MALE PARTICIPATION IN UTILIZATION OF ANTENATAL CARE SERVICES AMONG THEIR SPOUSES IN SELECTED MANUFACTURING INDUSTRIES IN NAIROBI CITY COUNTY, KENYA.

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NOVEMBER, 2021

DECLARATION

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

Signature …… Date ……

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Supervisors

This thesis has been submitted with our approval as University Supervisors.

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DEDICATION

This thesis is dedicated to my family for the support, humble time and words of encouragement that kept me moving during the entire period of developing this piece of academic work.

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ABBREVIATIONS AND ACRONYMS

ANC- Ante Natal Clinic

BEMOC- Basic Emergency Maternal Obstetric Care

FANC- Focused Ante Natal Care

HBM- Health Belief Model

HBSA- Hepatitis B Surface Antigen

HCP- Heath Care Provider

HIV/AIDS- Human Immunodeficiency Virus/ Acquired Immunodeficiency Syndrome

ICPD- International Conference on Population and Development

IPT- Intermittent Preventive Treatment

KDHS- Kenya Demographic Health Survey

KUERC- Kenyatta University Ethics Review Committee

MHC- Maternal Health Care

MMR - Maternal Mortality Ratio

MTCT- Mother to Child Transmission

NACOSTI- National Commission for Science, Technology and Innovation

NASCOP- National Aids and STI Control Programme

NCPD-National Council Population Development

NHIF- National Hospital Insurance Fund

PPH- Post-Partum Hemorrhage

SBA- Skilled Birth Attendant

SPSS- Statistical Package for Social Sciences

STIs- Sexually Transmitted Infections

SDG- Sustainable Development Goal

UHC- Universal Health Care

UNFPA- United Nations Population Fund

USAID –United States Agency International Development

WHO- World Health Organization

DEFINITION OF OPERATIONAL TERMS

Antenatal care refers to health care given to a pregnant woman from conception to the onset of labor.

Autonomy is the Capacity to make an informed, un-coerced decision.

BEMOC refers to a set of minimal health care components, which ought to be given to expectant mothers throughout the process of pregnancy and delivery.

Focused or targeted ANC alludes to a base number of four thorough customized antenatal visits, every one of which has explicit things of customer assessment, training and care to guarantee avoidance or early discovery and prompt management of complications. The emphasis is on birth readiness and on people in readiness to handle complications.

Male participation refers to a consultative forum between the wife/partner, husband and the health care provider in matters regarding maternal health and supporting their partners in pregnancy, delivery and postnatal period.

Male partner is considered as a male in an intimate relationship with a woman.

Patriarchy is considered as male dominance.

Skilled birth attendant refers to health care practioners with skills, proficiency and adequate training in manning deliveries and ensuring timely referrals where necessary.

