	8 (62.0)
	> 40 years	10 (53.0)	2 (15.0)
Marital Status	Single	5 (26.0)	0 (0.0)
	Married	12 (63.0)	13 (100.0)
	Divorced/Separated	2 (11.0)	0 (0.0)
Education Level	Primary	0 (0.0)	3 (23.0)
	Secondary	0 (0.0)	8 (61.0)
	College	15 (79.0)	2 (15.0)
	University	4 (21.0)	0 (0.0)
Employment Status	Casual workers	0 (0.0)	9 (69.2)
	Employed	19 (100.0)	2 (15.4)
	Self-employed	0 (0.0)	2 (15.4)
Working Experience	1–3 years	3 (16.0)	3 (23.0)
	4–6 years	11 (58.0)	8 (62.0)
	7–10 years	3 (16.0)	2 (15.0)
	> 10 years	2 (10.0)	0 (0.0)

4.3 Benefits Associated with Male Partner Involvement in MNH Services

The study sought to establish benefits associated with active male partner involvement in maternal and newborn health from nineteen nurses working in MCH. This involved nurse-midwives from both the control and intervention study sites. The analysis focussed on identifying common themes on the benefits of male partner involvement in MNCH services. Two themes emerged namely: promotes partner support for MNH/RH services and increases acceptability and utilization of MNH/RH services.

4.3.1 Increased Acceptability and Utilization of MNH/RH Services

Most of the nurses (n=9) were of the opinion that having a male partner accompany their spouses to antenatal and postnatal clinic will result to increased acceptability and utilization of maternal, neonatal and reproductive health. Notably, participants stated increased uptake of family planning, skilled birth deliveries, immunization, prevention of mother to child transmission of HIV and pre-conception care as indicated below.

We need men because they are considered as key decision makers. So most of the time, they will determine where the woman will go to deliver because of financial implications and if not involved from the word go, there may be some difficulty or problem. So, you have to involve men in decision making' (Participant 1, FGD 1).

'We have vaccines that are not routinely recommended by MOH, like meningitis and Hepatitis vaccines. When the husband is there it is easier to decide and the baby gets those vaccines other than the MOH recommended vaccines' (Participant 2, FGD 1).

'Involving men improves the uptake of preventive services. Like when men are involved and they come to ANC, we are able to capture men and therefore tested for HIV. So, it helps in improving uptake of preventive services like HIV testing for antenatal mothers' (Participant 6, FGD 2).

There are so many rumours and misconceptions about certain family planning services. If the husband has accompanied the wife to the clinic, he will get correct information from HCWs. For instance, some men and women don't really accept IUCD insertion because it is alleged the men will feel the coil

during coitus. During counselling we will be able to explain to the man how the IUCD works, where it is placed so that they can make informed decision' (Participant 4, FGD 3).

4.3.2 Promotes Spousal Support for Maternal, Neonatal and Reproductive Health Services

From the discussion, it was unanimously agreed by nurses that encouraging men to accompany their partners to clinic would greatly lead to physical, emotional and financial support. This would ultimately lead to better maternal and newborn health outcomes as supported by the following comments.

'If the partner attends health education during ANC clinic, he will be informed about danger signs in pregnancy enabling him take the wife to seek medical attention once noticed without delays' (Participant 2, FGD 1).

You know every community has certain cultural practices. Health education that is given during antenatal care when both partners are there really brings a lot of benefits because male partner is able to understand and support the wife psychologically, financially, nutritionally and even remind the partner to attend the clinic' (Participant 5, FGD1).

I think it's important for men to be involved because some of the health education that we give to mothers is very important for the man as well and perhaps we have issues that need to be followed up but the wife may not remember everything. So, if a man is involved they are able to follow up and make sure that whatever was recommended has been implemented' (Participant 1, FGD 2).

The man may also be the bread winner in the family and there are somethings which have financial implications. For example, when we talk about preparing for birth, there are things you will tell them to do which require money but because the man is involved he will get first-hand information from health care

workers and provide financial support without raising eye brows when told by the wife' (Participant 5, FGD 3).

4.4 Barriers to Male Partner Accompaniment and Participation in MNCH Services

This study aimed to explore the factors contributing to low male partner accompaniment of women to antenatal clinic services. A total of 32 participants were included in the focus group discussions (FGDs), comprising 19 nurse-midwives and 13 male respondents drawn from both the control and intervention sites. The analysis focused on identifying key themes related to barriers and strategies for improving male partner involvement in maternal and newborn health (MNCH) services. Five main themes emerged from the data, reflecting perspectives of both nurse-midwives and male participants: traditional gender norms, roles and beliefs; unfavourable MCH service setup; work-related constraints; fear of HIV testing; and lack of awareness. These themes are summarized in Table 4.2. These were: traditional gender norms, roles and beliefs; unfavourable MCH set-up; work commitment; fear of HIV testing and lack of awareness.

Table 4.2: Themes and Sub-Themes

Theme	Sub-themes
Traditional gender norms, roles and beliefs	Cultural perceptions of MCH as a women's responsibility. Stigma and shame associated with male involvement. Fear of ridicule from peers and the community
Work Commitment	Conflict between work obligations and MCH visits. Lack of workplace policies supporting male involvement. Distance and logistical challenges for working men
Unfavourable MCH set-up	Negative staff attitudes and lack of male-friendly care. Long queues, waiting times, and inconvenient service hours. Gender imbalance in MCH staff and lack of privacy for men. Absence of services tailored to men's health needs. Discomfort and boredom in MCH waiting areas
Fear of HIV testing	Anxiety about HIV test results Fear of stigma and discrimination. Preference to avoid HIV-related discussions in MCH setting
Lack of awareness	Limited community sensitization on male involvement in MCH. Lack of knowledge about the importance of men's role in maternal health. Absence of male role models promoting MCH participation

4.4.1 Traditional Gender Norms, Roles and Beliefs

Findings from the focus group discussions revealed that deeply rooted cultural norms and traditional gender roles strongly influenced male partner involvement in maternal and child health. Across both nurse and male participant groups, pregnancy and childbirth were consistently perceived as the responsibility of women, reflecting long-standing societal expectations. Nurses described these norms as historically entrenched, with maternal health issues traditionally managed within female social networks. As one nurse explained:

It is a traditional belief that pregnancy and childbirth is supposed to be a woman's affair. Since time immemorial, men have kept off the issue entirely because it is not a man's affair. A woman is supposed to be helped by female friends and TBAs. (Male Participant 1, FGD 3)

This perspective was similarly echoed by male participants, who framed their limited involvement as consistent with cultural expectations acquired through socialization. One participant noted:

It is a societal tradition for men not to accompany their wives. As Africans, it is the responsibility of the woman to go to the clinic while pregnant and also take children for immunization. As a man of the house brought up in the village, it is a woman's responsibility. (Male Participant 5, FGD 2)

In addition to defining roles, cultural norms were also associated with social stigma that discouraged male participation. Some participants indicated that men who accompany their partners may be subject to ridicule or negative judgment within their communities. This was illustrated by the following account:

"In Africa, it is shameful to walk with a woman while pregnant. Men think that the society will backbite them that they are walking with their wives to clinic." (Male Participant 5, FGD 2).

Healthcare providers further emphasized that these beliefs are reinforced through intergenerational transmission, where behaviours observed within families shape future practices. As one nurse observed:

The other reason is due to values and culture. You see there are people who culturally believe men are not supposed to be involved in reproductive health issues such as pregnancy. If a man has been seeing both parents go to the clinic together, then the offspring may tend to take their wife to clinic." (Nurse-midwife Participant 1, FGD 1)

Taken together, these findings demonstrate that traditional gender norms and cultural beliefs not only define reproductive roles but also perpetuate expectations that

discourage male involvement, thereby limiting shared responsibility in maternal and child health.

4.4.2 Work-Related Constraints

Work-related commitments emerged as a major barrier to male partner involvement in maternal and child health services. Across the focus group discussions, participants consistently reported that occupational demands limited men's ability to accompany their spouses to the MCH clinic. This challenge was particularly pronounced among men engaged in informal employment, where income is often dependent on daily attendance and absence directly translates into financial loss.

Several participants highlighted that the operating hours of the MCH clinic further compounded this challenge. The clinic was reported to operate exclusively during weekday working hours, making it difficult for men to attend without sacrificing work responsibilities. As one participant explained:

“The clinic is not on Saturday or Sunday. If it was Saturday or Sunday, I may go say at 2.00pm after working. In most cases, the clinic runs from 8.00am to 2.00pm on weekdays.” (Male Participant 1, FGD 2).

In addition to scheduling constraints, workplace policies and expectations were identified as limiting factors. Some participants indicated that employers often do not recognize accompanying a spouse to the clinic as a valid reason for absence, thereby discouraging male involvement. One respondent stated:

The working environment affects going to clinic. I can't fail to go on duty because I am escorting my wife to clinic. Even if you tell the supervisor you are taking your wife to clinic, he/she will tell you to let the wife go alone while you report to work. (Male Participant 1, FGD 1).

Economic pressures also played a significant role, particularly for men who were primary income earners. Participants described how the need to provide for their families often took precedence over attending clinic visits. As noted by one participant:

Another thing is you find most women in town are housewives and their husband are breadwinners who are largely self-employed. They leave their homes to go earn a living for their families thus lack time to accompany their partners to clinic. (Male Participant 2, FGD 1).

Healthcare providers corroborated these views, further emphasizing that employment arrangements such as distant work locations and casual labour reduced opportunities for male involvement. For instance, one nurse explained:

“There is also a case where the husband is working far away from the wife and therefore the woman has no choice but to go alone.” (Nurse-midwife Participant 3, FGD 1)

Similarly, daily wage earners were described as particularly constrained, as attending clinic visits could result in loss of income for the day. This was illustrated by the following account:

Maybe the man is a casual worker who is paid on daily basis, so if you tell him to accompany the wife to clinic, he imagines he will lose the wages so he will rather not go because if he does, the whole day will be wasted.” (Nurse-midwife Participant 3, FGD 3).

Finally, participants also noted challenges related to obtaining permission from employers, with uncertainty around being granted time off further discouraging attendance:

But permission from work is the problem. You can be given off or not. Clinic is from Monday to Friday that starts in the morning and ends at 2.00pm. If you come late, you are told to come the next day.” (Male Participant 6, FGD 2).

I would prefer to let my wife go to the clinic alone while I go out to hustle. Our work environment makes it difficult to accompany our spouses to the clinic. I cannot afford to miss duty just to escort my wife. Even if you inform your supervisor that you need to take your wife to the clinic, especially when you have already been away from work, they will likely tell you to let her go alone

while you continue working. They feel that since the wife has time to attend the clinic, there is no need for the man to accompany her. You cannot argue with your boss, because insisting on going could even cost you your job (Male Participant 4, FGD 1).

Overall, these findings indicate that work-related constraints—including rigid clinic hours, unsupportive workplace policies, economic pressures, and employment arrangements significantly limit male partner involvement in maternal and child health services.

4.4.3 Fear of HIV Testing

Fear of undergoing HIV testing emerged as a key barrier to male partner involvement in the Maternal and Child Health (MCH) department. Participants reported that routine HIV testing conducted during the first antenatal care (ANC) visit generated anxiety among some men, discouraging their attendance. As a result, some male partners avoided accompanying their spouses during the initial visit and instead waited for their partners' test results before deciding whether to participate in subsequent visits.

This concern was illustrated by the following participant narratives:

I think some men fear HIV testing. You know the first visit you are tested for HIV... even if you come with evidence of previous testing, they will still repeat testing. So, some men keep away from the first visit and wait for the results of their wives. If it turns out negative, they may go for subsequent clinic visits. (Male Participant 2, FGD 2)

“Some men may fear going to the clinic because of HIV testing... the woman has to be tested for HIV.” (Nurse-midwife Participant 6, FGD 2)

You find in most cases men have extramarital relationships. One may fear being tested because if found positive, he may be blamed for infecting the wife. Personally, I first waited for my wife's results. When I saw she was negative, I gained confidence to go for testing in the next visit. (Male Participant 2, FGD 1).

“Some male partners assume that if their partners test HIV negative, then they are also negative, and therefore see no need to accompany them for testing.” (Nurse-midwife Participant 2, FGD 1).

Overall, these findings suggest that fear of HIV testing often linked to perceived risk of a positive result, concerns about infidelity, and misconceptions about shared serostatus significantly undermines male partner participation in ANC services, particularly during the first clinic visit.

4.4.4 Unfavourable MCH Set-up

Respondents cited negative health care providers’ attitudes and facility practices, long queues and waiting time, absence of male staff in the MCH, boredom at the waiting bay and lack of services targeting men as barriers to men accompanying their spouses to MCH department.

(a) Health Care Providers’ Attitudes and Facility Practices

Some participants noted that the attitudes of health care workers and the manner in which services are delivered may discourage male involvement in antenatal care. While some men were reportedly willing to accompany their spouses to the clinic, they often felt sidelined upon arrival. In certain instances, men were told to wait outside, thereby limiting their participation and potentially deterring them from future visits. One nurse-midwife explained:

There are men who are willing to take their spouses to the clinic, but when they go to ANC, health care workers will tell the man to remain outside. So, next time he will not accompany the wife to the clinic. (Nurse-midwife Participant 6, FGD 2).

In addition to exclusion from the consultation room, negative attitudes from health care workers were also cited as a barrier. Some providers were perceived as unwelcoming or indifferent to the presence of male partners. As observed by two nurses:

Sometimes, they complain that even the attitude of health care workers is negative. They are not friendly to encourage men to attend the clinic frequently, so they tend to relax and not accompany their partners. Even when they accompany their partners, at times they are not given a chance to enter the room together. (Nurse-midwife Participant 5, FGD 1)

When it comes to maternity department in public hospitals, we rarely give these men an opportunity to be with their wives because the moment they come during admission, we actually tell them to buy certain items and leave their wives behind. So, they feel they are not part of the procedure or whatever is happening. (Nurse-midwife Participant 7, FGD 3).

(b) Long Ques and waiting time

Long waiting times at antenatal care (ANC) clinics were identified as a significant barrier to male partner involvement. Participants noted that men were generally less tolerant of prolonged delays and more sensitive to time constraints, particularly when clinic attendance conflicted with work or income-generating activities. As a result, extended waiting periods at health facilities discouraged many men from accompanying their partners.

This concern was highlighted by healthcare providers, who observed that men often preferred services that minimized waiting time:

Men don't like lining up together with women, and maybe the lines are so long and they want to go somewhere to look for money or work. So, they prefer somewhere where they can be seen immediately so that they can go look for money. (Nurse-midwife Participant 3, FGD 2)

Similarly, delays in receiving care were perceived as a deterrent to clinic attendance:

“Men may also not want to attend clinic because of delay in receiving care. They don't want to line up.” (Nurse-midwife Participant 6, FGD 3).

Participants further attributed long waiting times to systemic challenges within health facilities, particularly shortages of healthcare personnel:

“The shortage of health care workers is another issue. The waiting time is long because they are waiting for that one nurse who is attending those who came first.” (Nurse-midwife Participant 5, FGD 1)

In addition to time-related concerns, some men expressed discomfort with the clinic environment, noting that ANC clinics are predominantly attended by women, which limited opportunities for social interaction and contributed to feelings of unease:

“You can see the queue is long and the majority who go there are women. As a man, you cannot easily interact with them... it becomes challenging to even remain in the line.” (Male Participant 1, FGD 1).

However, a few participants (n=3) indicated that long waiting times were not necessarily a barrier if they had sufficient time available, such as on a day off, and could use the opportunity for social interaction with other men.

Overall, these findings suggest that long queues, delays in service delivery, and structural limitations within health facilities combined with competing economic priorities and discomfort in female-dominated clinic spaces collectively hinder male partner involvement in ANC services.

c. Staff Gender in the MCH

The gender of health care providers also emerged as a significant factor influencing male involvement in antenatal care. Participants noted that the predominance of female staff in MCH clinics often made men uncomfortable, particularly when discussing sensitive topics. Some men felt reluctant to engage with female providers, especially if they were younger or unfamiliar. One nurse noted: “Yes, absence of male staff can also contribute. It is really hard to see a male nurse working in MCH.” (Nurse-midwife Participant 4, FGD 3).

This concern was further emphasized by another nurse who explained that some men found it difficult to open up to female health workers.

Some men are unable to disclose to female nurses. You will hear them say they don't want to be attended to by female nurses. In most MCH clinics, we have female nurses working there, so men will not go to clinic at all because they know they will find female nurses. (Nurse-midwife Participant 2, FGD 2).

One male participant described the discomfort men feel when discussing intimate matters with younger female staff:

If you went to the clinic and found the one attending to you is a female staff younger than you and you want to say something about the wife, you will be shy to talk. For example, issues of sexual intercourse. (Male Participant 7, FGD 2)

D. Boredom at the waiting bay with lack of services targeting men

Participants reported that the design and delivery of services in public health facilities do not adequately engage or attract male partners. A key issue raised was the unappealing and unstimulating nature of waiting areas in Maternal and Child Health (MCH) clinics. Many respondents noted that the absence of informative or entertaining materials contributes significantly to boredom among men accompanying their spouses.

In comparing public and private facilities, participants observed notable differences in how clients are engaged. Private hospitals were described as more welcoming and better equipped to occupy clients during waiting periods. These facilities often provide amenities such as televisions, magazines, and access to current information, which enhance the overall experience. One nurse-midwife highlighted this disparity, stating:

If you look at MCH in private and government hospitals, there is a lot of difference. I mean even while seated there, you are occupied with a magazine, TV and you won't miss news. But in a public facility, there are just 1, 2, or 3 posters from January to December, so the men will come, read all those posters and get bored. (Nurse-midwife Participant 3, FGD 1).

In addition to the lack of engaging materials, the physical setup of public MCH clinics was identified as a barrier to male participation. Participants pointed out that seating arrangements and clinic layouts are not designed to accommodate or encourage male involvement. This limitation restricts men from actively participating in key services such as antenatal, postnatal, and immunization care. As one nurse-midwife explained:

The other thing is the set up. You know even the sitting, the bench, tables. I think in most of the public hospitals when it comes to the sitting arrangement during immunization, antenatal care and postnatal care, they don't have a mechanism where men can come in and participate in all the clinic activities. (Nurse-midwife Participant 1, FGD 1).

Male participants also expressed the need for simple improvements to make the waiting experience more engaging. For instance, one participant suggested:

“There should be a magazine, TV so that you are not bored” (Male Participant 6, FGD 2).

Beyond the physical environment, participants emphasized that MCH services are often framed as exclusively for women and children, which discourages male involvement. This perception makes men feel excluded and reinforces the idea that reproductive health is not their responsibility. As one nurse observed:

“Talk of reproductive health needs, men just feel MCH is mother and child health.” (Nurse-midwife Participant 5, FGD 3).

Overall, these findings indicate that both the clinic environment and prevailing perceptions of MCH services contribute to male disengagement. Addressing these gaps could enhance male participation and promote more inclusive maternal and child health services.

e. Lack of Privacy

To some participants, lack of privacy was also noted as a hindrance to men accompanying their spouses to clinic.

If you check at public facilities, we mostly have students making the population of people in one clinic room quite a large number. You have the nurse and almost 10 students in a room and I think this discourages men as they feel uncomfortable making them unable to air their issues in the presence of such a huge crowd of people. I personally had such an incidence where I was in the clinic with very many students and the man refused to enter the room because we were too many (Nurse-midwife Participant 1, FGD 2)

‘When it comes to privacy as one of us has mentioned, is another issue to them because they feel like the information being given to them and questions being asked are heard by other people’ (Nurse-midwife Participant 5, FGD 1).

4.4.5 Lack of awareness

Lack of awareness regarding the importance of male involvement in Maternal and Child Health (MCH) services emerged as a prominent barrier. Participants consistently noted that many men were not adequately informed about their role in supporting their partners during antenatal care (ANC), which limited their participation.