ABSTRACT

Male participation in utilization of antenatal care services is critical in the uptake of maternal health care services and improvement of pregnancy outcomes. Provision of Ante Natal Care is essential for pregnant women as one of the pillars of safe motherhood. Despite high antenatal care attendance of 96%, the proportion of Skilled Birth Attendance was still low at 62% which is far below the 90% target by 2015. In developed countries the maternal deaths stood at 12 per 100 000 live births compared to 362 per 100,000 in Kenya. This study therefore sought to explore male participation in utilization of antenatal care services among their spouses in selected manufacturing industries in Babadogo, Nairobi City County Kenya. The study specifically focused on male awareness on antenatal care components, socio-cultural factors, health facility factors and employer related factors influencing male participation in utilization of antenatal care services. This study adopted a cross-sectional descriptive study design to collect quantitative data. The study respondents were sampled using systematic sampling with a predetermined interval of 2. A total of 266 respondents were recruited for interview with the aid of the human resource registers in selected manufacturing industries. The researcher sought all required approvals from relevant authorities and obtain informed consent from research participants prior to the conduct of the study. Data collected after Logistical and Ethical approval, was cleaned, coded and entered into Microsoft excel then exported into SPSS for analysis. Descriptive data was analyzed using Statistical Package for Social Sciences version 22.0 with the aid of Microsoft Excel program to generate frequency tables, graphs and pie-charts. Inferential statistics were calculated using Chi-Square tests done at 95% confidence interval and a margin of error of 0.05 to establish the association between study variables. The results of this study revealed that 34.0% of male respondents participated in antenatal care services in Nairobi City County despite 56.0% accompanying their wives to antenatal care. Psychosocial support to partners was the main motivation to participating in antenatal care. Most of socio-cultural factors such as antenatal care utilization is a women affair (p=0.041), embarrassed to accompany wife or partner (p=0.036) and it is the mother-in-law's responsibility to accompany women to ANC were significantly associated male partner participation in utilization of antenatal care services. 57.5% of respondents were moderately aware on antenatal care services. The level of awareness (p=0.001) was significantly associated with male partner participation in utilization of antenatal care services. Most of the health system factors such as distance to the nearest health facility (p=0.024), cost of accessing antenatal care (p=0.001), attitude of health providers (p=0.001) and friendly waiting bay were significantly associated with male partner utilization of antenatal care services. Employer factors such as amount of workload (p=0.001), terms of employment (p=0.017) and provision of payments during paternity leaves were significantly associated with male partner participation in utilization of antenatal care services. The study concludes that the rate of male partner participation in utilization of antenatal care services in selected manufacturing industries in Nairobi City County was low. The study further concludes that the respondents were moderately aware on the antenatal care services in Nairobi City County. These results would be useful to policy makers and other stakeholders to scale up early and proper antenatal care, encourage women to give birth under the care of a skilled birth attendant, provide resources to pay for the services and to help identify and seek heath care in cases of post-partum complications.

CHAPTER ONE: INTRODUCTION

1.1 Background to the study

Antenatal care (ANC) alludes to care provided by a skilled health personnel to a pregnant woman to ensure that the mother and baby health condition is stable (Konje *et al.*, 2020). ANC from a qualified health provider is essential to screen pregnancy and decrease the danger of morbidity for mother and baby during pregnancy, delivery and postnatal period. Safety in delivery is based on ANC and skilled birth attendance (WHO, 2015). Recommendation from WHO is that any pregnant woman should receive comprehensive ANC visits.

Women's ability to look for health care or execute exercises gained from health education intercessions is regularly controlled by the family unit head, who is normally the spouse (Yende *et al.*, 2017). Male contribution in maternal health services has been portrayed as a process of social and behavioral change that is required for men to assume progressively dependable responsibility for a woman in her entire period of pregnancy until she delivers.

Male involvement received global attention at the International Conference on Population and Development (ICPD) in Cairo 1994 and at the fourth conference of women in Beijing 1995. Both meetings advocated for active participation by men in maternal health services. The idea of male involvement in maternal wellbeing is currently being upheld as a basic component of World Health Organization (WHO) activity for making pregnancy more secure (Manda-Taylor *et al.*, 2017). An investigation done in India found that most women whose spouses were involved in ANC, their wives

delivered under a skilled health provider in a heath facility compared with women whose partners were not involved (Yadufashije *et al.,* 2017).

In sub-Saharan Africa where there is high burden of maternal and child mortality, there is an increasing number of initiaves and programmatic efforts to come up with strategies that encourage men involvement in safe motherhood (Yargagwa & Leonardi-Bee, 2015). In Malawi and Uganda women who were accompanied by their spouses were given first priority in service provision as a strategy to encourage and support male participation in utilization of ANC services (Atuahene *et al.*, 2017).

The common direct leading causes of maternal deaths include Post-Partum Hemorrhage (PPH), obstructed labor, Hypertensive disorders in pregnancy , abortions and sepsis whereas the indirect causes are HIV/AIDS, anemia, cardiovascular conditions and malaria (Ali *et al.,* 2018). Other associated factors that increase risk of maternal deaths include inaccessibility of health facility, low use of professional birth attendance during pregnancy, delivery, post-natal period and delay in seeking skilled care.

In Kenya there is NHIF Linda mama initiative, which it an expanded programme for free maternity that was launched in 2016, it is an open fund scheme that will guarantee that pregnant women and infants get quality and affordable health care and promote countries progress towards Universal Health Care (UHC), which is right now being piloted in 4 counties namely Kisumu, Nyeri, Machakos and Isiolo.

1.2 Problem statement

Despite high ANC attendance of 96%, the proportion of births attended by skilled health personnel was 62% (KDHS, 2014). WHO revealed maternal mortality ratio in developing

nations in 2015 was 239 for every 100, 000 live births versus 12 for every 100,000 live births in developed nations (WHO, 2015). In Kenya Maternal mortality ratio was 362 for each 100,000 live births (KDHS, 2014). Lessening maternal deaths by 75% through the world by 2015 will take the inclusion of men. Sustainable Development Goal (SDG) target is to reduce Maternal Mortality Rate (MMR) globally to less than 70 per 100 000 births (WHO, 2015).

In most African societies pregnancy, delivery and postnatal services has been erroneously classified as purely feminine issue by the society despite men being key decision makers in matters regarding reproductive health (Craymah *et al.,* 2017). A national program report by NASCOP, on partner involvement in the antenatal clinic per regions were as follows: central 3%, western 5.3%, Nairobi 5.2%, Rift valley 4.6%, Eastern 6%, Coast 3.4%, Nyanza 6.4% and North Eastern 2.5%. Average male participation in Kenya being 5.1% (Aluisio *et al.,* 2016). Therefore this study sought to investigate factors influencing male participation in ANC services among male laborers in selected manufacturing industries in Nairobi city county Kenya.

1.3 Justification

Men heavily influence decisions regarding contraception. Male participation in utilization of Reproductive health is likely to promote early and proper antenatal care, encourage women to deliver under the care of a skilled attendant and provide resources to pay for the services and also help identify and seek heath care in cases of post-partum complications.

Reducing maternal deaths by 75% all through the world, would take the involvement of men (WHO, 2015). Avoiding maternal deaths is possible with existing information and

technology. It includes avoiding unintended pregnancies, checking women during their pregnancies and overseeing medical complications that emerge during pregnancy and delivery. Subsequently, the four most basic interventions are family planning, prenatal care, skilled delivery care and postnatal consideration which must all be expanded and improved, especially in the counties of Kenya that have the highest burden of maternal deaths(National Council for Population and Development, 2015). From observational studies it is quite difficult to get men at home especially during the day that is why the researcher felt that industries would be the most convenient place to interview male.

1.4 Research questions

1. What is the proportion of male participation in utilization of ANC services among their spouses in selected manufacturing industries in Nairobi City County?
2. What are the socio-cultural factors influencing male participation in utilization of ANC services among their spouses in selected manufacturing industries in Nairobi City County?
3. What is the level of awareness on ANC components among males in selected manufacturing industries in Nairobi City County?
4. What are the health facility factors influencing male participation in utilization of ANC services among their spouses in manufacturing industries in Nairobi City County?
5. What are the employer related factors influencing male participation in utilization of ANC services among their spouses in selected manufacturing industries in Nairobi City County?

1.5 Research hypothesis

There is no association between Socio-cultural factors, level of awareness, heath facility factors, employer factors and male participation in utilization of ANC services among their spouses in selected manufacturing industries in Nairobi City County.

1.6 Objectives of the study

1.6.1 Broad Objective

To explore male participation in utilization of Antenatal Care Services Among their spouses in Selected Manufacturing Industries in Nairobi City County Kenya.

1.6.2 Specific Objective

1. To determine proportion of male participating in utilization of ANC services among their spouses in selected manufacturing industries in Nairobi City County.
2. To identify socio-cultural factors influencing male participation in utilization of ANC services among their spouses in selected manufacturing industries in Nairobi City County.
3. To assess the level of awareness on ANC components among male in selected manufacturing industries in Nairobi City County.
4. To identify health facility factors influencing male participation in utilization of ANC services among their spouses in selected manufacturing industries in Nairobi City County.
5. To determine employer factors influencing male participation in utilization of ANC services among their spouses in selected manufacturing industries in Nairobi City County.

1.7 Significance

The information obtained from this study would be utilized by Government, decision makers and primary stakeholders to improve male participation in utilization of ANC services that would consequently enhance skilled birth attendance and lessen maternal and neonatal mortalities and morbidities. The findings of this study would also be valuable to other scholars and researchers as it would complement the existing literature and knowledge base. The study identifies the areas of male partner participation in ANC services which require support and strengthening to improve ANC utilization.