Both healthcare providers and male participants emphasized that insufficient knowledge and lack of empowerment contributed to low involvement:

“Another reason is due to lack of awareness. The government has ignored men who have no knowledge on the need to accompany their partners.” (Nurse-midwife Participant 6, FGD 1).

“Men lack information, so they basically don’t know why they need to go to MCH clinic. Not being empowered enough is the reason why they don’t support their partners.” (Male Participant 1, FGD 2)

This lack of awareness was further attributed to the way maternal health services are framed within communities, with a predominant focus on women and children, often excluding men:

Most of the time we actually talk about the mother and the child, and rarely do we talk about the man. So, when men see the mother and child booklet, they think this is a clinic for the mother and child alone, hence discouraging them from accompanying their spouses. (Nurse-midwife Participant 7, FGD 3)

Additionally, disparities in knowledge were linked to socioeconomic factors, with participants noting that men from lower socioeconomic backgrounds were particularly affected due to limited exposure and access to information:

The reason why you find men don't go to clinic, especially in public hospitals, is lack of knowledge. You find those people with poor economic status in one-way lack knowledge and exposure, and they don't understand the importance of accompanying their women to clinic. (Nurse-midwife Participant 1, FGD 1)

Overall, these findings indicate that inadequate awareness, limited health education targeting men, and the perception of MCH services as exclusively for women and children significantly hinder male partner involvement in ANC.

4.5 Strategies to Promote Male Partner Involvement

In order to develop an effective intervention model, the researcher explored on mechanism to promote male partner involvement. Four categories emerged as possible strategies required to encourage male partner participation in MNCH services. These are: Creation of community awareness and staff sensitization, re-organization and restructuring of the MCH set-up, provision of health services that address male health needs and inviting male partners to the MCH clinic as shown in table 4.3.

Table 4.3: Categories and Sub-themes

Category	Sub-themes
Creation of community awareness and staff sensitization	Community education and male involvement in MCH. Staff training on male-friendly maternal health services. Awareness campaigns targeting men's role in MCH
Re-organization and restructuring of MCH environment	Prioritization of couples in MCH services. Reduction of service delays and improvement of turnaround time. Centralization and integration of male-friendly services. Male-friendly healthcare environment (male staff, extended hours). Strategies for improving male reception and engagement
Provision of health services that address Male health needs	Routine male health screening at MCH (BP, BMI, prostate). Comprehensive health assessments for male partners. Incorporation of male-specific health services in MCH clinics
Male invitation to MCH	Formal invitation of male partners to MCH services. Issuing reminder messages and phone calls

4.5.1 Creation of Community Awareness and Sensitization

Participants emphasized the need for increased community awareness and sensitization as a key strategy for promoting male involvement in Maternal, Newborn and Child Health (MNCH) and broader reproductive health services. There was a strong consensus that both the general community and healthcare providers require targeted education to address existing misconceptions and cultural barriers that limit male participation.

At the community level, participants highlighted the importance of engaging influential figures such as religious leaders and community opinion leaders. These individuals were seen as critical in shaping attitudes and addressing deeply rooted

cultural and religious beliefs that discourage male involvement in MNCH services. One participant explained:

‘Am thinking now that we have religious and cultural issues that hinder male partners from getting involved, we need to engage church leaders and other community opinion leaders and inform them on the importance of male involvement in MNCH services’ (Nurse-midwife, FGD 1).

In addition to engaging community leaders, participants also stressed the need to empower women with knowledge and communication skills that would enable them to encourage their partners to participate in clinic visits. Women were viewed as key agents of change within households who could influence male behaviour when adequately informed. As one nurse stated:

‘We should empower the women and inform them on the need to encourage their partners to accompany them to clinic’ (Nurse-midwife, FGD 2).

Furthermore, participants noted that sensitization efforts should not be limited to the community alone but should also target healthcare workers within MCH units. It was observed that the attitudes of healthcare providers play a significant role in either encouraging or discouraging male involvement. Participants suggested that all hospital staff, regardless of their role, should adopt a positive and welcoming attitude toward men accompanying their partners. One respondent emphasized:

‘Change of attitude should be to all hospital workers right from the gate, cleaners, doctors and nurses. If we change attitude towards it, we become positive about men coming to the hospital and welcome them’ (Nurse-midwife, FGD 3).

Participants also proposed outreach initiatives where healthcare workers actively engage men within their communities rather than expecting them to seek services at health facilities. This approach was considered particularly important due to prevailing fears and misconceptions, especially regarding HIV testing, which deter men from visiting clinics. A male participant noted:

‘The government should send healthcare workers to the community where men will get the information. It is hard to tell a man to go to the hospital because they will think of being tested HIV’ (Male participant 3, FGD 1).

Similarly, another participant underscored the general lack of awareness among men regarding their role in MNCH services:

‘The society should be educated on the importance of accompanying their wives to clinic. Most men are not aware of the need to go to clinic’ (Male participant 4, FGD 2).

Overall, the findings indicate that enhancing community awareness and sensitization through multi-level interventions targeting both the public and healthcare providers could play a crucial role in improving male involvement in MNCH services.

4.5.2 Re-organization and Restructuring of MCH Environment

Participants emphasized the need to re-organize and restructure the Maternal and Child Health (MCH) environment to make it more inclusive and accommodating for male partners. The current setup of most public MCH clinics was perceived as largely female-centred, with limited consideration for male participation. Respondents proposed a range of structural and operational changes aimed at improving male engagement, including active involvement of men in care processes, modification of clinic infrastructure, deployment of male healthcare providers, prioritization of couples during service delivery, extension of clinic hours, and enhancement of privacy within service areas.

A key recommendation was to actively involve male partners in the care and management of their spouses during antenatal, postnatal, and child welfare services. Participants argued that meaningful engagement would increase men’s awareness and appreciation of MNCH services, thereby motivating them to attend clinics more consistently. One nurse-midwife explained:

‘If men go to the room and the doctor engages them in the care and management, men will realize the importance of coming to the clinic.’ (Nurse-midwife, FGD 1).

Similarly, another participant highlighted practical ways of involving men in clinical processes:

Involve male partners actively by letting them in during ANC. Let him listen to the foetal heart rate. That way they will feel involved. When they bring the baby for CWC, they may not be able to undress the baby but let them hold the baby during immunization (Nurse-midwife, FGD 3).

These suggestions reflect the broader perception that experiential involvement rather than passive presence can significantly enhance male participation. When men are included in discussions, examinations, and caregiving activities, they are more likely to develop a sense of responsibility and connection to maternal and child health outcomes.

Participants also pointed to the need for improvements in the physical environment of MCH clinics. The current infrastructure was described as inadequate in accommodating couples, often lacking basic provisions such as appropriate seating arrangements and recreational amenities. Respondents suggested that simple modifications, such as providing two seats for couples and installing television sets, could make clinics more welcoming to men. As one male participant noted:

‘The environment/setting of the MCH clinic should be in such a way that it attracts men to be there. Having two seats for the couple, and a television set is important’ (Male participant, FGD 1).

In addition to improving physical infrastructure, participants recommended operational changes aimed at reducing waiting time and enhancing service efficiency. One widely discussed strategy was the prioritization of couples during service delivery. This approach was seen as a practical way of encouraging male involvement, given that long waiting times were identified as a major deterrent for men. Participants expressed the following views:

‘Giving priority to couples remains a good way of encouraging male partners attend MCH clinic because it reduces waiting time’ (Male participant, FGD 1).

‘We can try and come up with ways of minimizing delays. Any woman accompanied with their partner should be given priority to avoid men spending a lot of time in the facility’ (Nurse-midwife, FGD 2).

However, this proposal was not without contention. Some participants raised concerns about potential inequities, particularly for women who attend clinics without partners due to various circumstances. One respondent cautioned:

What has been brought earlier about men being given first priority when they accompany their spouses is good but at the same time, you see the issue that came up about those women who don’t have spouses for justifiable reasons may feel it’s unfair. However, still it remains a good way of encouraging them to come because it reduces waiting time (Nurse-midwife Participant 3, FGD 1).

Another participant emphasized the broader need to improve turnaround time for all clients:

The first thing is we improve on turnaround time. When they come, we should not keep them waiting for long. They should be served as fast as possible. We should not keep them long on the que because obviously they will get bored and go. Give them priority so that we don’t keep them long on the que. (Nurse-midwife Participant 1, FGD 3).

Closely related to active involvement is the issue of allowing male partners to enter examination rooms. A subset of participants (n=4) strongly supported this approach, arguing that it would foster transparency, shared understanding, and greater engagement in maternal health care. One nurse elaborated:

Men will sit at the reception waiting for the woman to be attended to then they go but if they go to the room and the doctor engages them in the discussion, they will realize the importance of coming to the clinic. So actually, we involve them while in the room so the doctor will examine the woman and inform both of them findings and the danger signs (Participant 2, FGD 1).

Another echoed this perspective:

‘Involve male partners actively by letting them in during ANC. Let him listen to the foetal heart rate. That way they will feel involved...’ (Participant 4, FGD 3).

From the male perspective, some participants welcomed the idea of being present during examinations, as it would enhance their understanding of their partner’s health:

‘During examination, it’s between the woman and the healthcare provider and not the man but I feel it’s good if I am allowed to enter the room to witness and be informed’ (Participant 6, FGD 2).

However, contrasting views emerged regarding cultural norms and personal comfort. Some men expressed discomfort with being present during physical examinations, particularly when conducted by male healthcare providers. These concerns were rooted in modesty, privacy, and cultural perceptions of appropriateness. One participant explained:

‘For me, I will tell my wife to enter and be assessed because inside the room, there are procedures done which require removing clothes. Say she is removing clothes and the person attending to her is a man, I will feel shy seeing her naked in front of the health care worker. I will feel that it is not proper for him to touch my wife during examination in my presence. It will be better if he examines her in my absence to avoid any fears and anxiety’ (Male Participant 7, FGD 2).

Another added:

‘If it is a female staff, I will accept to enter the room but if it’s a man, I will be uncomfortable’ (Male Participant 5, FGD 1).

These findings highlight the need for culturally sensitive approaches when implementing policies that promote male involvement in clinical spaces.

Participants further suggested that the deployment of male healthcare providers within MCH clinics could enhance male participation. Both nurses and male respondents indicated that men may feel more comfortable interacting with male staff, particularly when discussing sensitive issues. A nurse observed:

‘I just want to use an example where I work, we have male midwives and doctors in the clinic and this encourages them to come’ (Participant 2, FGD 1).

Another participant emphasized the importance of gender balance:

‘Deploy more male nurses so that we try to balance the numbers between female and male nurses in the department’ (Participant 3, FGD 2).

From the male perspective, concerns were raised about engaging with younger female staff, especially on topics related to sexual and reproductive health:

I can have a problem if I went to the clinic and found the staff attending to me is a female staff and younger than me. When I want to say something about my wife, I will feel the staff is younger so how will I tell her about my wife especially issues to do with sexual intercourse (Participant 7, FGD 2).

The need to improve privacy within MCH clinics and maternity wards was also strongly emphasized. Participants argued that lack of privacy discourages male involvement, as many men feel uncomfortable being exposed in open or crowded clinical environments. Suggested interventions included attending to couples individually, creating private consultation rooms, installing partitions or cubicles in labour wards, and limiting the number of trainees present during service delivery.

One nurse noted:

‘I also think if possible we should reduce the number of nursing students in public health facilities so that men can be feel comfortable’ (Participant 2, FGD 2).

Another added:

‘We should be able to improve on privacy to allow only one couple at a time in a room. If we allow that, then we shall encourage men to accompany their spouses to clinic’ (Participant 6, FGD 3).

From the male perspective, privacy was directly linked to dignity and social perception:

‘If they want men to attend clinic, they should be taken to a private room. Being seen in an open place is not good. You are exposed to everyone passing by including friends, relatives, neighbours and this makes one feel shy being with their wife’ (Participant 4, FGD 2).

In summary, participants underscored that restructuring the MCH environment requires a multifaceted approach that addresses physical infrastructure, service delivery processes, staff composition, and socio-cultural sensitivities. Implementing these changes could significantly enhance male involvement and contribute to improved maternal and child health outcomes.

4.5.3 Provision of Health Services that Address Male Health Needs

From the discussions, it was apparent that health care workers need to expand the scope of MCH services to include those that address male health needs. Specifically mentioned were taking blood pressure, body weight and prostate cancer screening. Some respondents felt there is need to change the name ‘Mother child booklet’ to a new name which reflects male inclusion. The following quotes illustrate this:

‘We need to be doing some things like taking blood pressure (B.P), physical examination, showing that we don’t only have the interest of the woman but also the interest of the man in the family’ (Nurse-midwife, FGD 1).

‘We need to tailor make services that will make men be attracted to the MCH and even change the name from MCH and include male partner as well. We

should also have services such as prostate cancer screening that men know will address their needs’ (Nurse-midwife, FGD 2).

4.5.4 Issuing of Male Invitation Letters

In order to reach to men in the community, it was suggested that nurses working in the MCH should issue male invitation letters to their female partners attending ANC services. One of the participants remarked:

‘Actually, we should consider giving invitation letters to ANC mothers when they attend MCH services’ (Nurse-midwife, FGD 2).

4.6 Phase Two: Results of the Development of the Male Partner Involvement Intervention Model

The development of the intervention model was guided by the framework proposed by Wight et al. (2015). Following identification of key thematic areas from the exploratory study, an initial intervention model was developed and subjected to expert review by eight nurse-midwives. The experts were nurse-midwives who had worked in the MCH for at least three years. Four of the participants had already participated in the explorative phase. During the consensus-building process, several modifications were made to ensure feasibility within the study setting. Specifically, physical examination of male partners was removed due to limited space within the Maternal and Child Health (MCH) clinic, and referral mechanisms were adopted for those requiring medical attention. Additionally, proposed laboratory investigations such as the Venereal Disease Research Laboratory (VDRL) test for syphilis were excluded due to lack of available test kits for male clients. The intervention model was further refined following pilot testing at Ruiru Sub-County Hospital. Out of the 10 invitation letters issued during the pilot study, 4 male partners responded and accompanied their spouses to the antenatal clinic, resulting in a response rate of 40%. The moderate uptake of male partner participation prompted incorporation of additional strategies to enhance response rates, including follow-up phone calls, text message reminders, and transport reimbursement. The pilot study further confirmed that the study tools were clear, understandable, and appropriate for data collection, with only minor adjustments

made to improve the clarity and flow of questionnaire items. The final intervention model incorporated the following components:

- I. Formal invitation of male partners through written letters
- II. Follow-up communication via phone calls and text messages
- III. Provision of transport reimbursement to facilitate attendance
- IV. Creation of a male-friendly MCH environment
- V. Health education for couples on maternal and newborn health
- VI. Promotion of male involvement in antenatal, delivery, and postnatal care
- VII. Voluntary couple HIV counselling and testing
- VIII. Priority service provision for couples attending together
- IX. Referral of male partners with identified health concerns

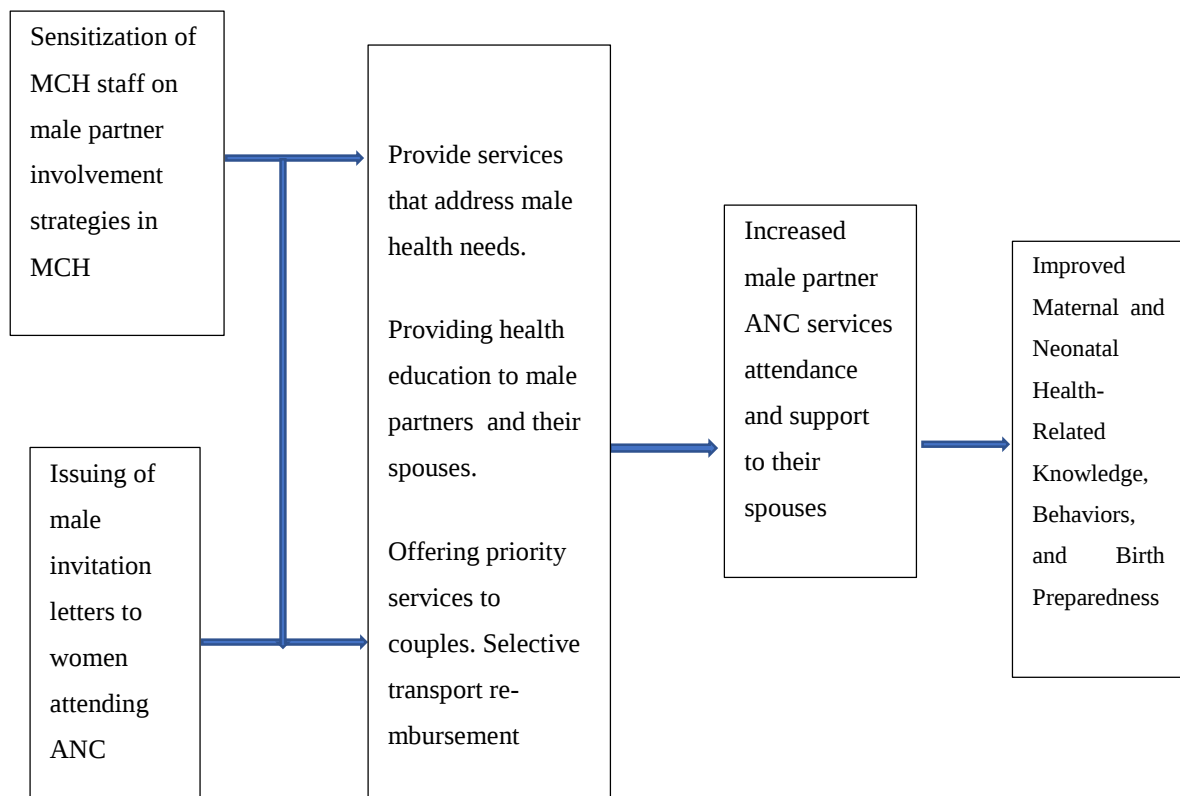


Figure 4.1: Intervention Model to Promote Male Partner Involvement

4.7 Phase Three: Quasi-experimental Study Results

4.7.1 Overall Socio-Demographic Characteristics of Participants

Sixty pregnant women were recruited in both the intervention and control group. In both groups, majority of participants were protestants (intervention-83.3%; control- 76.7%) and housewives (intervention- 80.0%; control- 63.3%). Nearly a half (46.7%) had attained tertiary education in intervention as compared to 30.0% in the control group. Furthermore, approximately a half of participants in the intervention group (53.3%) were having their first pregnancy as compared to 23.3% in the control group. The socio-demographic characteristics of participants are summarised in Table 4.4.

Table 4.4: Comparison of Respondents' Socio-Demographic Characteristics Between Control and Intervention Groups

Characteristic	Category	Control Group Mean (SD) / n (%)	Intervention Group Mean (SD) / n (%)
Age of Respondents		29 (5.24)	25 (3.85)
Religion	Protestant	23 (76.7%)	25 (83.3%)
	Muslim	1 (3.3%)	0 (0.0%)
	Catholic	6 (20.0%)	5 (16.7%)
Occupational Status	Self-employed	9 (30.0%)	3 (10.0%)
	Casual worker	0 (0.0%)	1 (3.3%)
	Employed	2 (6.7%)	2 (6.7%)
	Housewife	19 (63.3%)	24 (80.0%)
Educational Level	No education	1 (3.3%)	0 (0.0%)
	Primary	10 (33.3%)	0 (0.0%)
	Secondary	10 (33.3%)	16 (53.3%)
	Tertiary	9 (30.0%)	14 (46.7%)
Gravidity	Gravida 1	7 (23.3%)	16 (53.3%)
	Gravida 2	7 (23.3%)	11 (36.7%)
	Gravida 3	8 (26.7%)	1 (3.3%)
	Gravida 4	2 (6.7%)	2 (6.7%)
	Gravida 5	6 (20.0%)	0 (0.0%)

Note. Values are presented as mean (SD) or n (%).