1.8 Limitation and delimitation

1.8.1 Limitation

Anticipated limitations included negative religious views on male partner involvement on antenatal care services among their spouses. Assumptions by other people that due to the sensitivity of the topic and that all men should freely participate in antenatal care service utilization among their spouses. The above limitations were overcame by assurance that the study was purely for academic purposes. They were ensured that the findings were confidential and only used for the intended purpose.

1.8.2 Delimitation

The study was carried out in selected manufacturing industries in Nairobi City County. The research was only bound to the 266 sampled men over 18 years from selected study sites. The study systematically captured views of only those who consented and whose wives/partners had delivered or were pregnant by the time of the study.

1.9 Theoretical Framework

This study was based on Health Belief Model (HBM) which was developed by Rosenstock *et al* (1950) at the U.S Public Health Service. It explains and foresee health-related behaviors, especially with respect to the uptake of health services. It is a standout amongst other known and most generally utilized hypotheses in health behavior research. HBM has six constructs that predict health behavior: risk susceptibility, risk severity, benefits to action, barriers to action, self-efficacy and cues to action. This construct clarify engagement or absence of engagement in health conduct. If men perceive susceptibility of maternal health problems they would support their partners by involving themselves in ANC so as to combat the threats because of the perceived benefits of involvement, thus the socio-cultural, health facility and employer related barriers should be assessed and dealt with as the objective of this study.