4.7.2 Baseline Socio-Demographic Characteristics Between Control and Intervention Groups

(i) Age and Gravidity

An independent sample t-test was conducted to assess the differences in mean age between participants in the intervention and control groups. The mean age was 25.10 years (SEM = 0.956) for the intervention group and 28.80 years (SEM = 0.702) for the control group. The results showed a statistically significant difference in mean age ($t(58) = 3.12, p = 0.003$) between the two groups. Similarly, a Mann Whitney U test

showed that gravidity was significantly higher in the control (median =3.0) group compared to the intervention group (Median,=1), $U= 235.5$, $p<0.001$). This indicates that the control and intervention groups were relatively different in terms of these characteristics. These findings are summarized in Table 4.5.

Table 4.5: Descriptive and Inferential Statistics for Age and Gravidity

Variable	Group	N	Mean	Median	t(df)	Sig. (t-test)	U	Sig. (Mann-Whitney)
Age of respondents	Control	30	28.80		3.12	0.003		
	Intervention	30	25.10		(58)			
Gravidity	Control	30		3			235.5	<0.001
	Intervention	30		1				

Note. Independent t-test used for age; Mann–Whitney U test used for gravidity.

(ii) Religion, Occupation and Education

Fisher-Freeman Halton Exact tests in Table 4.6 indicated no statistically significant differences between the intervention and control groups in terms of religion ($\chi^2=1.174$, $p=0.748$) and occupation ($\chi^2=5.281$, $p= 0.212$), suggesting that the two groups were relatively comparable in these aspects. However, there was a statistically significant difference in educational attainment between the groups (15.967, $p=<0.001$).

Table 4.6: Fisher-Freeman-Halton Exact Test Results for Association Between Groups and Selected Socio-Demographic Characteristics

Variable	Test Statistic	Exact Significance (2-tailed)
Religion	1.174	.748
Occupation	5.281	.212
Education	15.967	< .001

Fisher-Freeman-Halton exact tests were conducted to assess associations between group assignment (control vs. intervention) and socio-demographic variables. Significance level set at $p < .05$.

Although age, gravidity and education level were statistically significantly different between the control and intervention groups, binary logistic regression analysis showed that these socio-demographic characteristics did not have a significant effect on the outcomes, as indicated by p-values of 0.473, 0.863 and 0.895, respectively.

4.7.3 Baseline Maternal and Neonatal Health Indicators

4.7.3.1 Knowledge on At least Two and Three Danger Signs

Knowledge was categorised as knowing at least two danger signs and at least three danger signs in pregnancy, with the latter representing a higher level of knowledge. Although these categories overlap, the distinction allowed for analysis of varying degrees of knowledge improvement following the intervention. Table 4.8 shows that 36.7% ($n = 11$) and 23.3% ($n = 7$) of the male participants in the intervention and control group had knowledge on at least two danger signs in pregnancy. Additionally, 6.7 % ($n = 2$) and 3.3% ($n = 1$) of the participants in the intervention and control group had knowledge on at least three danger signs in pregnancy. The chi-square tests of independence and Fisher's Exact test showed no statistically significant difference in knowledge of at least two and three danger signs in pregnancy between control and intervention groups ($\chi^2(1) = 1.313$, $p = 0.252$ and odds ratio= 0.483, $p = 1.000$) (Table 4.7).

4.7.3.2 Duration of Exclusive Breastfeeding in Pregnancy

Approximately 56.7 % ($n=17$) of male partners in the intervention group, compared to 83.3 % ($n=25$) in the control group, were aware of the recommended duration of exclusive breastfeeding (Table 4.7). The chi-square tests of independence showed a statistically significant difference in knowledge about the duration of exclusive breastfeeding between the groups, $\chi^2(1) = 5.079$, $p = 0.024$ (Table 4.7).

Table 4.7: Men's Knowledge on Danger Signs in Pregnancy and Duration of Exclusive Breastfeeding

Variable	Response	Control n (%)	Intervention n (%)	Statistic	p
Knowledge of at least two danger signs in pregnancy	No	23 (76.6)	19 (63.3)	1.313	.252
	Yes	7 (23.3)	11 (36.7)		
Knowledge of at least three danger signs in pregnancy	No	29 (96.7)	28 (93.3)	OR=0.483	1.000
	Yes	1 (3.3)	2 (6.7)		
Knowledge of duration of exclusive breastfeeding	No	5 (16.7)	13 (43.3)	5.079	.024
	Yes	25 (83.3)	17 (56.7)		

4.8 The Effect of the Male Partner Involvement on Maternal and Neonatal Health- Related Knowledge, Behaviours, and Birth Preparedness

4.8.1 Level of Male Partner Accompaniment to Antenatal Clinic

The total number of revisits during which male partners accompanied their spouses to antenatal care (ANC) was recorded. In the intervention group, male partners continued to attend, with the highest proportion (46.7%) accompanying their spouses to three visits. In the control group, three male partners accompanied their spouses, with one attending twice and the other two attending once each. Furthermore, majority of the male partners in the intervention (90%) accompanied their spouses more than once in the ANC as compared to 3.3% in the control group (Table 4.8 and Figure 4.2). Since the data was not normally distributed, a Mann-Whitney test was performed and revealed a statistically significant difference in male partners' ANC attendance between the control and intervention groups ($U = 11.000$, $Z = -.6.88$, $P < 0.001$, $r = 0.89$), indicating a very large effect size.

Table 4.8: Male Partners Attendance at ANC by Number of Visits

Number of ANC Visits	Intervention n (%)	Control n (%)	U	p	Effect size (r)
One Visit	3 (10.0)	2 (6.7)	11.000	< .001	.89
Two Visits	10 (33.3)	1 (3.3)			
Three Visits	14 (46.7)	0 (0.0)			
Four Visits	2 (6.7)	0 (0.0)			
Five Visits	0 (0.0)	0 (0.0)			
Six Visits	1 (3.3)	0 (0.0)			

4.8.2 Effect of the Intervention on Knowledge on Danger Signs in Pregnancy, Duration of Exclusive Breastfeeding, and Couple HIV Testing

The intervention significantly enhanced men's knowledge of pregnancy danger signs and the recommended duration of exclusive breastfeeding. In the intervention group, knowledge of at least two danger signs increased markedly from 36.7% (n = 11) to 93.3% (n = 28), while the control group showed only a slight increase from 20% (n = 6) to 23.3% (n = 7). A Chi-square test of independence confirmed a statistically significant effect ($\chi^2(1) = 17.330$, $p < 0.001$), with a large effect size ($\phi = 0.537$) (Table 4.9). Similarly, knowledge of at least three danger signs rose sharply in the intervention group from 6.7% (n = 2) to 70% (n = 21), with no change in the control group (3.3%, n = 1). This effect was also statistically significant ($\chi^2(1) = 21.260$, $p < 0.001$), with a large effect size ($\phi = 0.600$) (Table 4.9).

Regarding knowledge of the recommended duration of exclusive breastfeeding, significant improvements were observed in both groups. In the intervention group, knowledge increased from 56.7% (n = 17) to 96.7% (n = 29), while the control group improved from 83.3% (n = 25) to 90% (n = 27). The Chi-square test revealed a statistically significant difference between groups ($\chi^2(1) = 9.317$, $p = 0.005$), with a medium effect size ($\phi = 0.394$) (Table 4.9).

Additionally, 70% (n = 21) of couples in the intervention group received HIV counselling and testing, compared to none in the control group. Fisher's Exact Test

confirmed a statistically significant difference ($p < 0.001$), with a very large effect size ($\Phi = 0.760$) (Table 4.9).

Table 4.9: Knowledge on Danger Signs, Duration of Exclusive Breastfeeding in Pregnancy and Couple HIV Testing Status

Variable	Group	Pretest Yes (%)	Post-test Yes (%)	χ^2 (df)	p	Φ
≥ 2 danger signs	Control	6 (20.0)	7 (23.3)	17.330 (1)	< .001	0.537
	Intervention	11 (36.7)	28 (93.3)			
≥ 3 danger signs	Control	1 (3.3)	1 (3.3)	21.260 (1)	< .001	0.600
	Intervention	2 (6.7)	21 (70.0)			
Exclusive breastfeeding	Control	25 (83.3)	27 (90.0)	9.317 (1)	.005	0.394
	Intervention	17 (43.3)	29 (96.7)			
Couple HIV testing	Control	0 (0.0)	0 (0.0)	—	< .001	0.760
	Intervention	0 (0.0)	21 (70.0)			

4.9 Effect of Intervention on Regular IFAS intake, Individual Birth Plan and Hospital Birth

A chi-square test of independence was conducted to analyse and compare selected maternal and neonatal outcomes, examining the association of male partner involvement with the regular intake of IFAS, emergency transport plan, delivery by skilled birth attendants (hospital births), and purchase of all birth kit items. Regular intake of IFAS meant that a woman did not miss taking even a single dose. Women were asked to confirm birth kit items purchased before hospital admission. The items included cotton wool, a razor blade or surgical blade, a string or cord clamp for tying the umbilical cord and a pair of gloves.

The intervention had a significant positive impact on individual birth plan, as reflected in the purchase of complete birth kits and emergency transport preparedness. Nearly all women in the intervention group (93.3%, $n = 28$) had acquired all required birth kit components before the onset of labour, compared to 40.0% ($n = 12$) in the control group. A Chi-square test confirmed that this difference was statistically significant,

$\chi^2(1) = 19.200$, $p < 0.001$, with a large effect size ($\phi = 0.566$), indicating a strong association between male partner involvement and purchase of complete birth kits (Table 4.10). A significantly higher proportion of women in the intervention group (93.3%, $n = 28$) had planned for emergency transport compared to those in the control group (43.3%, $n = 13$), as shown in Table 4.10. A Chi-square test of independence revealed a statistically significant association between male partner involvement and transport planning, $\chi^2(1) = 17.330$, $p < 0.001$, with a large effect size ($\Phi = 0.537$), indicating a strong practical impact of the intervention. The study also explored the influence of male partner involvement on adherence to iron and folic acid supplementation during pregnancy. A higher proportion of women in the intervention group reported regular IFAS intake (70.0%, $n = 21$) compared to those in the control group (46.7%, $n = 14$). However, the difference was not statistically significant ($p = 0.115$). The effect size, measured using Phi ($\phi = 0.237$), suggested a small practical effect of the intervention on IFAS adherence (Table 4.10).

There was no statistically significant difference between the two groups regarding place of delivery as all women in the control group (100%, $n = 30$) delivered in a health facility compared to 96.7% in the intervention group ($p = 1.000$) (Table 4.10).

Table 4.10: Chi-square Test Results for Effect of Intervention on Birth Preparedness and Maternal Care Behaviour (N = 60 per Variable)

Variable	Group	No n (%)	Yes n (%)	Total	χ^2 (df)	p-value / Φ
Bought all						
birth kit items	Control	18 (60.0)	12 (40.0)	30	19.20 (1)	< .001 / 0.566
	Intervention	2 (6.7)	28 (93.3)	30		
Regular						
IFAS intake	Control	14 (46.7)	16 (53.3)	30	3.36 (1)	.115 / 0.237
	Intervention	21 (70.0)	9 (30.0)	30		
Emergency						
transport plan	Control	17 (56.7)	13 (43.3)	30	17.33 (1)	< .001 / 0.537
	Intervention	2 (6.7)	28 (93.3)	30		
Birthplace	Control	0 (0.0)	30 (100.0)	30	1.02 (1)	1.00 / 0.130
	Intervention	1 (3.3)	29 (96.7)	30		

4.10 Effect of Intervention on other Male Partner Support Activities During Pregnancy and Childbirth

To enhance positive pregnancy outcomes, the intervention encouraged male partners to actively support their spouses throughout pregnancy and childbirth. This support encompassed performing household chores, engaging in joint decision-making regarding the place of delivery, providing reminders for antenatal care (ANC) appointments and iron and folic acid supplementation (IFAS), and offering physical accompaniment during childbirth. As shown in Table 4.11, male involvement in household responsibilities was significantly higher in the intervention group (83.3%, $n = 25$) compared to the control group (33.3%, $n = 10$). A Chi-square test revealed a statistically significant association between the intervention and increased household support, $\chi^2(1) = 15.429$, $p < 0.01$, with a large effect size ($\Phi = 0.507$). The study evaluated women's birth preparedness, specifically focusing on the presence of an emergency transport plan. Similarly, 43.3% of male partners in the intervention group reminded their spouses about ANC appointments, whereas none in the control group reported doing so. This difference was statistically significant, $\chi^2(1) = 16.596$, $p = 0.001$, with a large effect size ($\Phi = 0.526$). However, while a greater proportion of men in the intervention group reminded their partners to take IFAS supplements, the association did not reach statistical significance, $\chi^2(1) = 5.455$, $p = 0.052$, despite indicating a medium effect size ($\Phi = 0.302$). Joint decision-making regarding the place of birth was reported by nearly all couples in the intervention group (96.7%), compared to only 20.0% in the control group. This difference was highly significant, $\chi^2(1) = 36.274$, $p < 0.001$, with a very large effect size ($\Phi = 0.778$), highlighting the impact of the intervention in promoting shared decision-making. Moreover, 86.7% of male partners in the intervention group accompanied their spouses during childbirth, compared to 43.3% in the control group. This difference was statistically significant, $\chi^2(1) = 12.381$, $p = 0.009$, with a medium effect size ($\Phi = 0.454$).

Table 4.11: Chi-Square Test Results for the Effect of the Intervention on other Male Partner Support Activities (N=60 per Variable)

Variable	Group	No n (%)	Yes n (%)	χ^2	p-value	Φ
Assisting with household chores	Control	20 (66.7)	10 (33.3)	15.43	< .001	0.51
	Intervention	5 (16.6)	25 (83.3)			
Reminder of ANC clinic appointment	Control	30 (100.0)	0 (0.0)	16.60	< .001	0.53
	Intervention	17 (56.7)	13 (43.3)			
Reminder of IFAS intake	Control	30 (100.0)	0 (0.0)	5.46	.052	0.30
	Intervention	25 (83.3)	5 (16.7)			
Joint discussion on birth place	Control	24 (80.0)	6 (20.0)	36.27	< .001	0.78
	Intervention	1 (3.3)	29 (96.7)			
Partner accompaniment for childbirth	Control	17 (56.7)	13 (43.3)	12.38	< .001	0.45
	Intervention	4 (13.3)	26 (86.7)			

4.11 Effect of Intervention on Experience of Domestic Violence

In addition, reports of domestic violence were lower in the intervention group, with only one case reported, compared to three cases (two emotional and one physical) in the control group. However, this difference was not statistically significant according to Fisher's Exact Test ($p = 1.000$), suggesting that while male involvement may have had a positive influence, the sample size may have been insufficient to detect significant differences in this outcome.

4.12 Hypothesis Testing

The null hypothesis stating that the facility-based intervention does not increase male partner involvement in maternal and neonatal health was rejected ($p < 0.05$), indicating

a significant improvement in male partner involvement following the intervention. Similarly, the null hypothesis stating that the intervention does not improve maternal and neonatal health outcomes was also rejected, demonstrating a statistically significant improvement in maternal and neonatal health outcomes in the intervention group compared to the control group.

CHAPTER FIVE

DISCUSSION

5.1 Introduction

This chapter presents the interpretation and discussion of the study findings in relation to the study objectives, existing literature, and relevant theoretical perspectives. The study employed a sequential exploratory mixed-methods design, beginning with a qualitative phase that informed the development of a facility-based intervention model, followed by a quasi-experimental quantitative phase that evaluated the effectiveness of the intervention on male partner involvement in maternal and neonatal health.

The quantitative phase involved 60 pregnant women, equally distributed between the intervention and control groups. Baseline socio-demographic characteristics were compared between the two groups to assess their comparability prior to the intervention. Overall, the findings showed that both groups were largely similar in key characteristics such as religion, occupation, education level, and gravidity, although some variations were observed. For instance, the intervention group had a slightly higher proportion of participants with tertiary education and primigravida women compared to the control group.

This chapter therefore discusses these baseline characteristics, the key outcomes of the intervention, and their implications for improving male partner involvement in maternal and neonatal health services. The findings are also interpreted in relation to existing studies and relevant behavioural and health systems frameworks guiding the intervention.

5.2 Factors Influencing Male Partner Accompaniment to MCH Department

The findings of this study mirror, in many important aspects, those of previous studies on factors influencing male involvement in maternal, newborn, and child health (MNCH) services. However, beyond simply confirming existing literature, the present study provides context-specific insights from Kiambu County that deepen

understanding of how socio-cultural, economic, and health system factors intersect to shape male partner behaviour in maternal health service utilisation.

A dominant barrier identified in this study was the influence of traditional gender norms, roles, and beliefs. Respondents consistently indicated that maternal and child health services were culturally and socially perceived as the exclusive domain of women, while men were expected to focus on productive roles such as income generation. This entrenched division of roles reflects broader patriarchal social structures where masculinity is strongly associated with being a provider rather than a caregiver (Bishwajit et al., 2017; Doyle et al., 2018; Manda-Taylor et al., 2017; Muheirwe & Nuhu, 2019). From the author's perspective, this finding highlights how deeply embedded gender ideologies continue to shape health-seeking behaviours, even in the presence of improved health infrastructure and policy advocacy for male involvement.

Male participants further expressed feelings of embarrassment and discomfort when accompanying their partners to the clinic, particularly due to fear of social judgement from peers and community members. This suggests that male involvement is not only constrained by knowledge or access but also by social identity concerns and perceived threats to masculinity. Similar findings have been reported in previous studies showing that fear of stigma and cultural expectations significantly discourage male participation in reproductive health services (Doyle et al., 2018; Muheirwe & Nuhu, 2019; Nyamai et al., 2022). The author interprets this as an important psychosocial barrier that is often underestimated in programme design, yet it significantly influences men's willingness to participate in MNCH services.

In addition, the study found that the term "Maternal and Child Health (MCH)" itself may inadvertently reinforce exclusion by linguistically and symbolically centring women and children while omitting men. Participants felt that this terminology contributed to the perception that men are outsiders in reproductive health spaces. While limited literature directly critiques service nomenclature, related studies on male involvement highlight that health systems are often structured in ways that unintentionally exclude men from maternal care services (Davis et al., 2013; Tokhi et

al., 2018). The author argues that such structural and symbolic exclusions may require rethinking of service branding and communication strategies to explicitly include male partners.

Another key barrier identified was time constraints due to employment obligations, particularly among men engaged in casual labour. Because most male respondents depended on daily wages, attending antenatal care sessions meant loss of income, making participation economically unfeasible. This finding aligns with previous studies which have shown that informal employment and competing livelihood demands significantly limit male attendance at antenatal care services (Bishwajit et al., 2017; Doyle et al., 2018; Gibore et al., 2019). The author notes that this highlights the tension between health service utilisation and economic survival, especially in low-income settings where informal employment dominates.

Closely related to this was the issue of unsupportive health system organisation, particularly clinic operating hours and service delivery processes. Participants indicated that MCH services were mainly offered during weekday mornings, which conflicted with working schedules of most men. Long waiting times, overcrowding, boredom, and lack of structured engagement for male partners further discouraged attendance. These findings are consistent with studies reporting that inconvenient service hours, long waiting times, and lack of male-friendly service delivery models act as major deterrents to male involvement in MNCH services (Bishwajit et al., 2017; Doyle et al., 2018; Gibore et al., 2019; Nyamai et al., 2022). The author interprets this as a systemic barrier, suggesting that even motivated male partners may be excluded by rigid service delivery models that fail to reflect the realities of clients' lives.

Additionally, participants reported that health facility environments were often perceived as unfriendly to male companions, with limited space, lack of privacy, and insufficient services targeting men. This finding is supported by literature indicating that inadequate infrastructure and lack of male-friendly spaces within maternal health settings reduce male participation (Bishwajit et al., 2017; Nyamai et al., 2022). Provider attitudes have also been identified as a key determinant of male engagement

in MNCH services (Davis et al., 2013). This shifts part of the responsibility from individual behaviour to institutional readiness and health system responsiveness.

Importantly, the study also revealed a knowledge gap among men regarding their roles in MNCH beyond financial provision. Many male participants believed that their primary responsibility was to provide financial support, while emotional, physical, and informational support during pregnancy were considered secondary or unnecessary. This finding is consistent with studies showing that limited male knowledge and awareness of reproductive health responsibilities significantly reduces participation in MNCH services (Gibore et al., 2019; Greenspan et al., 2019; Sharma et al., 2018; Teklesilasie & Deressa, 2020). From the author's perspective, this reflects a narrow conceptualisation of fatherhood, shaped by both cultural norms and limited exposure to MNCH education.

Overall, the findings suggest that male partner accompaniment is influenced by a complex interplay of socio-cultural norms, economic constraints, health system design, and knowledge gaps. These factors do not operate independently but rather reinforce one another, creating multiple layers of exclusion that must be addressed simultaneously for meaningful change to occur. The author therefore argues that interventions aimed at improving male involvement must be multi-level, addressing individual beliefs, community norms, and health system structures concurrently.

5.3 Strategies to Promote Male Partner Involvement in MNCH Services

The findings of this study highlight that improving male partner involvement in MNCH services requires multifaceted and context-responsive interventions. Participants proposed several strategies that reflect both demand-side and supply-side approaches, indicating that effective interventions must address both community-level beliefs and health system-level barriers.

One of the most strongly emphasized strategies was the need for education and sensitization of individuals, health workers, and the wider community on the importance of male partner involvement. Participants suggested that lack of awareness and entrenched cultural beliefs could be transformed through structured health

education. From the author's perspective, this finding reinforces the idea that knowledge is a foundational but insufficient condition for behavioural change; however, it remains a critical entry point for intervention. Previous interventions have demonstrated that community-based education significantly improves knowledge and attitudes towards male involvement in MNCH services (Peneza & Maluka, 2018; Tokhi et al., 2018). A systematic review by Tokhi et al. (2018) further supports the use of multi-level education strategies, including community dialogues, workplace education, and facility-based couple counselling. The author argues that such multi-channel approaches are particularly relevant in settings where men have limited interaction with health facilities.

Participants also emphasized the importance of sensitization and training of healthcare providers to foster more welcoming and inclusive attitudes towards male partners. It was noted that some healthcare workers unintentionally discourage male participation through poor communication, lack of engagement, or failure to integrate men into service delivery processes. From the author's perspective, this finding highlights the central role of health system actors as gatekeepers of male involvement. Even when communities are willing, provider attitudes can either facilitate or hinder participation. This is consistent with studies by Davis et al. (2013) and Doherty et al. (2015), which emphasize that provider sensitization is essential for creating male-friendly MNCH services. UNICEF (2022) similarly recommends integrating male engagement training into routine health worker capacity-building programmes. The author therefore posits that health system strengthening should be considered a core component of male involvement interventions rather than an optional add-on.

Another key strategy identified was the use of formal invitation letters to encourage male attendance at antenatal clinics. Participants suggested that written invitations issued through their female partners could legitimize male attendance and serve as an official entry point into MNCH services. The author views this strategy as particularly innovative in contexts where men may otherwise feel socially excluded or uncertain about their role in antenatal care settings. Evidence from other African contexts supports this approach. Studies in Tanzania, Uganda, Malawi, and the Democratic Republic of Congo have demonstrated that invitation letters can significantly increase

male attendance at antenatal clinics (Msovela & Tengia-Kessy, 2016; Byamugisha et al., 2011). However, the author cautions that such strategies must be implemented ethically and without coercion to avoid unintended negative consequences such as discouraging women from attending services.

Participants further recommended the introduction of male-friendly health services, including provision of male-targeted services, transport reimbursements, reduced waiting times, and priority service for couples. These recommendations reflect an understanding that structural barriers must be addressed alongside behavioural interventions. From the author's perspective, these suggestions demonstrate that participants are not only aware of barriers but are also capable of proposing realistic and context-specific solutions. A systematic review by Mwije and Holvoet (2021) and Peneza and Maluka (2018) supports the effectiveness of such incentive-based and service reorganization strategies in increasing male involvement. However, the author notes that while incentives may improve short-term uptake, sustainability requires institutionalisation of male-friendly services within routine health system design.

Participants also strongly recommended restructuring of MCH service delivery environments to make them more inclusive. This included welcoming male partners, improving seating arrangements, ensuring privacy, extending service hours to weekends, and actively engaging men during consultations. The author interprets this as a call for a paradigm shift from women-centred maternal health services to family-centred reproductive health care models. Evidence from Davis et al. (2013) supports this approach, indicating that father-friendly health services and improved clinic environments significantly enhance male participation. The author further argues that such restructuring is not merely logistical but symbolic, as it communicates institutional recognition of men as legitimate stakeholders in maternal health.

Overall, the strategies identified in this study suggest that effective male involvement interventions must be multi-dimensional, combining community sensitization, health worker training, service redesign, and targeted incentives. The author concludes that sustainable improvement in male partner involvement will require coordinated efforts

across individual, community, and health system levels, rather than isolated interventions.

The intervention model implemented in this study demonstrated a statistically and practically significant improvement in male partner accompaniment to antenatal care (ANC) services and childbirth support. The observed improvements provide strong evidence that structured, facility-based and contextually tailored interventions can effectively influence male involvement behaviours in maternal and neonatal health (MNCH) services when appropriately designed and implemented.

The intervention package consisted of multiple mutually reinforcing strategies aimed at addressing the identified barriers to male involvement. These included the issuance of formal invitation letters to male partners, prioritization of services for couples attending ANC together, provision of basic health screening services for men (including blood pressure measurement, height assessment, and body mass index calculation), and targeted health education sessions focusing on the importance of male involvement in pregnancy, childbirth, and postnatal care. From the author's perspective, the integration of these strategies reflects a deliberate shift from passive health messaging to an active engagement model, where men are not only informed but also welcomed, assessed, and meaningfully involved in the health system.

The results indicate that male partner accompaniment improved markedly in the intervention group compared to the control group. Specifically, 90% of male partners in the intervention group accompanied their spouses to ANC more than once, demonstrating sustained engagement rather than one-off attendance. Nearly half of the male partners (46.7%) attended at least three ANC visits, indicating a substantial level of behavioural change and continuity of involvement. In contrast, male partner participation in the control group remained extremely low, with only 6.7% and 3.3% accompanying their spouses for the first and second ANC visits respectively. This stark contrast underscores the effectiveness of the intervention in transforming male participation from a marginal to a more normative practice within the intervention setting.

In addition to ANC attendance, the intervention also had a significant impact on male presence during childbirth. A higher proportion of men in the intervention group (86.7%) were present during childbirth compared to 43.3% in the control group. This difference is particularly important because male presence at birth is often influenced by cultural norms, health system restrictions, and institutional readiness. The findings suggest that when men are progressively engaged throughout pregnancy through structured interventions, they are more likely to extend their involvement into childbirth support. From the author's interpretation, this continuity of engagement reflects the cumulative effect of repeated exposure and normalization of male presence in MNCH services, rather than a single intervention component.

Statistical analysis confirmed that these differences in ANC attendance and childbirth accompaniment between the intervention and control groups were highly significant ($p < 0.001$), with a very large effect size ($\Phi = 0.89$). This indicates not only statistical significance but also strong practical significance, suggesting that the intervention had a substantial and meaningful impact on male partner behaviour. In quasi-experimental health intervention studies, such a large effect size is particularly noteworthy, as it suggests that the observed changes are unlikely to be due to chance or external confounding factors alone.

The extremely low level of male partner accompaniment observed in the control group is consistent with findings from several observational studies conducted in East Africa and other low- and middle-income settings, although the magnitude of participation varies across contexts. Community-based cross-sectional studies conducted in Ethiopia, Bangladesh, and Kenya have reported male involvement levels ranging between approximately 34% and 51% (Degefa et al., 2024; Tadesse et al., 2018; Mohammed et al., 2019; Rahman et al., 2018; Muia et al., 2022). These variations may be attributed to differences in socio-cultural norms, health system readiness, and the presence or absence of targeted male engagement interventions.

From the author's perspective, the much lower male involvement in the control group in the present study may reflect the absence of structured engagement strategies within routine service delivery, reinforcing the notion that male involvement does not occur

spontaneously but must be actively facilitated through deliberate programme design. This interpretation is supported by the broader literature, which suggests that male involvement is highly sensitive to health system cues, cultural expectations, and perceived social acceptance.

Interestingly, some cross-sectional studies have reported relatively higher male attendance in ANC services. For example, an Ethiopian study involving 430 women reported that 54.4% of partners attended ANC at least once, and 69.7% attended four or more ANC visits during the last pregnancy, with 95% of births attended by skilled birth attendants (Natai et al., 2020). However, these figures contrast with the current study, where only 6.7% of male partners in the intervention group attended four ANC visits, while none in the control group achieved this level of attendance. The author interprets this discrepancy as being partly attributable to differences in study design and intervention exposure, as cross-sectional studies measure existing behaviour without introducing structured interventions, whereas the current study actively modified the service environment to influence behaviour.

Furthermore, the findings of this study are consistent with evidence from intervention-based studies. A notable example is the multi-site randomized controlled trial conducted in Rwanda using the Bandebereho gender-transformative couples' intervention, which demonstrated significantly higher male accompaniment to ANC in the intervention group compared to the control group (Incidence Rate Ratio = 1.50, $p < 0.001$) (Doyle et al., 2018). From the author's perspective, the similarity in findings between the Rwanda trial and the current study strengthens the argument that gender-transformative and health system-integrated interventions are highly effective in improving male engagement in MNCH services, even across different socio-cultural contexts.

Similarly, a systematic review of thirteen studies across nine countries found that interventions aimed at engaging men were associated with improved ANC attendance and increased male participation in maternal health services (Tokhi et al., 2018). This convergence of evidence suggests that male involvement is highly responsive to structured interventions that combine health education, service redesign, and

community engagement. The present study contributes to this body of evidence by demonstrating that such interventions are also effective in a Kenyan county-level context, thereby enhancing the external validity and applicability of previous findings.

In relation to childbirth accompaniment, the current study found that 43.3% of male partners in the control group were present during childbirth, compared to 86.7% in the intervention group. This pattern is consistent with findings from Rahman et al. (2018) in Bangladesh, where approximately half of husbands reported being present at the birthplace during delivery. However, the author notes that while childbirth presence may be influenced by cultural acceptance in some settings, sustained ANC engagement appears to be a stronger predictor of childbirth involvement. This suggests that male involvement during pregnancy functions as a pathway to increased participation during delivery, reinforcing the importance of early and continuous engagement strategies.

The importance of male accompaniment to ANC is further supported by evidence linking male involvement to improved birth preparedness and complication readiness (BPCR). A study by Beyene et al. (2024) found that 55.9% of husbands demonstrated responsiveness to BPCR, and this responsiveness was significantly associated with accompanying their wives to ANC visits (AOR = 2.2; 95% CI: 1.39–3.56) as well as possessing adequate knowledge of obstetric danger signs during labour and the postnatal period. From the author's perspective, these findings reinforce the idea that male accompaniment is not merely a behavioural outcome but a critical entry point into broader maternal health literacy and preparedness behaviours, which ultimately contribute to improved maternal and neonatal outcomes.

Overall, the findings of this quasi-experimental study demonstrate that male partner involvement in ANC and childbirth can be significantly improved through structured, multi-component, facility-based interventions. The intervention worked by addressing multiple barriers simultaneously, including cultural exclusion, lack of awareness, unfriendly service environments, and limited perceived male roles in maternal health. The magnitude of improvement observed suggests that male involvement is highly

amenable to change when interventions are context-specific, gender-sensitive, and health system-integrated.

From the author's interpretation, the key implication of these findings is that male involvement should not be viewed as a peripheral or optional component of maternal health programmes. Instead, it should be integrated as a core element of MNCH service delivery, with deliberate strategies embedded within routine antenatal care systems. The success of the intervention further suggests that scaling up such approaches could contribute meaningfully to improved maternal support systems, increased skilled birth preparedness, and ultimately better maternal and neonatal health outcomes in similar low-resource settings.

5.4 Effects of the Intervention Model on Selected Maternal and Neonatal Health Outcomes

5.4.1 Men's Knowledge on Danger Signs in Pregnancy and Duration of Exclusive Breastfeeding

The findings of this study demonstrate a substantial improvement in men's knowledge of pregnancy danger signs and the recommended duration of exclusive breastfeeding following the implementation of the intervention model. The intervention specifically incorporated targeted health education sessions delivered to male partners during antenatal care (ANC) visits, with emphasis on recognition of obstetric danger signs, birth preparedness, complication readiness, and appropriate infant feeding practices. This component was deliberately designed to address the knowledge gaps identified during the formative phase of the study, where it was observed that male partners had limited understanding of maternal health risks and their supportive roles during pregnancy and the postnatal period.

At baseline, the study revealed generally low levels of knowledge among male participants regarding pregnancy danger signs. However, following the intervention, there was a marked and statistically significant improvement in awareness within the intervention group. The proportion of men who could correctly identify at least two pregnancy danger signs increased dramatically from 36.7% (n = 11) at baseline to

93.3% (n = 27) post-intervention. This represents not only a numerical increase but also a substantial behavioural shift in terms of health awareness and preparedness. Similarly, knowledge of at least three danger signs increased from a very low baseline of 6.7% (n = 2) to 70% (n = 21) after the intervention.

In contrast, the control group exhibited only marginal changes over the same period. Knowledge of at least two danger signs increased slightly from 20% (n = 6) to 23.3% (n = 7), while awareness of three danger signs remained unchanged at 3.3% (n = 1). This minimal improvement in the control group suggests that routine health education provided within standard antenatal care services, without structured male-targeted intervention, is insufficient to significantly influence male knowledge levels. From the author's perspective, this finding reinforces the importance of intentional, structured, and male-inclusive educational strategies, rather than assuming that men will acquire adequate knowledge through passive exposure to routine maternal health services.

In addition to knowledge on pregnancy danger signs, the study assessed awareness of the recommended duration of exclusive breastfeeding. This is a critical component of infant health, as male partner support has been shown to influence breastfeeding initiation and continuation. The findings revealed that awareness in the intervention group increased significantly from 56.7% to 96.7%, indicating near-universal knowledge following the intervention. In comparison, the control group showed only a slight increase from 83.3% to 90%, suggesting a ceiling effect where minor improvements may have occurred due to general health messaging but without meaningful transformation in understanding.

Statistical analysis confirmed that these improvements were significant across all measured indicators. Knowledge of at least two pregnancy danger signs showed a chi-square significance of $p = 0.001$ ($\Phi = 0.537$), indicating a moderate to strong effect size. Similarly, knowledge of at least three danger signs was highly significant ($p = 0.001$, $\Phi = 0.600$), reflecting a large effect size and strong intervention impact. Awareness of exclusive breastfeeding duration also improved significantly ($p = 0.005$, $\Phi = 0.394$), indicating a moderate effect. These effect sizes collectively demonstrate that the intervention did not merely produce statistical differences but resulted in

meaningful and practically important improvements in knowledge levels among male partners.

From the author's interpretation, these findings underscore the critical role of male-targeted health education within antenatal care settings. The substantial improvement observed in the intervention group suggests that when men are actively engaged, provided with structured information, and included in the care process, their capacity to understand and internalize maternal health information increases significantly. This challenges the traditional assumption that maternal health education should primarily target women and highlights the value of a more inclusive, family-centred approach.

The findings of this study are consistent with previous research conducted in similar settings. For instance, Gize et al. (2019) reported that 65.4% of male partners had good knowledge of pregnancy danger signs, with vaginal bleeding being the most commonly identified danger sign (56.2%). Similarly, Degefa et al. (2024) found that only 34.8% of male partners demonstrated adequate knowledge of obstetric danger signs, indicating persistent knowledge gaps in many low-resource settings. These studies collectively suggest that male knowledge of maternal health risks remains suboptimal in the absence of targeted interventions.

Comparable findings have also been reported in South Asian contexts. A study conducted in Bangladesh found that only about one-quarter of husbands were able to correctly identify three or more pregnancy-related danger signs (Rahman et al., 2018). This reflects a broader pattern of limited male engagement in maternal health knowledge acquisition across diverse cultural and geographic settings. From the author's perspective, the consistency of these findings across different countries suggests that the issue is not merely context-specific but reflects a global gap in male inclusion within maternal health education systems.

In the Kenyan context, related findings from Bungoma County indicated that approximately 52.2% of women and 50.0% of men knew at least one neonatal danger sign, with women demonstrating slightly higher knowledge levels overall (Roney et al., 2021). Importantly, the same study found that women's knowledge of neonatal danger signs was significantly associated with male partner accompaniment to ANC

(OR = 3.34, 95% CI: 1.35–8.27, $p = 0.009$). This suggests that knowledge within households may be mutually reinforcing, and that male involvement and maternal knowledge are interlinked rather than independent phenomena.

The importance of male partner knowledge in maternal and neonatal health outcomes cannot be overstated. Evidence indicates that male partners who are knowledgeable about pregnancy, childbirth, and postnatal danger signs are more likely to support timely health-seeking behaviour, participate in decision-making, and engage in preventive health services. For example, Gamshe and Demissie (2020) found that male partners with good knowledge of obstetric danger signs were significantly more likely to engage in prevention of mother-to-child transmission (PMTCT) services. Similarly, Degefa et al. (2024) reported that knowledgeable male partners were three times more likely to engage in PMTCT services (AOR = 2.987, 95% CI: 1.61–5.55) and 2.6 times more likely to participate in ANC visits.

Further supporting this evidence, Beyene et al. (2024) found that male partners with good knowledge of danger signs during pregnancy, childbirth, and the postpartum period were significantly more likely to participate in birth preparedness and complication readiness activities. In their study, knowledge of danger signs was associated with a 2.71-fold increase in participation in birth preparedness and complication readiness (AOR = 2.71, 95% CI: 1.67–4.42), while spousal communication further enhanced engagement (AOR = 2.85, 95% CI: 1.72–4.71). These findings reinforce the idea that knowledge is not merely informational but has direct behavioural consequences in maternal health engagement.

From the author's analytical perspective, the results of the current study extend this evidence by demonstrating that structured, facility-based male engagement interventions can significantly improve knowledge levels within a relatively short period. This suggests that knowledge gaps are not fixed or culturally immutable but are modifiable through targeted interventions embedded within health systems. The dramatic increase observed in the intervention group supports the argument that men are capable of acquiring and applying maternal health knowledge when given appropriate access, opportunity, and encouragement.

Moreover, increased knowledge among male partners has broader implications for maternal and neonatal health outcomes. Prior studies have shown that when men are able to recognize danger signs, they are more likely to support emergency care-seeking, facilitate timely referral, and participate in preventive health behaviours (Gize et al., 2019). In the context of this study, improved male knowledge is therefore not an end in itself but a critical pathway toward improved maternal health decision-making, timely service utilization, and enhanced household preparedness for obstetric emergencies.

In addition, knowledge of exclusive breastfeeding is particularly important in shaping infant feeding practices. Male partner support has been shown to significantly influence a mother's ability to initiate and sustain exclusive breastfeeding. The near-universal improvement in knowledge within the intervention group suggests that male partners may be better positioned to support breastfeeding practices when adequately informed. From the author's perspective, this finding highlights the importance of integrating infant nutrition education into male involvement interventions, as breastfeeding outcomes are strongly linked to household-level support systems.

Overall, the findings of this study demonstrate that male partner knowledge of maternal and neonatal health issues can be significantly improved through structured, targeted, and contextually relevant interventions. The intervention not only enhanced knowledge but also has the potential to influence broader behavioural outcomes related to ANC attendance, birth preparedness, and maternal support. The author therefore concludes that male-focused health education should be considered an essential component of MNCH programming, particularly in settings where traditional gender norms and limited health literacy continue to constrain male involvement.

5.4.2 IFAS Intake, Purchase of Birth Kit, Emergency Transport Plan and Hospital Birth

The study demonstrated that male partner involvement had a significant influence on key birth preparedness and complication readiness (BPCR) practices, particularly in relation to birth kit preparation and emergency transport planning, while showing a limited effect on iron and folic acid supplementation (IFAS) adherence and no

additional effect on skilled birth attendance. These findings highlight the differential impact of male involvement across various dimensions of maternal health behaviours, with stronger effects observed in planning and resource-related activities compared to clinical service utilization.

With regard to iron and folic acid supplementation (IFAS), women in the intervention group showed relatively better adherence compared to those in the control group, as only 30% missed doses compared to 53.3% in the control group. Although this difference did not reach statistical significance ($p = 0.115$), it suggests a modest improvement associated with male involvement. Similar findings have been reported in other studies where male involvement had an indirect but supportive role in medication adherence through reminders, encouragement, and financial or emotional support rather than direct control of supplementation behaviour (Tokhi et al., 2018). From the author's perspective, this limited effect may be explained by the fact that IFAS adherence is influenced by multiple individual-level factors such as side effects, forgetfulness, and perceptions about iron tablets, which may not be fully addressed through male engagement alone unless combined with strengthened counselling and follow-up mechanisms within antenatal care services.

In contrast, male involvement had a very strong effect on birth preparedness behaviours, particularly in the acquisition of birth kits. Nearly all women in the intervention group (96.6%) had purchased complete birth preparedness kits prior to labour compared to only 40% in the control group, a difference that was highly significant ($p < 0.001$) with a large effect size ($\Phi = 0.566$). This finding is consistent with studies showing that male participation in household decision-making significantly increases the likelihood of preparing essential childbirth supplies and reducing delays in accessing care (Mohammed et al., 2019; Gize et al., 2019). From the author's interpretation, this strong effect reflects the role of men as key financial decision-makers in many households, meaning that their engagement during antenatal care directly translates into improved allocation of resources for maternal health needs. It also suggests that when men are actively involved and informed, they are more likely to prioritize maternal health expenditures and support timely preparation for delivery.

A similarly strong impact was observed in emergency transport planning, where almost all women in the intervention group (96.6%) reported having a transport plan in place compared to just over half (51%) in the control group. This difference was statistically significant ($p < 0.001$) with a large effect size ($\Phi = 0.537$), indicating a meaningful improvement in preparedness for obstetric emergencies. These findings align with evidence from previous studies which have shown that male involvement significantly reduces delays in seeking and reaching care during obstetric emergencies (Tokhi et al., 2018; Kifle et al., 2018). In particular, studies in sub-Saharan Africa have demonstrated that men often play a central role in arranging transport and mobilizing resources during emergencies, thereby influencing the second delay in the three-delay model. From the author's perspective, the improvement observed in this study suggests that male engagement interventions enhance anticipatory decision-making within households, enabling couples to plan ahead for potential complications rather than reacting during emergencies.

In contrast, the intervention did not demonstrate a significant effect on skilled birth attendance. Facility-based delivery was already high in both groups, with 96.6% in the intervention group and 100% in the control group delivering in health facilities under skilled care ($p = 1.000$). This lack of difference may be attributed to the already high baseline rates of institutional delivery in Kenya, largely influenced by national policies such as the Linda Mama programme, which has reduced financial barriers to facility-based childbirth and contributed to near-universal skilled birth attendance in many settings. Similar patterns have been observed in other studies where interventions had limited additional impact on facility delivery in contexts where baseline uptake was already high (Tokhi et al., 2018). From the author's interpretation, this suggests a possible ceiling effect, where behavioural interventions have limited measurable influence on outcomes that are already strongly supported by national health financing and service delivery policies.

Despite this, literature from other contexts still emphasizes the importance of male involvement in improving skilled birth attendance. For example, Mohammed et al. (2019) found that increased male involvement was associated with higher odds of facility delivery, while Kifle et al. (2018) reported that joint decision-making between

couples significantly increased the likelihood of delivering in health facilities. Additionally, Gize et al. (2019) highlighted that male partners play a crucial role in supporting financial and logistical arrangements for delivery, including transport costs and preparation of postnatal necessities. These findings collectively suggest that while male involvement is an important determinant of facility delivery in many settings, its marginal effect may be reduced in contexts where institutional delivery is already the norm.

Overall, the integrated findings indicate that male partner involvement has a stronger and more immediate influence on preparedness-related behaviours such as birth kit acquisition and emergency transport planning than on clinical outcomes such as skilled birth attendance. From the author's perspective, this pattern reflects the layered nature of maternal health determinants, where behavioural, economic, and systemic factors interact differently across the continuum of care. Male involvement interventions therefore appear most effective in strengthening household readiness and reducing delays in decision-making and transport, rather than substantially altering already established patterns of facility-based delivery.

Overall, the findings of this study provide sufficient evidence to reject the null hypotheses, indicating that the facility-based intervention significantly improved male partner involvement in maternal and neonatal health as well as maternal and neonatal health outcomes. The study therefore suggests that male involvement should be viewed primarily as a mechanism for improving birth preparedness and emergency readiness, which are critical precursors to safe delivery outcomes. Strengthening these intermediate behaviours may indirectly contribute to improved maternal and neonatal health outcomes, even in settings where skilled birth attendance is already high due to national policy interventions.

5.4.3 Couple HIV Testing and Counselling

The findings of this study demonstrate a strong and statistically significant effect of the intervention on uptake of couple HIV counseling and testing (HCT) during antenatal care (ANC). Specifically, 70% (n = 21) of couples in the intervention group underwent HIV counseling and testing, compared to none in the control group. This

difference was highly significant ($p < 0.001$) and associated with a large effect size ($\Phi = 0.566$), indicating a substantial practical impact of the intervention on HIV service uptake among couples.

From the author's perspective, this finding is particularly important because it highlights how male partner involvement interventions can extend beyond general maternal health behaviours to influence critical prevention services such as HIV testing and prevention of mother-to-child transmission (PMTCT). The intervention appears to have created an enabling environment where male partners were not only physically present at ANC but were also actively engaged in health education sessions that emphasized the importance of couple-based HIV testing. This likely reduced fear, stigma, and reluctance among men, thereby facilitating joint testing.

The high uptake observed in the intervention group may be attributed to several reinforcing components of the intervention. First, the issuance of formal invitation letters to male partners may have enhanced their willingness to attend ANC by legitimizing their participation. Second, the prioritization of couples during service delivery may have reduced waiting times and increased perceived acceptability of male presence in ANC settings. Third, targeted health education on HIV, PMTCT, and maternal health risks likely improved awareness and reduced misconceptions about HIV testing during pregnancy. From the author's interpretation, these combined strategies contributed to normalizing male participation in HIV-related ANC services, transforming HIV testing from an individual maternal service into a shared couple responsibility.

In contrast, the control group exhibited extremely low uptake of HIV counseling and testing among couples, with only 1.7% participation reported. This stark difference suggests that in the absence of structured interventions, male partners are significantly less likely to engage in HIV testing during pregnancy. This finding aligns with broader evidence indicating that routine ANC services often fail to adequately engage men unless specific male-friendly strategies are implemented (WHO, 2023; UNAIDS, 2024).

When compared with other studies, the findings of this study show both similarities and contextual differences. For instance, a cross-sectional study conducted in Ethiopia by Gamshe and Demissie (2020) reported that 42.5% (95% CI: 37.7–47.6) of husbands participated in HIV testing, counseling, and care services during ANC. Although this proportion is lower than the 70% observed in the intervention group of the present study, it is substantially higher than the control group, suggesting that even in non-intervention settings, certain contextual factors may promote higher male participation.

From the author's perspective, the differences between Ethiopia and the current Kenyan setting may be explained by variations in the implementation of male involvement strategies, health system outreach, and community-level sensitization. Ethiopia has implemented several community-based male involvement initiatives, including health extension worker programs that actively encourage male participation in reproductive health services, which may account for higher baseline engagement levels compared to the control group in this study.

Similarly, studies conducted in sub-Saharan Africa have consistently shown that male involvement is positively associated with increased uptake of HIV testing and PMTCT services. Mohammed et al. (2019) reported that couples with higher levels of male involvement had significantly greater odds of undergoing HIV testing during ANC. In addition, a systematic review by Melis and Fikadu (2022) identified several determinants of male participation in PMTCT services, including knowledge of PMTCT (OR = 2.30, 95% CI: 1.75–3.02), perceived responsibility for partner health (OR = 4.22, 95% CI: 2.31–7.71), and positive attitudes toward ANC services.

More recent evidence continues to support these findings. A multi-country analysis in sub-Saharan Africa by World Health Organization (WHO, 2023) emphasized that couple-based HIV testing during pregnancy significantly improves early diagnosis and linkage to treatment, particularly when male partners are actively engaged in antenatal services. Similarly, UNAIDS (2024) reports that male partner involvement remains a critical but underutilized strategy for improving PMTCT coverage and achieving the 95-95-95 HIV targets in high-burden settings.

From the author's interpretation, the strong association observed in this study between male involvement and HIV testing uptake reinforces the idea that HIV services are highly sensitive to behavioural and relational interventions within households. Unlike structural health outcomes such as facility delivery, HIV testing is more directly influenced by knowledge, perception of risk, stigma, and partner dynamics. Therefore, interventions that normalize couple communication and joint decision-making are particularly effective in improving uptake.

Furthermore, the findings suggest that male partner involvement contributes to reducing barriers such as fear of stigma, mistrust, and misconceptions about HIV testing. When men are actively engaged in ANC, they are more likely to perceive HIV testing as a shared responsibility rather than a service targeted exclusively at women. This shift in perception is critical for improving uptake of PMTCT services and ensuring early identification and management of HIV in pregnancy.

The findings also align with the broader literature on gender-transformative approaches to HIV prevention. Studies have shown that engaging men in reproductive health services increases uptake of HIV testing, improves adherence to PMTCT interventions, and enhances disclosure and communication between partners (Doyle et al., 2018; Tokhi et al., 2018). In particular, gender-transformative interventions such as couple counselling and male-friendly ANC services have been shown to significantly improve HIV-related outcomes by addressing underlying gender norms that limit male participation.

From a public health perspective, the implications of these findings are substantial. Increased uptake of couple HIV testing during ANC not only improves early detection of HIV but also facilitates timely initiation of antiretroviral therapy, thereby reducing the risk of mother-to-child transmission. It also enhances partner awareness and shared responsibility, which are essential components of effective PMTCT programmes.

However, the findings also highlight persistent gaps in routine service delivery. The near absence of couple HIV testing in the control group suggests that standard ANC services may not be sufficiently structured to engage men effectively. This reinforces the need for institutional reforms that integrate male-friendly approaches into routine

maternal health services, including flexible clinic hours, couple-based counselling spaces, and proactive invitation systems for male partners.

From the author's perspective, the intervention demonstrates that relatively simple but structured strategies—such as invitation letters, targeted education, and couple prioritization—can produce substantial improvements in HIV testing uptake. This suggests that health systems do not necessarily require complex or high-cost interventions to improve male involvement; rather, they require intentional redesign of service delivery processes to accommodate and encourage male participation.

In conclusion, the study provides strong evidence that male partner involvement significantly enhances uptake of couple HIV counseling and testing during ANC. This has important implications for PMTCT programming, maternal health service design, and HIV prevention strategies in similar low-resource settings. Strengthening male engagement in ANC should therefore be prioritized as a key strategy for improving HIV testing coverage, enhancing couple communication, and ultimately reducing maternal and neonatal HIV-related morbidity and mortality.

5.4.4 Additional Male Partner Support Activities

This study further examined the influence of the intervention on broader dimensions of male partner involvement beyond attendance at antenatal care (ANC) and clinical outcomes, focusing specifically on supportive behaviours within the household and shared decision-making processes. These included assistance with household chores, reminding partners about ANC appointments and iron and folic acid supplementation (IFAS), and joint decision-making regarding the place of delivery. These indicators are particularly important as they reflect everyday behavioural engagement and relational dynamics, which are increasingly recognized as critical components of male involvement in maternal and newborn health (MNH) (Tokhi et al., 2018; Yargawa & Leonardi-Bee, 2022).

The findings indicate that male partners in the intervention group demonstrated significantly higher levels of engagement across most of these supportive roles compared to those in the control group. Statistically significant differences were

observed in assistance with household chores, reminders for ANC attendance, and joint decision-making on place of delivery ($p < 0.001$), with strong effect sizes ranging from 0.526 to 0.778. These large effect sizes indicate that the intervention had not only statistical significance but also substantial practical impact on male partner behaviour, reinforcing the effectiveness of structured male engagement strategies.

However, the intervention did not produce a statistically significant difference in reminding partners to take IFAS ($p = 0.052$), although the result approached significance. This finding is consistent with emerging evidence suggesting that adherence to supplementation is influenced by multiple individual-level factors such as side effects, forgetfulness, and perceptions of medication, which may not be fully addressed through partner support alone (Seck & Jackson, 2021). From the author's perspective, this suggests that male involvement should be complemented with stronger facility-based counselling and follow-up mechanisms to improve IFAS adherence.

The significant improvement observed in male participation in household chores is particularly noteworthy. Traditionally, domestic responsibilities during pregnancy are disproportionately borne by women, especially in low- and middle-income settings. The findings of this study suggest that the intervention contributed to shifts in traditional gender roles, encouraging men to assume more active caregiving responsibilities. Similar findings have been reported in recent studies, where male engagement interventions were associated with increased participation in domestic work and improved support for pregnant partners (Doyle et al., 2018; UNICEF, 2021). From the author's interpretation, this shift represents a move toward more gender-equitable household dynamics, which is essential for improving maternal well-being.

These findings are further supported by recent evidence from sub-Saharan Africa. A study by Sharma et al. (2020) found that male involvement interventions significantly increased men's participation in household support and maternal care activities, particularly when men were engaged through community-based education and facility-level interventions. Similarly, a systematic review by World Health Organization (2023) emphasized that male involvement contributes to improved maternal health

outcomes not only through service utilization but also through enhanced emotional, financial, and physical support within households.

The observed increase in joint decision-making regarding the place of delivery also reflects a critical transformation in household power dynamics. In many settings, decisions regarding childbirth are influenced or controlled by male partners due to their role as primary decision-makers and financial providers. The significant improvement in joint decision-making observed in this study suggests that the intervention fostered better communication and shared responsibility between partners. This is consistent with findings from Comrie-Thomson et al. (2020), who reported that male engagement interventions promote more equitable decision-making and improve maternal health outcomes by strengthening couple communication.

From the author's perspective, this shift toward shared decision-making is particularly significant because it represents a deeper level of behavioural change that extends beyond attendance at health facilities. It indicates that male involvement interventions can influence intra-household relationships and gender norms, which are key determinants of maternal health behaviours. This interpretation is supported by recent research showing that interventions targeting men can lead to sustained improvements in communication, trust, and joint health decision-making within couples (Doyle et al., 2018; Tokhi et al., 2018).

In addition, the increased involvement of men in reminding their partners about ANC appointments suggests improved prioritization of maternal health within households. Regular ANC attendance is critical for monitoring pregnancy and preventing complications, and male support plays a key role in ensuring adherence to scheduled visits. Recent studies have shown that male involvement is associated with increased ANC attendance and continuity of care, particularly when men are actively engaged through structured interventions (Gebremedhin et al., 2022).

From a broader perspective, these findings reinforce the growing recognition that male involvement should be conceptualized as a multidimensional construct, encompassing not only physical presence at health facilities but also active participation in household responsibilities, emotional support, and shared decision-making. This aligns with

recent global policy directions, including recommendations by the World Health Organization (2023) and UNICEF (2021), which emphasize the need for gender-transformative approaches that engage men as partners in maternal and child health.

The strong effect sizes observed in this study further underscore the effectiveness of the intervention in producing meaningful behavioural change. In quasi-experimental studies, such large effect sizes indicate that the intervention has high practical relevance and potential for scalability. From the author's interpretation, the findings suggest that relatively simple and context-specific strategies—such as invitation letters, targeted education, and male-friendly service delivery—can lead to substantial improvements in male partner engagement across multiple domains.

However, sustaining these behavioural changes may require continued efforts beyond the duration of the intervention. Evidence suggests that long-term transformation of gender norms and household dynamics requires ongoing community engagement, policy support, and integration of male involvement strategies into routine health services (Sharma et al., 2020; WHO, 2023). Without such reinforcement, there is a risk that gains achieved through short-term interventions may not be sustained.

Overall, the findings of this study demonstrate that male partner involvement interventions can significantly enhance supportive behaviours within households, including participation in domestic work, facilitation of ANC attendance, and joint decision-making on place of delivery. These outcomes highlight the importance of addressing not only clinical aspects of maternal health but also the social, behavioural, and relational dimensions that influence maternal well-being. The study therefore underscores the need for comprehensive male involvement strategies that extend beyond health facility attendance to include active participation in the everyday experiences of pregnancy and childbirth, ultimately contributing to improved maternal and neonatal health outcomes.

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

Male involvement in maternal, newborn, and child health (MNCH) services is increasingly recognized as a critical strategy for improving health outcomes for women, newborns, and families. The findings of this study provide strong empirical evidence that engaging male partners through a structured, facility-based intervention can significantly enhance their participation in maternal health care and related supportive roles. By addressing both demand-side and supply-side barriers, the study contributes to the growing body of knowledge demonstrating that male involvement is not only desirable but also achievable through context-specific and well-designed interventions.

This study identified multiple and interrelated barriers to male partner accompaniment to maternal and child health (MCH) services. At the socio-cultural level, deeply entrenched gender norms and beliefs positioned maternal health as a woman's responsibility, with men primarily identifying as financial providers rather than active participants in pregnancy and childbirth. These norms were reinforced by societal expectations and peer perceptions, which discouraged men from attending MCH clinics due to fear of stigma or embarrassment. At the individual level, limited awareness of the importance of male involvement further constrained participation, as many men perceived their role to be restricted to providing financial support.

In addition to socio-cultural barriers, the study identified several structural and health system-related challenges that hindered male involvement. These included inconvenient clinic operating hours that conflicted with men's work schedules, particularly for those engaged in casual labour; long waiting times; overcrowded clinic environments; and the absence of male-friendly services within MCH facilities. Furthermore, negative experiences within health facilities—such as perceived unfriendly attitudes from healthcare providers and lack of engagement with male partners—contributed to low male attendance. Collectively, these findings underscore

the complex and multi-layered nature of barriers to male involvement, highlighting the need for comprehensive interventions that address both behavioural and systemic factors.

The findings of this qualitative component demonstrate that improving male partner involvement in maternal and neonatal health (MNCH) requires a multifaceted and context-sensitive approach that addresses individual, health system, and community-level barriers. Four broad categories of strategies emerged as critical for promoting male participation: community awareness and staff sensitization, re-organization and restructuring of the MCH environment, provision of male-responsive health services, and structured invitation of male partners to MNCH clinics.

First, the study underscores the importance of community awareness creation and staff sensitization as foundational to changing perceptions of MNCH services as exclusively women-centred. Participants emphasized that cultural and religious norms continue to limit male participation, necessitating targeted engagement of community leaders, including religious leaders and opinion shapers. Additionally, sensitization of health care workers was viewed as essential in fostering positive attitudes toward male attendance. Without such attitudinal change at both community and facility levels, efforts to promote male involvement may be undermined by stigma, fear, and misinformation. This highlights the need for sustained health education campaigns that normalize male participation in reproductive health services.

Second, the re-organization and restructuring of MCH services was identified as a key health system intervention. Participants recommended modifications such as reducing waiting times, prioritizing couples, extending clinic hours to weekends, and creating a more male-friendly environment. These suggestions reflect structural barriers within health facilities that inadvertently discourage male participation. The findings indicate that when men are actively engaged during consultations and included in practical aspects of care—such as listening to fetal heartbeats or participating in child welfare clinic activities—they are more likely to feel valued and involved. Therefore, restructuring service delivery processes is essential for improving acceptability and accessibility of MNCH services to male partners.

Third, the study highlights the need for provision of male-responsive health services within MCH clinics. Expanding service packages to include routine male health assessments such as blood pressure measurement, body mass index screening, and prostate cancer screening was seen as a strategy to attract and retain male participation. Participants also suggested rebranding MCH services to reflect inclusivity. This finding suggests that male involvement can be strengthened by integrating men's health needs into maternal health platforms, thereby transforming MCH clinics into broader family health service points rather than women-only spaces.

Lastly, formal invitation of male partners to attend ANC visits, including the use of invitation letters and reminder systems, was identified as a practical and effective strategy for increasing male attendance. This approach provides a structured entry point for male engagement and reinforces shared responsibility in pregnancy care. It also serves to bridge communication gaps between health facilities and households, ensuring that men are informed and encouraged to participate. Collectively, these strategies highlight that male involvement is not an incidental outcome but rather a product of deliberate system design, supportive policies, and culturally responsive engagement.

In response to these challenges, the study developed and implemented a facility-based, multi-component intervention model aimed at promoting male partner involvement in MNCH services. The intervention was informed by findings from the qualitative phase and incorporated strategies designed to directly address the identified barriers. These included issuing formal invitation letters to male partners through their pregnant spouses, restructuring and reorganizing the MCH environment to make it more welcoming and accommodating to men, providing targeted health education to couples on pregnancy, childbirth, and postpartum care, and offering selected health screening services to male partners attending ANC.

The findings demonstrated that this intervention model had a significant and positive impact on multiple outcomes related to male involvement. There was a marked increase in male partner accompaniment to antenatal care (ANC), with a majority of men in the intervention group attending multiple visits. Similarly, male presence

during childbirth increased substantially, indicating that sustained engagement throughout pregnancy translated into continued support during delivery. These findings suggest that male involvement is not a one-time event but a progressive behaviour that can be strengthened through repeated interaction and inclusion within the health system.

Beyond physical attendance, the intervention also significantly improved male partner participation in supportive roles within the household. Men in the intervention group were more actively involved in assisting with household chores, reminding their partners about ANC visits, and participating in joint decision-making regarding place of delivery. These findings are particularly important as they demonstrate that male involvement extends beyond clinic attendance to include everyday supportive behaviours and relational dynamics, which are essential for improving maternal well-being and reducing the burden on pregnant women.

The study further revealed substantial improvements in male partners' knowledge of maternal health issues. Following the intervention, a significantly higher proportion of men were able to identify key danger signs in pregnancy and correctly state the recommended duration of exclusive breastfeeding. These improvements in knowledge are critical, as they enhance men's ability to recognize complications and support timely healthcare-seeking behaviour. The findings also showed a strong association between male involvement and increased uptake of couple HIV counselling and testing, underscoring the role of male engagement in strengthening prevention of mother-to-child transmission (PMTCT) services and promoting shared responsibility for health within couples.

In terms of birth preparedness and complication readiness, the intervention had a particularly strong effect on behaviours such as purchase of birth kits and development of emergency transport plans. These outcomes reflect improved household-level planning and readiness for childbirth, which are essential for reducing delays in accessing care during obstetric emergencies. However, the intervention did not significantly influence certain outcomes, including iron and folic acid supplementation (IFAS) adherence and skilled birth attendance. The lack of effect on skilled birth

attendance may be attributed to the already high rates of facility-based deliveries in the study setting, likely influenced by national policies such as free maternity services. This suggests that while male involvement interventions are effective in improving behavioural and preparatory outcomes, their impact on certain clinical outcomes may be limited in contexts where baseline service utilization is already high.

Similarly, the intervention did not show a significant effect on the incidence of domestic violence or infant diarrhoeal disease. These findings indicate that such outcomes may be influenced by broader social, environmental, and behavioural factors that extend beyond the scope of the intervention. From the author's perspective, this highlights the need for more comprehensive, multi-sectoral approaches to address these complex issues.

Overall, the findings of this study demonstrate that male partner involvement can be significantly enhanced through targeted, facility-based interventions that address both socio-cultural and health system barriers. The intervention was particularly effective in improving male engagement in ANC attendance, childbirth support, household participation, knowledge acquisition, and birth preparedness behaviours. These improvements suggest that male involvement serves as a critical pathway for strengthening maternal health outcomes by enhancing support systems, improving communication between partners, and facilitating timely health-seeking behaviour.

Importantly, the study also highlights that male involvement should be conceptualized as a multidimensional construct, encompassing not only physical presence at health facilities but also active participation in household responsibilities, decision-making processes, and emotional support. This broader understanding is essential for designing effective interventions and policies that promote sustained male engagement in MNCH services.

In conclusion, this study provides compelling evidence that integrating male-friendly strategies into routine maternal health services can substantially improve male partner involvement and related maternal health behaviours. If scaled up and sustained, the intervention model has the potential to contribute meaningfully to improved maternal, newborn, and child health outcomes. The findings therefore support the inclusion of

male involvement as a core component of MNCH programming and underscore the importance of adopting gender-sensitive and context-specific approaches to maternal health service delivery.

6.2 Recommendations

Based on the findings of this study, several recommendations are proposed to strengthen male partner involvement in maternal, newborn, and child health (MNCH) services and improve maternal and neonatal health outcomes.

First, the Ministry of Health and county health departments should integrate structured male involvement strategies into routine antenatal and child health services. This includes formal issuance of invitation letters to male partners, couple-based health education sessions, and routine engagement of men during ANC visits. Such approaches should be standardized within national MNCH guidelines to ensure consistent implementation across health facilities.

Second, health facilities should be restructured to create male-friendly environments that encourage participation. This may include reducing waiting times for couples, extending clinic hours to accommodate working men, designating spaces for couples within MCH clinics, and ensuring respectful and inclusive communication from healthcare workers. Continuous capacity building and sensitization of healthcare providers is necessary to promote positive attitudes towards male engagement in MNCH services.

Third, community-level interventions should be strengthened through sustained health education and awareness campaigns targeting men, women, and community gatekeepers such as religious and cultural leaders. These efforts should aim to challenge harmful gender norms that limit male participation and promote shared responsibility in reproductive health.

Fourth, MNCH services should be expanded to include male-responsive health services such as basic health screening (blood pressure, BMI, and prostate health

education). Integrating such services within maternal health clinics may increase male attendance and promote a family-centred approach to healthcare delivery.

Finally, further research is recommended to explore long-term effects of male involvement on maternal and neonatal clinical outcomes, as well as to assess the scalability and cost-effectiveness of facility-based intervention models in diverse settings.

Overall, these recommendations emphasize the need for a multi-level, integrated approach combining health system strengthening, community engagement, and policy support to sustain male involvement in MNCH services.

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APPENDICES

Appendix I: Participant Information and Adult Consent Form for Enrollment in the Study

Title of Study: Effectiveness and health outcomes of a facility-based intervention in male partner involvement in maternal and newborn health at Thika level 5 hospital

Principal Investigator\and institutional affiliation: **_JOSEPH MUKOBE OKWAKO, PhD Student, JKUAT**

Introduction:

I would like to tell you about a study being conducted by the above listed researcher. The purpose of this consent form is to give you the information you will need to help you decide whether or not to be a participant in the study. Feel free to ask any questions about the purpose of the research, what happens if you participate in the study, the possible risks and benefits, your rights as a volunteer, and anything else about the research or this form that is not clear. When we have answered all your questions to your satisfaction, you may decide to be in the study or not. This process is called 'informed consent'. Once you understand and agree to be in the study, I will request you to sign your name or give a thumb print on this form. You should understand the general principles which apply to all participants in a medical research: i) Your decision to participate is entirely voluntary ii) You may withdraw from the study at any time without necessarily giving a reason for your withdrawal iii) Refusal to participate in the research will not affect the services you are entitled to in this health facility or other facilities. We will give you a copy of this form for your records.

May I continue? YES / NO

This study has approval by Jomo Kenyatta University of Agriculture and Technology Ethics and Research Committee protocol No.

WHAT IS THIS STUDY ABOUT?

The researcher listed above is interviewing women and or their partners attending antenatal clinic. The purpose of the interview is to find out ways of encouraging men to accompany their partners to clinic during pregnancy, labour and postnatal period as well as offer necessary support. Participants in this research study will be asked questions about socio-demographic characteristics, pregnancy and nature of support from their partners. Participants will also have the choice to undergo tests such as Random Blood Sugar (RBS), HIV and VDRL for syphilis.

There will be approximately 112 participants in this study randomly chosen to each group. We are asking for your consent to consider participating in this study.

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

If you agree to participate in this study, the following things will happen:

You will be interviewed by a trained interviewer in a private area where you feel comfortable answering questions. The interview will last approximately 50 minutes. This will get your socio-demographic information, past obstetric history and nature of partner support during last pregnancy. After the interview has finished, you will receive the required antenatal care and later given an invitation letter requesting your partner to accompany you to the clinic in the next appointment

We will ask for a telephone number where we can contact you if necessary. If you agree to provide your contact information, it will be used only by people working for this study and will never be shared with others. The reasons why we may need to contact you include: knowing your health status as concerns pregnancy and any challenge you may be facing that could affect the pregnancy.

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

We will keep everything you tell us as confidential as possible. We will use a code number to identify you in a password-protected computer database and will keep all of our paper records in a locked file cabinet. However, no system of protecting your confidentiality can be absolutely secure, so it is still possible that someone could find out you were in this study and could find out information about you.

Also, answering questions in the interview may be uncomfortable for you. If there are any questions you do not want to answer, you can skip them. You have the right to refuse the interview or any questions asked during the interview.

It may be embarrassing for you to be examined in the presence of your spouse. We will do everything we can to ensure that this is done in private. Furthermore, all study staff and interviewers are professionals with special training in these examinations/interviews.

You may feel some discomfort when being examined and taken blood samples. We do not anticipate any injury, illness or complications related to this study.

ARE THERE ANY BENEFITS BEING IN THIS STUDY?

It is expected that as the man accompanies their partners to the ANC and PNC clinic, they will receive information on pregnancy, labour and postnatal care. With this knowledge, they will be able to offer physical, emotional and financial support to their partners and family. Men will also get an opportunity to witness and participate in the care of their pregnant women in the facility. Additionally, men will also be screened for some diseases and offered appropriate care and treatment.

WILL BEING IN THIS STUDY COST YOU ANYTHING?

We do not think you will incur any extra cost while participating in this study except for male participants whose transport cost will be reimbursed.

VOLUNTARISM

You have the right to refuse participation in this study. You will get the same services and care whether you agree to join the study or not and your decision will not change the care you will receive. Please remember the participation in this study is voluntarily. You may ask questions related to the study at any time.

You may refuse to respond to any questions and you may stop an interview at any time. You may also stop being in the study at any time without any consequences to the services you receive here or any other organization now or in the future

CONTACT INFORMATION

If you have questions about the study call Mr. Joseph Mukobe on **0723793979**.

However, if you have questions about your rights as a study participant: You may contact Jomo Kenyatta University of Agriculture and Technology Ethical Review Committee Secretariat on erc@jkuat.ac.ke,

Participant's statement

The above information regarding my participation in the study is clear to me. The study has been explained to me and I have been given a chance to ask questions and my questions have been answered to my satisfaction. My participation in this study is entirely voluntary. I understand that my records will be kept private and that I can leave the study at any time. I understand that I will still get the same care and medical treatment whether I decide to leave the study or not and my decision will not change the care that I will receive from the clinic today or that I will get from any other clinic at any other time.

Name of Participant

Signature or Thumbprint..... Date

Name of Representative/Witness (where necessary) Relationship to
Subject

Investigators statement

I, the undersigned, have explained to the volunteer in a language s/he understands, the procedures to be followed in the study and the risks and benefits involved

Name of Interviewer

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

**Kiambatisho B: Taarifa ya mshiriki na fomu ya ruhusa ya watu wazima
kwa uandikishaji katika masomo**

Kichwa cha mafunzo: matokeo bora na afya ya kituo cha msingi kwa washirika wa kiume katika hospitali ya uzazi ya mama na mtoto mzawa katika mkoa wa Thika
5

Mkuu Investigator\and kitaasisi ushirikiano: **_JOSEPH MUKOBE
OKWAKO**, PhD mwanafunzi, JKUAT

Ningependa kuwaambieni kuhusu utafiti uliofanywa na watafiti waliotajwa hapo juu. Madhumuni ya fomu hii ya kibali ni kukupa maelezo ambayo utahitaji kukusaidia kuamua kama mshiriki wa kushiriki katika masomo. Jisikie huru kuuliza maswali yoyote kuhusu madhumuni ya utafiti, nini kinatokea kama wewe kushiriki katika utafiti, hatari na faida, haki yako kama kujitolea, na kitu kingine chochote kuhusu utafiti au fomu hii ambayo si wazi. Wakati tumejibu maswali yako yote kwa kuridhika kwako, unaweza kuamua kuwa katika utafiti au la. Mchakato huu unaitwa '

idhini ya taarifa '. Mara baada ya kuelewa na kukubaliana kuwa katika utafiti, nitakuomba kusaini jina lako au kutoa uchapishaji wa kidole kwenye fomu hii. Unapaswa kuelewa kanuni za jumla ambazo zinatumiwa kwa washiriki wote katika utafiti wa matibabu: i) uamuzi wako wa kushiriki ni wa kujitolea kabisa II) Unaweza kuondoa kutoka kwa utafiti wakati wowote bila lazima kutoa sababu ya kujiondoa kwako III-kukataa kushiriki katika utafiti haitaathiri huduma ambazo unastahili katika kituo hiki cha afya au vituo vingine. Sisi nitakupa nakala ya fomu hii kwa ajili ya rekodi yako.

Naomba tuendelee? **NDIYO/HAPANA**

Utafiti huu umeidhinishwa na hospitali ya Taifa ya Kenyatta-Chuo Kikuu cha Idara ya maadili na utafiti ya Nairobi

JE, UTAFITI HUU KUHUSU NINI?

Mtafiti waliotajwa hapo juu ni kuwahoji watu wanaohudhuria kliniki ya wajawazito. Lengo la mahojiano ni kujua njia za kuwahamasisha wanaume kuambatana na washirika wao katika kliniki wakati wa ujauzito, leba na kipindi cha baada ya kuzaa pamoja na kutoa msaada unaohitajika. Washiriki katika utafiti huu wa utafiti wataulizwa maswali kuhusu tabia za kijamii na demografia, ujauzito na asili ya msaada kutoka kwa washirika wao. Washiriki pia watakuwa na uchaguzi wa kufanyiwa majaribio kama vile damu ya random sukari (RBS), VVU na VDRL kwa ajili ya

Kutakuwa na takribani washiriki 154 katika utafiti huu kwa nasibu waliochaguliwa. Sisi ni kuomba ruhusa yako ya kufikiria kushiriki katika utafiti huu.

NINI KITATOKEA KAMA UTAAMUA KUWA KATIKA MASOMO HAYA YA UTAFITI?

Ikiwa unakubali kushiriki katika utafiti huu, mambo yafuatayo yatatokea:

Utahojiwa na mwandishi wa mafunzo katika eneo binafsi ambapo unahisi maswali ya kujibu kwa starehe. Mahojiano na mwisho takriban dakika 50. Hii itapata

habari za demografia za kijamii, historia ya ukunga na hali ya usaidizi wa wabia wakati wa ujauzito wa mwisho. Baada ya mahojiano kumaliza, utapokea utunzaji unaohitajika ufaao katika ujauzito na baadaye kupewa barua ya mwaliko ili kuomba mpenzi wako kuongozana nawe kwenye kliniki katika uteuzi unaofuata

Tutauliza nambari ya simu ambapo tunaweza kuwasiliana nawe ikiwa ni lazima. Ikiwa unakubali kutoa maelezo yako ya mawasiliano, itatumika tu kwa watu wanaofanya kazi kwa ajili ya utafiti huu na kamwe haitashirikiwa na wengine. Sababu za kwa nini tunaweza kuwasiliana na wewe ni pamoja na: kujua hali yako ya afya kama vile matatizo ya ujauzito na changamoto yoyote ambayo unaweza kukumbana nayo ambayo inaweza kuathiri ujauzito.

JE, KUNA HATARI YOYOTE, MADHARA YA KUTOFARIJI YANAYOHUSIANA NA UTAFITI HUU?

Sisi kuweka kila kitu wewe kutuambia kama siri iwezekanavyo. Tutatumia nambari ya msimbo ili kukutambulisha kwenye database ya kompyuta iliyohifadhiwa na password na itaweka rekodi zetu zote za karatasi kwenye Baraza la mawaziri la faili imefungwa. Hata hivyo, hakuna mfumo wa kulinda usiri wako kunaweza kuwa salama kabisa, kwa hivyo bado inawezekana kwamba mtu anaweza kujua kuwa ulikuwa katika utafiti huu na unaweza kupata maelezo kukuhusu. Pia, kujibu maswali katika mahojiano inaweza kuwa na wasiwasi kwa ajili yenu. Ikiwa kuna maswali yoyote ambayo hutaki kujibu, unaweza kuruka. Una haki ya kukataa mahojiano au maswali yoyote yanayoulizwa wakati wa mahojiano.

Inaweza kuwa aibu kwa wewe kuchunguza katika uwepo wa mke wako. Tutafanya kila kitu tunachoweza ili kuhakikisha kwamba hii inafanywa kwa faragha. Zaidi ya hayo, wafanyakazi wote wa utafiti na watafiti ni wataalamu wenye mafunzo maalum katika mitihani hii/mahojiano.

Unaweza kuhisi usumbufu wakati wa kuchunguza na kuchukuliwa sampuli ya damu. Hatarajia majeraha yoyote, ugonjwa au matatizo yanayohusiana na utafiti huu.

JE, KUNA FAIDA YOYOTE KUWA KATIKA UTAFITI HUU?

Matokeo ya utafiti itatoa taarifa kuhusu ufaafu wa kuwaalika washirika wa kiume kwa kliniki ya wajawazito kwa kutumia barua rasmi kutoka hospitali na hatua zilizochukuliwa kwa kuendelea kuhamasisha ledsagas wa wake zao.

JE, KATIKA UTAFITI HUU UNA GHARAMA YOYOTE?

Tunadhani hutapata gharama yoyote ya ziada wakati wa kushiriki katika utafiti huu.

VIPI KAMA UNA MASWALI BAADAYE?

Ikiwa una maswali zaidi au wasiwasi kuhusu kushiriki katika utafiti huu, tafadhali piga simu au kutuma ujumbe wa maandishi kwa wafanyakazi wa utafiti kwa idadi iliyotolewa chini ya ukurasa huu.

JE, CHAGUO ZAKO ZINGINE NI ZIPI?

Uamuzi wako wa kushiriki katika utafiti ni wa kujitolea. Wewe ni huru kukataa ushiriki katika utafiti na unaweza kuondoa kutoka kwa utafiti wakati wowote bila dhuluma au kupoteza faida yoyote.

FOMU YA KIBALI (TAMKO LA KIBALI)

Kauli ya mshiriki

Nimesoma fomu hii ya kibali au nilikuwa na habari iliyosomwa kwangu. Nimekuwa na nafasi ya kujadili utafiti huu wa utafiti na mshauri wa mafunzo. Nimekuwa na maswali yangu kujibiwa katika lugha ambayo Ninaelewa. Hatari na faida zimeelezewa kwangu. Ninaelewa kwamba ushiriki wangu katika utafiti huu ni wa kujitolea na kwamba ninaweza kuchagua kujiondoa wakati wowote. Kwa uhuru Ninakubaliana kushiriki katika utafiti huu wa utafiti.

Ninaelewa kwamba juhudi zote zitakuwa ni kuweka habari kuhusu utambulisho wangu binafsi wa siri. Kwa kusaini fomu hii ya kibali, sina haki yoyote

ya kisheria ambayo mimi kama mshiriki katika utafiti wa utafiti. Ninakubali kushiriki katika utafiti huu wa utafiti: Ndiyo/Hapana

Ninakubali kuwa na matone machache ya damu yangu kuhifadhiwa kwa ajili ya utafiti wa baadaye: **Ndiyo/Hapana**

Ninakubali kutoa maelezo ya mawasiliano ya kufuatilia: Ndiyo/Hapana

Sahihi ya mshiriki/kidole stempu _____ tarehe-----

Jina _____ chapwa la _____ mshiriki:

Taarifa ya mtafiti

Mimi, underaini, nimeelezea kikamilifu utondoti husika wa utafiti huu wa utafiti kwa mshiriki aliyetajwa hapo juu na kuamini kwamba mshiriki ameelewa na ana kwa hiari na kwa hiari kutokana na ridhaa yake.

Jina la mtafiti: _____ date: -----

Saini -----

Jukumu katika utafiti: -----

Kwa taarifa zaidi, wasiliana na _____ katika

Kwa

Appendix II: Pre-Intervention Questionnaire (English Version)

Section A: Maternal Socio-Demographic Characteristics

Please put an **X** or **Tick** against the most appropriate response

1.1 Place of residence	
1.2. Age	
1.3 EDD	
1.4 Religion	1. Catholic-----2. Protestant----- 3. Muslim----- -----4. Hindu-----5. Other----- (please specify)
1.5 Occupation	1. Housewife----- 2. Self-employed----- 3. Employed-----3. None-----
1.6 Educational level	1. No Education 2. Primary----- 3. Secondary----- 4. Tertiary-----
1.7 Choice of place of birth	1. Health facility..... 2. Home.....
1.8 Parity	
1.9 Do you have a house manager (house girl)	1. Yes.....2. No.....
2.0 Mobile number	

Section B: Checklist for Assessment of Birth preparedness and complication readiness (For male partners)

1. What are the danger signs in pregnancy?

- ☐ Per vaginal bleeding
- ☐ Foul smelling per vaginal discharge
- ☐ Severe and persistent headache with blurred vision
- ☐ Feeling of body hotness
- ☐ Prolonged vomiting
- ☐ Severe abdominal pain that that
- ☐ Convulsions
- ☐ Reduced or absent foetal movements
- ☐ Fast or difficult breathing
- ☐ Other (please specify)
- ☐ Don't know

2. For how long should an infant be breastfed exclusively (**for male partner**)

- ☐ 1-2 months
- ☐ 3-4 months
- ☐ 5-6 months
- ☐ 6 months
- ☐ I don't know
- ☐ Others (please specify)

Appendix III: Pre-Intervention Questionnaire (Kiswahili Version)

Sehemu A: Tabia ya Kijamii na idadi ya watu

Tafadhali weka alama X juu ya jawabu lililo mwafaka sana

1.1 Makao yako	
1.2 Tarehe ya kuzaliwa	
1.3 Dini	1. Katoliki-----2. Mprotestanti----- 3. Mwislamu- 4. Mhindu-----5. Nyingine----- (Tafadhali taja)
1.4 Kazi	1. Mke wa nyumbani-----2. Kazi binafsi----- 3. Waajiriwa----- - 3. Huna kazi-----
1.5 Kiwango cha elimu	1. Haukuenda shule 2. Elimu ya msingi-- 3. Sekondari-----4. Elimu ya juu-----
1.6 Mahali ulipozalia mwisho	1. Hospitalini..... 2. Nyumbanie.....
1.7 Nambari ya kujifungua mtoto	(1) Zaidi ya mara moja..... (2) Mara tano au Zaidi.....
1.8 Ulijifungua mimba ya mwisho namnagani	1. Kawaida.....2. Kupazuliwa.....
1.9 Uko na mfanyikazi wa nyumbani	1. Ndio..... 2. La.....
2.0 Nambari ya simu ya rununu	

Sehemu B: Takwimu za kimsingi za kuamua kiwango na aina ya ushiriki kwa ujauzito uliopita

1. (a) Je! Uliambatana na mtu yeyote wakati ulikwenda kliniki ya ujauzito katika ujauzito wako wa mwisho?

- ☐ Ndio
- ☐ Hapana

(b) Ikiwa ndio hapo juu, ni nani aliyeandamana nawe?

- ☐ Mume / mwenzi wa kiume
- ☐ Mama
- ☐ Dadangu
- ☐ Rafiki
- ☐ Wengine (tafadhali taja)

(c) Ikiwa ni mume wako, je aliruhusiwa kuingia nawe kwenye chumba cha kliniki cha ujauzito?

- ☐ Ndio
- ☐ Hapana

2. Ni msaada gani ambao mwenzi wako alitoa wakati wa ujauzito (weka alama kwa zile ambazo unakubaliana).

a. Msaada wa kifedha

- b. Alifanya kazi za nyumbani kama vile kupikia, kuosha vyombo na kutunza watoto wengine?
- c. Alinikumbusha juu ya ziara ya kliniki
- d. Alinikumbusha kuchukua dawa zilizowekwa
- e. Aliniuliza ikiwa kuna ishara yoyote ya hatari katika ujauzito
- f. Kwa pamoja tulijadili mahali pa kuzalia
- g. Aliniunga mkono kuchagua mbinu sahihi ya kupanga uzazi.

Appendix IV: Post-Intervention Questionnaire

Section A: Checklist for male involvement in Pregnancy and birth.

1. (a) Accompanied by partner (husband) to the antenatal clinic? YES / NO
- (b) Number of ANC visit accompanied by partner: 1/2/3/4/5/6/7/8
- (c) Partner tested for HIV during the ANC clinic: YES / NO
2. Support provided by partner during pregnancy and after birth (tick ones that apply).
 - i. Offered financial support
 - ii. Performed house chores such as cooking, washing utensils
 - iii. Reminded me of clinic visit
 - iv. Reminded me to take prescribed medicines (IFAS)
 - v. Asked me about danger signs during pregnancy
 - vi. Jointly discussed choice of place of birth
 - vii. Supported me in choosing an appropriate family planning method
3. (a) Experienced danger sign in pregnancy (circle one that applies).
 - Vaginal bleeding;
 - Severe and persistent headache
 - Convulsions
 - Severe abdominal pains
 - Severe lower backache
 - Foul vaginal discharge and or itchiness
 - Reduced or absent foetal movement
 - Drainage of amniotic fluid
 - Fast or difficult breathin
 - Others (please specify)

(b) If yes above, after how long did you seek medical attention?

- Immediately
- 1-3 days
- 4-7 days
- More than 7 days

4. (a) Experienced domestic violence: YES / NO.

(b) If yes, please specify: (a) physical, (b) emotional (c) sexual (d) others

5. Place of delivery:

- Health facility
- Home

6. (a) Accompanied to hospital for childbirth by partner: YES / NO

7. (a) Missed taking IFAS more than once: YES / NO

(b) If yes above, how many times do you recall?

Section B: Checklist for Assessment of Birth preparedness and complication readiness

B1: To be answered by male partner

1. What are the danger signs in pregnancy?

- Per vaginal bleeding
- Foul smelling per vaginal discharge
- Severe and persistent headache with blurred vision
- Feeling of body hotness
- Prolonged vomiting
- Severe abdominal pain that that
- Convulsions

- Reduced or absent foetal movements
- Fast or difficult breathing
- Others (please specify)

2. For how long should an infant be breastfed exclusively

- 1-2 months
- 3-4 months
- 5-6 months
- 6 months
- other
- I don't know

B1: To be answered by the woman

1. Bought all the required items in a birth kit before birth (YES/NO)

- Cotton wool
- A cord clamp/string
- A razor blade/surgical blade
- A pair of sterile or clean gloves

2. (a) Planned for the mode of transport in case of emergency: YES/NO

(b) If yes above, what was the mode of transport

- Motorcycle
- Taxi
- Private car
- Public means

Kiambatanisho D: Post-intervention Questionnaire (Kwa lugha ya Kiswahili)

Sehemu A: Orodha ya baada ya kuingilia kati ushiriki wa kiume katika Mimba, Utoaji na kipindi cha baada ya kuzaa.

1.(a) Je! Uliambatana na bwana wako wakati ulikwenda kliniki ya ujauzito: **Ndio / Hapana**

(b) Kama ndio, weka alama kwenye kliniki uliambatana na bwana wako.

- ☐ Kliniki ya pili
- ☐ Kliniki ya tatu
- ☐ Kliniki ya nne
- ☐ Kliniki ya tano
- ☐ Kliniki ya sita
- ☐ Kliniki ya saba
- ☐ Kliniki ya nane

2. Ni msaada gani ambao mwenzi wako alitoa wakati wa ujauzito (weka alama kwa zile ambazo unakubaliana).

- a. Msaada wa kifedha
- b. Alifanya kazi za nyumbani kama vile kupikia, kuosha vyombo na kutunza watoto wengine?

- c. Alinikumbusha juu ya ziara ya kliniki
- d. Alinikumbusha kuchukua dawa zilizowekwa
- e. Aliniuliza ikiwa kuna ishara yoyote ya hatari katika ujauzito
- f. Alinifajiri na kutoa mapenzi.
- g. Aliniunga mkono kuchagua mbinu sahihi ya kupanga uzazi

3. (a) Kupatwa na dalili hatari za ujauzito.

- o Kutokwa na damu kwa uke;
- o maumivu ya kichwa kali
- o Makadirio,
- o maumivu makali ya tumbo,
- o maumivu ya mgongo makali ya chini,
- o Mchafu wa uke mbaya na kutokwa kwa uke;
- o Kupunguza au kutokuwepo kwa harakati za fetusi,
- o Kutokwa kwa maji ya amniotic kabla ya uchungu wa kuzaa
- o Kupumua kwa haraka au kwa shida

(b) Kama ndio, ulichuluwa muda gani kuelekea hospitalini kwa matibabu?

- ☐ Haraka Immediately
- ☐ 1-3 days
- ☐ 4-7 days
- ☐ Zaidi ya siku saba

4. (a) Ulipata dhuluma za nyumbani ukiwa mjamzito: **Ndio / La.**

(b) Kama ndio, tafadhali taja:

- ☐ Kimwili
- ☐ Kihemko
- ☐ Kijinsia

5. Mahali pa kujifungulia:

- ☐ Hosipitali
- ☐ Nyumbani

6. Uliambatana na mumeo ukienda kujifungua: **Ndio / Hapana**

Sehemu B: Orodha ya ukaguzi wa utayari wa kuzaliwa na utayari wa shida

(Kujazwa wakati wa kusajiliwa na wiki moja baada ya kujifungua)

1. Ufahamu juu ya ishara tatu hatari wakati wa ujauzito.

o Kutokwa na damu kwa uke;

o maumivu ya kichwa kali

o Makadirio,

o maumivu makali ya tumbo,

o maumivu ya mgongo makali ya chini,

o Mchafu wa uke mbaya na kutokwa kwa uke;

o Kupunguza au kutokuwepo kwa harakati za fetusi,

o Kutokwa kwa maji ya amniotic kabla ya uchungu wa kuzaa

o Kupumua kwa haraka au kwa shida

2. Kuhudhuria kliniki ya ujauzito angalau mara inne

Ndio

Hapana

3. Kuzalishwa na mtahiri wa kuzaa mjuzi

Ndio

Hapana

4. Kununua vitu zinazohitajika wakati wa kujifungua

Ndio

Hapana

Appendix V: Consent to Participate in Focus Group

You have been asked to participate in a focus group. The purpose of the group is to try and understand why men do not accompany their spouses to antenatal, labour and postnatal clinics and seek your views on best strategies to counter this. The information learned in the focus groups will be used to design interventions that will seek to promote male involvement in maternal, sexual and reproductive health.

You can choose whether or not to participate in the focus group and stop at any time. Although the focus group will be voice recorded, your responses will remain anonymous and no names will be mentioned in the report. There are no right or wrong answers to the focus group questions. We want to hear many different viewpoints and would like to hear from everyone. We hope you can be honest even when your responses may not agree with the rest of the group. In respect for each other, we ask that only one individual speak at a time in the group and that responses made by all participants be kept confidential.

I understand this information and agree to participate fully under the conditions
stated above:

Signed:_____

Date:_____

Appendix VI: Focus Group Discussion Guide

1. What do you understand by the term ‘male involvement in maternal and newborn health’?”?
2. What are the reasons for low male involvement in maternal and newborn health services?
3. What are the most cost-effective strategies to promote male involvement in maternal and newborn health?

Appendix VII: A Sample of Male Invitation Letter

Date.....

THIKA LEVEL FIVE HOSPITAL

MCH

Dear -----

Pokea salamu kutoka kwangu nikitumaini uko salama. Nachukuwa nafasi hii kukualika kwa kiliniki ya Mama, mtoto and Baba siku ya asubuhi. Mpenzi wako atashughulikiwa haraka ili urudi shughuli zako. Jaribu sana ukuje. Utapata mafundisho ya Afya yako na Bibi wako na kupimwa Blood pressure. Utarudishiwa nauli shilingi mia tatu.

Asante sana.

Ni mimi mwalimu wa chuo kikuu cha JKUAT

Joseph Mukobe

Appendix VIII: First Ethical Approval Letter



JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY
P.O BOX 62000(00200) NAIROBI, Tel: (067) 58700001-4
(Office of the Deputy Vice Chancellor, Research Production and Extension Division)
JKUAT INSTITUTIONAL SCIENTIFIC AND ETHICS REVIEW COMMITTEE

REF: JKU/2/4/896B

Date: 4th May, 2023

JOSEPH MUKOBE OKWAKO
SCHOOL OF NURSING, JKUAT

Dear Mr Okwako,

RE: EFFECTIVENESS OF A FACILITY BASED INTERVENTION IN MALE PARTNER INVOLVEMENT IN MATERNAL AND NEONATAL HEALTH IN A SELECTED PUBLIC HEALTH FACILITY IN KIAMBU COUNTY.

This is to inform you that JKUAT Institutional Scientific and Ethics Review Committee has considered your request to renew the above research proposal. Your application approval number is JKU/ISERC/02316/0891. The approval period is 4th May 2023 to 3rd May 2024.

- i. Only approved documents including (informed consents, study instruments, MTA) will be used
- ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by JKUAT ISERC.
- iii. Death and life threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to JKUAT ISERC within 72 hours of notification
- iv. Any changes, anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to JKUAT ISERC within 72 hours
- v. Clearance for export of biological specimens must be obtained from relevant institutions.
- vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal.
- vii. Submission of an executive summary report within 90 days upon completion of the study to JKUAT ISERC.

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

Yours sincerely

Dr Patrick Mburugu
CHAIR, JKUAT ISERC



JKUAT is ISO 9001:2015 and ISO 14001:2015 certified
Setting Trends in Higher Education, Research, Innovation and Entrepreneurship



Appendix IX: Renewed Ethical Approval Letter



JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY
P.O BOX 62000(00200) NAIROBI, Tel: (067) 58700001-4
(Office of the Deputy Vice Chancellor, Research Production and Extension Division)

JKUAT INSTITUTIONAL SCIENTIFIC AND ETHICS REVIEW COMMITTEE

REF: JKU/2/4/8968 Date: 7th December 2023

Joseph Mukobe
SCHOOL OF NURSING

Dear Mr Mukobe

RE: EFFECTIVENESS OF A FACILITY BASED INTERVENTION IN MALE PARTNER INVOLVEMENT IN MATERNAL AND NEONATAL HEALTH IN A SELECTED PUBLIC HEALTH FACILITY IN KIAMBU COUNTY.

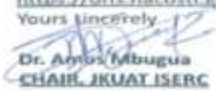
This is to inform you that JKUAT Institutional Scientific and Ethical Review Committee has reviewed and approved your above research proposal. Your application approval number is **JKU/ISERC/02316/1113**. The approval period is **7th December 2023 to 6th December 2024**

Only approved documents including (informed consents, study instruments, MTA) will be used.

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

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

Yours sincerely,


Dr. Annet Mbugua
CHAIR, JKUAT ISERC

 JKUAT is ISO 9001:2015 and ISO 14001:2015 certified
Setting Trends in Higher Education, Research, Innovation and Entrepreneurship



Appendix X: NACOSTI Permit

 REPUBLIC OF KENYA	 NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION
Ref No: 207751	Date of Issue: 24 March 2022
RESEARCH LICENSE	
	
This is to Certify that Mr. JOSEPH MUKAHE OKWAKO of Jomo Kenyatta University of Agriculture and Technology, has been licensed to conduct research in Kiambu on the topic: Effectiveness of a Facility Based Intervention in Male Partner Involvement in Maternal and Newborn Health in Selected Public Health Facilities in Kiambu County, for the period ending : 24/March/2022.	
License No: NACOSTI/P/21/9668	
207751 Applicant Identification Number	 Director General NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION
	Verification QR Code 
NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.	

Appendix XI: Kiambu County Government Resesarch Authorization

COUNTY GOVERNMENT OF KIAMBU DEPARTMENT OF HEALTH SERVICES

All correspondence should be addressed to HEAD
HEALTH - HEALTH DEPARTMENT
Email address: head@kiambu.go.ke
mkwasa@kiambu.go.ke
Tel. Nos: 0721641318
0721974633



HEALTH RESEARCH AND DEVELOPMENT
UNIT
P. O. BOX 2344 - 00900
KIAMBU

Ref. No.: KIAMBU/HRDU/21/08/30/RA_OKWAKO

Date: 30th Aug 2021

TO WHOM IT MAY CONCERN

RE: CLEARANCE TO CONDUCT RESEARCH IN KIAMBU COUNTY

Kindly note that we have received a request by Mr. Joseph Mukobe Okwako of Jomo Kenyatta University of Agriculture and Technology to carry out research in Kiambu County, the research topic being on "Effectiveness Of A Facility Based Intervention In Male Partner Involvement In Maternal And Newborn Health In Selected Public Health Facilities"

We have duly inspected his documents and found that he has been cleared by NACOSTI to carry out the research for a period ending 24th March 2022. He thus does not need any further clearance with another regulatory body in order to conduct research within the county of Kiambu.

However, it is incumbent upon the institution where he is carrying out research to ensure that he receives adequate supervision during the process of conducting the research. This note also accords him the duty to provide a feedback on his research to the county at the conclusion of his research.

DR. MWANCHI KWASA
COUNTY CLINICAL RESEARCH OFFICER
KIAMBU COUNTY

Appendix XII: Thika Level 5 Hospital Authorization

COUNTY GOVERNMENT OF KIAMBU
DEPARTMENT OF HEALTH SERVICES

Telephone: +254 20 663 0000
Email address: thika@hospital.or.ke
When replying please quote:
Ref: TH/ETH/2021/001/1/2021

THE MEDICAL SUPERINTENDENT,
P.O. BOX 25 - 01000
THIKA

Date: 9th September, 2021

APPROVAL TO CARRY OUT RESEARCH

Principle Investigator: JOSEPH M. OKWAKO

RE: EFFECTIVENESS OF A FACILITY BASED INTERVENTION IN MALE PARTNER INVOLVEMENT IN MATERNAL AND NEWBORN HEALTH IN SELECTED PUBLIC HEALTH FACILITIES IN KIAMBU COUNTY.

Following deliberations by Thika Level 5 Hospital's Training, Research and Ethics Committee (TREC), and subject to provision of all the necessary licenses and ethical approvals, your proposal to carry out the above referenced research, at this facility, has been approved.

This approval is subject to the following mandatory conditions:

1. You shall submit a copy of the abstract of the final report, through the above contact details.
2. Where called upon, you shall be expected to make a feedback presentation to the hospital's Training, Research and Ethics Committee.
3. You shall maintain ethical consideration and the research subjects' confidentiality as outlined in your proposal.
4. Any patient confidential information that you may access during your research should not be used without consent.
5. You shall make payments of applicable research fees to the hospital before commencing research activities.

This letter is valid up to FEBRUARY 2022.

For any queries feel free to contact the committee chair through the Medical Superintendent's office or training, research and ethics committee office.

Thank you and all the best.


Dr. Christine Munyendo
Chairperson, Training Research & Ethics Committee,
THIKA LEVEL 5 HOSPITAL

Receipt no: 11909/
Dated 18/10/2021
Alex.
\$

FORWARDED
MEDICAL SUPERINTENDENT
THIKA LEVEL 5 HOSPITAL

Appendix XIII: Publication

Barriers to male partner accompaniment and participation in maternal and child health care in Thika and Kiambu Level Five Hospital, Kenya

Joseph Mukobe Okwako, Grace Wambura Mbuthia, Karani Magutah

Corresponding author: Joseph Mukobe Okwako, Department of Midwifery, Jomo Kenyatta University of Agriculture and Technology, Juja, Kenya. jmukobe@jkuat.ac.ke

Received: 18 Nov 2022 - Accepted: 26 Mar 2023 - Published: 20 Apr 2023

Keywords: Barriers, determinants, male involvement, male accompaniment, male participation, maternal and child health

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Available online at: <https://www.panafrican-med-journal.com//content/article/44/189/full>.

Barriers to male partner accompaniment and participation in maternal and child health care in Thika and Kiambu Level Five Hospital, Kenya

Joseph Mukobe Okwako^{1,&}, Grace Wambura Mbuthia², Karani Magutah³

¹Department of Midwifery, Jomo Kenyatta University of Agriculture and Technology, Juja, Kenya, ²Department of Community Health Nursing, Jomo Kenyatta University of Agriculture and Technology, Juja, Kenya, ³Department of Medical Physiology, Moi University, Eldoret, Kenya &Corresponding author

Joseph Mukobe Okwako, Department of Midwifery, Jomo Kenyatta University of Agriculture and Technology, Juja, Kenya

Abstract

Introduction: the 1994 International Conference on Population and Development (ICPD) recommended that men should share responsibility and be actively involved in responsible parenthood, sexual and reproductive health. The level of male involvement in Kenya remains low despite growing evidence showing its benefits in maternal and newborn health. This study sought to determine factors influencing male partner involvement in maternal and child health with focus on accompaniment to maternal and child health (MCH) department. **Methods:** a qualitative study utilizing exploratory design was used to gather the views of men and nurse-midwives working in the MCH department of Thika and Kiambu County Teaching and Referral hospitals in January 2022. Qualitative data were collected from focused group discussions from nurses and men respectively. The number of participants per Focused Group Discussion (FGD) ranged between six to eight. The principal author moderated the FGD that were audio recorded and lasted between 60-90 minutes. Content analysis was used to analyse data following the five steps to yield themes using MAXQDA 2022 software. **Results:** five categories emerged as factors influencing male accompanying their spouses to MCH clinic: traditional gender norms, roles and beliefs, unfavorable MCH environment, work commitment, fear of HIV testing and men's work commitment. **Conclusion:** traditional gender roles and norms, work commitment by men and unfavourable MCH set-up were key barriers

identified that hinder men from accompanying their spouses to MCH clinic. There is need to develop an effective, feasible and sustainable intervention that will encourage male partners to accompany their spouses and participate in MCH services.

Introduction

The role of men in access to care is believed to be critical given their role in decision-making. Men play a central role in improving maternal health [1]. For instance, male involvement can lead to increased access to health services for women, children, and men themselves, increased male partner support for family planning and reproductive health services, and increased uptake of Sexually Transmitted Infections (STI) and HIV services [2,3]. Interventions to engage men in maternal and newborn health can increase healthcare-seeking behavior and support more equitable couple communication and decision-making for maternal and newborn health [4]. Men as heads of the family control resources, consult soothsayers to determine the health seeking or treatment for pregnant women and serve as the final authority on where and when pregnant women should seek medical care [5]. Beyond that, they have no expectation of any further role during antenatal care and therefore find it unnecessary to attend clinics with their partners. It is believed that when men accompany their partners to health facilities, it helps them understand their maternal health problems and needs and eventually results in a greater understanding of their families and the community in general [6]. The Kenya Reproductive, Maternal, Newborn, Child and Adolescent Health (RMNCAH) Investment Framework advocates for the need to involve men to enhance the utilization of health care services by women [7].

In spite of these enormous available evidence, studies have reported low male attendance and involvement in maternal and child health departments in Kenya [8-10]. A Kenyan National Survey and an Eastern Kenyan study revealed that about 30% and 23% of men respectively accompany their spouses and or wives to the MCH clinic [8,9]. Several barriers have been cited that impede men from accompanying their spouses to the MCH department. They include negative cultural beliefs that maternal health is a female role while men are family providers; poor attitudes of healthcare providers, lack of space to accommodate male partners in health facilities; and the high

cost associated with accompanying women to seek maternity care [9-13], lack of services targeting men, non-invitation to the clinic, long time spent at the clinic and lack of privacy at the clinics [10]. However, most of these studies utilized interviews and structured questionnaires to collect data, and men's perspective was rarely captured. Moreover, only one study from the literature review which sought the perspectives of both HCWs and men was identified. This study, therefore, sought to explore factors influencing men from accompanying their spouses to MCH clinics from nurses and men in a different locality. Having a clear background understanding of the issues can better inform an appropriate intervention to promote male involvement in MCH services.

Methods

Study design: this is a qualitative study that adopted an exploratory approach to determine factors hindering men from accompanying their partners to the MCH department.

Study setting: The study was conducted in Thika and Kiambu Level 5 Hospitals which are located in Kiambu County bordering Nairobi, Kenya. The two facilities are County teaching and referral hospitals offering curative, preventive, rehabilitative, and preventive health services. The study sites were purposively selected because of observed low levels of men accompanying their spouses to the MCH clinic (about three female accompaniments for sixty ANC attendance in a day).

Study population and participant recruitment: The study was conducted among nurse-midwives selected purposively from both Kiambu and Thika Level 5 Hospitals in Kiambu County which offer teaching and referral services. Male spouses of women attending MCH care services were also invited to participate. Purposive sampling was selected because participants shared common characteristics under study. In this case, the nurse-midwives had shared expert experience in the study topic while the men had their spouses attending ANC. Only nurses working in the MCH clinic were eligible for participation and were invited through WhatsApp, email, and phone calls.

The nurse-in-charges facilitated the process by providing contacts of all the nurses. Participants in virtual Focused Group Discussions (FGDs) were requested to register using their official names while joining the Zoom link. Money used to purchase bundles was reimbursed at the end of the discussion as promised. The consent process was established by providing information about the study and participants voluntarily requested to confirm their availability a few days prior to data collection. Nurses who volunteered to participate in the study were placed in three groups of 6-7 members. Participants in two FGDs were invited to attend virtual discussions while one FGD was held face-to-face in the MCH department. Women attending the MCH clinic were selected using homogeneous purposive sampling. Women who were at the waiting bay, staying with their spouses, were young, and having their first pregnancy were issued letters inviting their spouses to attend FGDs in the clinic. A sample size of 16 men was invited which was deemed sufficient to form two male FGDs comprising at least six participants as their views were to complement the perspectives of nurses whose views had already reached saturation in the third FGD. Six and seven men turned up for the FGDs on days one and two respectively [14].

Data collection, management, and analysis: Data collection was done using focused group discussions composed of between 6-7 participants. The discussions were held in English. Data collection took place in December 2021 for nurse-midwives and in January 2022 for male participants. The principal researcher moderated three focused group discussions among nurse-midwives and two FGDs among men which were audio recorded and lasted 60-90 minutes. It is generally accepted that between six and eight participants are sufficient for an FGD while three focused group discussions are enough to identify all of the most prevalent themes within the data set [14,15]. Two FGDs among nurse-midwives were done virtually while the rest (three) were conducted face-to-face in the MCH department. Data saturation was achieved in the three FGDs from nurses and the male FGDs were used to complement the data. Data from focus group discussions were imported into MAXQDA version 2022 for content analysis following the five steps outlined to yield themes [16]. Both inductive and deductive coding was used. Initial codes were generated and new codes were generated after reading data. Codes were assigned to data. General refining of codes continued as analysis continued to subsequent FGDs and emerging sub-categories and

categories generated. Finally, an analysis of the generated categories was done and a conclusion was drawn. Data validity was ensured through member checking of the transcribed data and generated themes. Furthermore, the principal researcher shared the audio-recorded FGDs, and transcripts and analyzed data with co-researchers, and their inputs were incorporated into the final analysis.

Ethical considerations: Research ethical approval and permits were sought from Jomo Kenyatta University of Agriculture and Technology Research Ethics Committee (Ref. no. JKU/2/4/896B) and National Commission for Science, Technology, and Innovation (NACOSTI); Ref. no. 207751 respectively. Participants were informed about the nature and benefits of the study before obtaining written consent. Confidentiality was ensured by assigning personal identification numbers to study participants.

Results

Socio-demographic characteristics: nearly all the nurses working in the MCH department who participated in the study were female (n=18). Most participants (n=13) had attained a diploma in Kenya Registered Community Health Nursing as the highest level of education. The findings also show that the majority of male respondents were casual workers of mostly low socio-economic status. Table 1 shows the socio-demographics of the participants.

Barriers to low male accompaniment and participation in maternal and child health services: The study sought to explore factors that lead to low female accompaniment by their spouses in antenatal and postnatal clinics. Six themes emerged to describe the views of both nurses and men as shown in Table 2. These were: traditional gender norms, roles, and beliefs, unfavorable MCH set-up, work commitment, fear of HIV testing, and lack of awareness.

Traditional gender norms, roles, and beliefs: the nurses revealed that it is a cultural belief, norm, and practice that pregnancy, childbirth, and care are the responsibility of women. This was reiterated by the majority of male respondents as indicated below. It is a traditional belief that pregnancy and childbirth are supposed to

be a woman's affair. Since time immemorial, men have kept off the issue entirely because it is not a man's affair. A woman is supposed to be helped by female friends and TBAs,' (participant 1, FGD 3-nurse). 'It is a societal tradition for men not to accompany their wives. As Africans, it is the responsibility of the woman to go to the clinic while pregnant and also take children for immunization,' (participant 5, FGD 2-man). 'In Africa, it is shameful to walk with a woman while pregnant. Men think that society will backbite them that they are walking with their wives to the clinic,' (participant 5, FGD 2-man).

Work commitment: Work commitment was reported by most respondents as an impediment to accompanying their spouses to the MCH department. To the majority of men who worked in the informal sector, they pointed out a lack of time as they went to work in order to earn a living for their families. Furthermore, it was noted that the MCH department was operational only on weekdays for which it was difficult for men to get a day off. 'The clinic is not on Saturday or Sunday. If it was Saturday or Sunday, I may go say at 2.00 pm after working. In most cases, the clinic runs from 8.00 am to 2.00 pm on weekdays,' (participant 1, FGD 2-man).

'The working environment affects going to clinic. I can't fail to go on duty because I am escorting my wife to clinic. Even if you tell the supervisor you are taking your wife to clinic, he/she will tell you to let the wife go alone while you report to work. The boss will not see the need to accompany your wife to clinic yet the wife is supposedly free,' (participant 1, FGD 1-man). Another thing is you find most women in town are housewives and their husband are breadwinners who are largely self-employed. They leave their homes to go earn a living for their families thus lack time to accompany their partners to clinic,' (participant 2, FGD 1-man).

'There is also a case where the husband is working far away from the wife and therefore the woman has no choice but to go alone,' (participant 3, FGD 1-nurse).

'Maybe the man is a casual worker who is paid on daily basis, so if you tell him to accompany the wife to clinic, he imagines he will lose the wages so he will rather not go because if he does, the whole day will be wasted,' (participant 3, FGD 3-nurse).

Fear of HIV testing: a few respondents pointed out that some men do fear couple HIV testing which is a voluntary routine test among pregnant and lactating women. As a result, some men kept away from accompanying their spouses to the MCH department.

I think some men fear HIV testing. You know the first visit you are tested for HIV. Even if you come with evidence of previous testing, they will still repeat testing. So, some men keep away from the first visit and wait for the results of their wives. If it turns out negative, they may go subsequent clinic visits,’ (participant 2, FGD 2-man). When it comes to ANC, some men may fear going to the clinic because of HIV testing because the woman has to be tested for HIV’ (participant 6, FGD 2-nurse).

Unfavourable maternal and child health set-up: Respondents cited unsupportive staff; long queues and waiting time, absence of male staff in the MCH, and lack of male services as barriers to men accompanying their spouses to the MCH department.

Unsupportive staff:

‘There are men who are willing to take their spouses to the clinic but when they go to ANC, healthcare workers will tell the man to remain outside. So, next time he will not accompany the wife to the clinic,’ (participant 6, FGD 2-nurse).

Sometimes, they complain that even the attitude of health care workers is negative. They are not friendly to encourage men to attend the clinic frequently so they tend to relax and not accompany their partners. Even when they accompany their partners, a times they are not given a chance to enter the room together, (participant 5, FGD 1-nurse).

Long queues

Men don’t like lining up together with women and maybe the lines are so long and they want to go somewhere to look for money or work so they prefer somewhere where they can be seen immediately so that they can go look for money (participant 3, FGD 2-nurse).

‘Men may also not want to attend clinic because of delay in receiving care. They don’t want to line-up,’ (participant 6, FGD 3-nurse).

Staff gender in the maternal and child health:

Yes, absence of male staff can also contribute. It is really hard to see a male nurse working in MCH,’ (participant 4, FGD 3-nurse).

Some men are unable to disclose to female nurses. You will hear them say they don’t want to be attended to by female nurses. In most MCH clinics, we have female nurses working there, so men will not go to clinic at all because they know they will find female nurses (participant 2, FGD 2-nurse).

‘If you went to the clinic and found the one attending to you is a female staff younger than you and you want to say something about the wife, you will be shy to talk. For example, issues of sexual intercourse,’ (participant 7, FGD 2-man).

Lack of services targeting men:

‘Talk of reproductive health needs, men just feel MCH is mother and child health,’ (participant 5, FGD 3-nurse).

Boredom at the waiting bay:

If you look at MCH in private and government hospitals, there is a lot of difference. I mean even while sited there you are occupied with a magazine, TV and you won’t miss news but in a public facility, there are just 1,2, or 3 posters from January to December so the men will come, read all those posters and get bored (participant 3, FGD 1-nurse).

Lack of awareness:

Another reason is due to lack of awareness. The government has ignored men who have no knowledge on the need to accompany their partners,’ (participant 6, FGD1-nurse). Men lack information so they basically don’t know why they need to go

to MCH clinic. Not being empowered enough is the reason why they don't support their partners (participant 1, FGD 2-man).

Discussion

In this study, only female nurses participated in the study which reflects the gender deployment disparity in most MCH departments. Moreover, casual and informal employment status among male participants reflects the low socio-economic status of clients who seek services in public hospitals that may impede male accompaniment. The findings of this study mirror in many aspects those of previous studies on factors influencing male involvement in maternal, newborn and child health services. In this study, traditional gender norms, roles and beliefs were identified as barriers to males accompanying their partners to the MCH department. Respondents indicated that maternal and child health services were a preserve for women while men went to work to earn a living. Male participants indicated that it was embarrassing to be seen with a pregnant woman in the clinic. Moreover, it was noted that the name maternal and child health left out the male component thus putting off men from going to the MCH department with their partners. This finding concurs with other previous studies which indicated that patriarchal community values and strong socio-cultural and gender norms hindered the adoption of male involvement [12,17-19]. In their study findings, it was noted that perceptions that pregnancy care is a female role while men are family providers hindered male involvement in MCH services [9].

Lack of time by men due to work commitment and an unsupportive MCH environment were other key barriers identified as hindering men from accompanying their spouses. Since most men respondents were casual labourers, they could not be given off from work to attend the MCH clinic. It was pointed out that the MCH clinic was operational during weekdays and preferably morning hours hence not accommodative to most men in casual employment. The characteristic long queue, boredom, unfriendly staff to male companions, and lack of health services addressing male needs discouraged men from attending the MCH department. In related study findings, poor attitudes of healthcare providers, lack of space to accommodate male partners in health facilities [9,12], the men's nature of work, the lack of services

targeting men, and long time spent at the clinic [12,13,18] were cited as barriers to male involvement in MCH services. Moreover, it was noted that while some men accompany their pregnant partners to the antenatal clinic and wait outside, very few men participate in antenatal consultations [20]. Other studies identified unfavourable opening hours of services and the high cost associated with accompanying women to seek maternity care [9]; low income and expenses incurred at ANC/PNC clinics, non-invitation to the clinic, and lack of privacy at the clinics [12]; lack of interest, men always busy [19], lack of separate waiting spaces for men, and being in a polygamous relationship [20,21]. As found in this study, fear of HIV testing [20,21], and lack of information among men on the importance of male involvement in sexual and reproductive health [13,22-24] were other barriers to male involvement in antenatal care.

Study limitations: some views presented in this study such as the setting of MCH do not reflect the perspective of private and faith-based health facilities. Virtual FGD's limited observation of participants' body language. Furthermore, some participants in the virtual FGDs encountered technological disruptions which interfered with the timing and quality of the discussions. The findings are also limited to men of low-socioeconomic status since nearly all the male respondents were casual labourers.

Conclusion

The findings of this study reflect the perspectives of men of low socio-economic status and healthcare workers working in public hospitals on barriers to low male accompaniment and participation in MCH services. These barriers include socio-cultural norms, nature of men's work, unsupportive MCH environment and fear of HIV testing. Men accompanying their spouses to MCH department while being involved in the care of their partners can enhance the quality of maternal, child and reproductive health. There is need for stakeholders in health sector to design robust evidence-based interventions to overcome these barriers with a view to promoting male involvement in MCH services.

What is known about this topic

- A number of studies have identified barriers to male involvement in maternal, child, sexual and reproductive health though none was found to have been conducted in the study setting.

What this study adds

- Unlike other previous similar studies, this study sought the perspectives of both the health care workers and men who had been invited to the hospital to determine barriers to male involvement thus providing a complementary, rich and validated data;
- This study also established that the naming of the department as MCH, limited working hours in the MCH department that excluded weekends and evenings are important barriers that hinder men from accompanying their spouses to the clinic in the study area.

Competing interests

The authors declare no competing interests.

Authors' contributions

Joseph Mukobe Okwako who is the principal researcher conceived the research idea and designed the study in collaboration with Grace Wambura Mbuthia, and Karani Magutah. While Joseph Mukobe Okwako collected the data, Grace Wambura Mbuthia, and Karani Magutah participated in data analysis and interpretation. Joseph Mukobe Okwako drafted the manuscript which was reviewed by other authors before final approval for publication. All the authors have read and agreed to the final manuscript.

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