1.20 Conceptual Framework

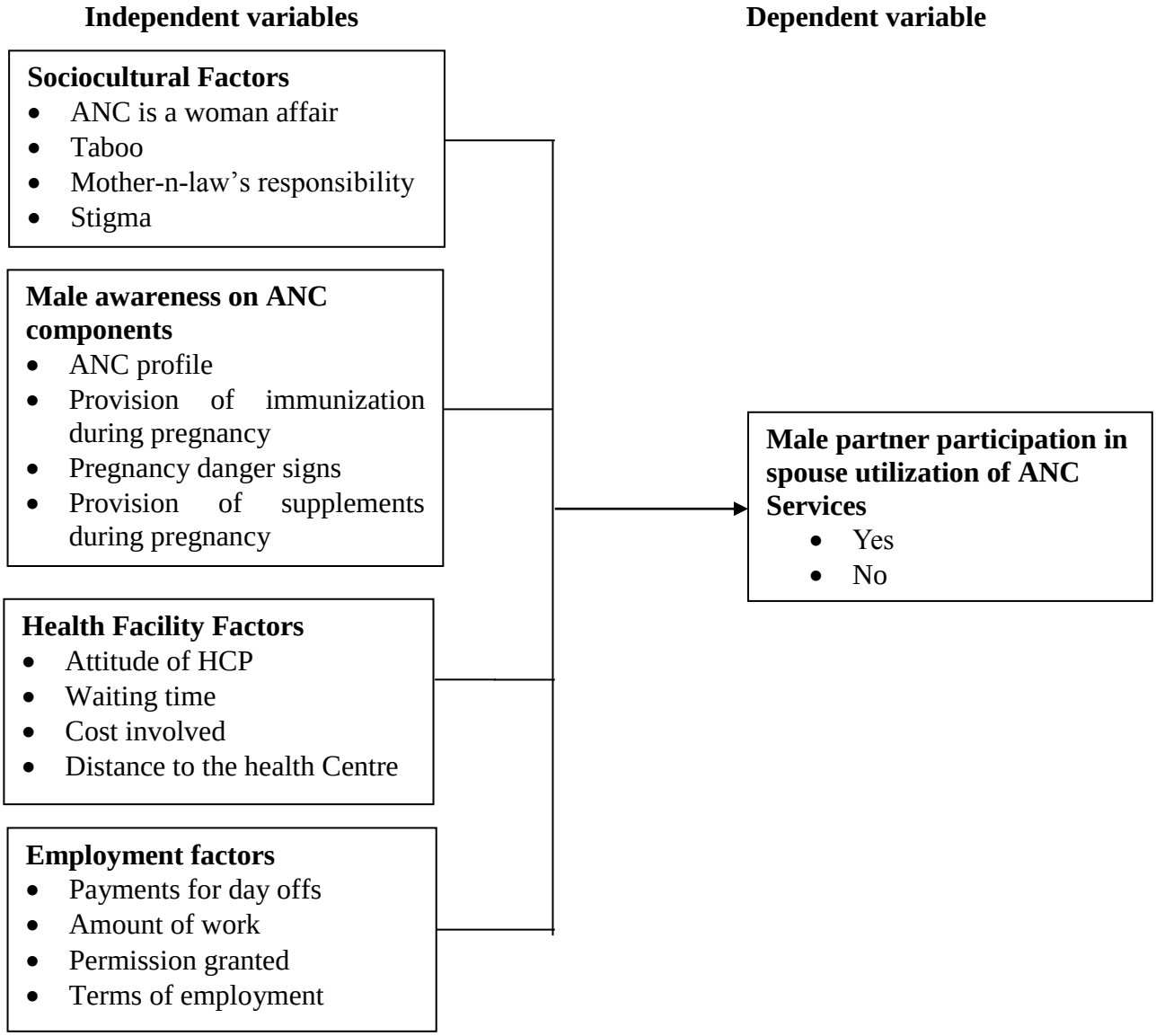

Fig 1.1: The conceptual framework

Source: Adopted and modified from literature review, (2019).

CHAPTER TWO: LITERATURE REVIEW

2.1 Pregnancy outcomes

ANC as one of the pillars of safe motherhood is important in the provision of essential care for a pregnant woman. ANC as a pillar necessitates early identification and management of complications which brings about safe delivery by use of a skilled birth attendant, appropriate post-natal care and planning for future pregnancies (WHO, 2015).

Globally the number of women who died during pregnancy, delivery and postnatal in 2017 was reported by WHO as 295 000 which is unacceptably high .The vast majority of these deaths (94%) occurred in developing countries (WHO, 2017). Kenya maternal mortality rates are unacceptably high at 362 per 100,000 live births (KDHS, 2014). Difficulties during pregnancy, childbirth and the postpartum period present a noteworthy and complex general health issue in low income nations. However, majority of these complications, morbidities and mortalities are avoidable if there is early identification, quick access to health facilities and delivery attendance by skilled personnel in favorable environment.

The leading direct causes of maternal deaths are Haemorrhage, Sepsis, Hypertensive disorders, Complications of abortion and obstructed labor. Whereas the cases that occur indirectly are Malaria, HIV/AIDS and anaemia. These indirect conditions may have been existing or developed during pregnancy but were aggravated by physiological changes that occurred in pregnancy. Basic Emergency Maternal Obstetric Care (BEMOC) is a key element in treatment of obstetric complications, as well as providing appropriate and timely obstetric referrals (Nyandieka *et al.,* 2016).

The referrals are mostly affected by delays which end up contributing to maternal deaths. The first delay is that of making decision to go to a health facility. This delay is contributed by several factors including inability to determine the severity of illness and danger signs, financial difficulties and socio cultural factors for example absence of the decision maker who is normally the husband or mother in-law in some communities (Konje *et al.,* 2020). The second delay is in coming to the required and appropriate health facility due to poor accessibility of roads, lack of appropriate means of transport or even poor condition of roads and sometimes very expensive due to distance. The third delay is at the health facility where adequate care may not be received due to lack of basic tools and equipment, understaffing or the health care provider present is unskilled to provide the appropriate service (Gitonga *et al.,* 2015).

Yadufashije *et al.,* (2017) in his study in rural areas of Africa, noted that delays in accessing skilled care has been a major contribution of maternal mortalities and morbidities. The distance to the health facility was noted to be the main problem. Statistically 1 in 3 women live a distance of more than 5 km to the nearest health facility was worsened by poor conditions of roads and the limited number of vehicles on those roads. Most women walked all the way to access skilled maternal health care sometimes even in labor leading to some women delivering along the way.

2.2 Socio-cultural factors affecting male participation in ANC service utilization

Culture refers to values, beliefs and behaviors central to the coexistence of any society and provide direction to the society on what is acceptable and unacceptable (Shamaki & Buang, 2017). In African Society because of the strong traditional cultural beliefs and fear, male generally do not accompany their partners in seeking reproductive health

services, this attitude affect utilization of services putting in consideration they are regarded as decision makers (Ali *et al.,* 2017). According to a qualitative study on male involvement and accommodation during obstetric emergencies in Ghana, it was noted that majority of the women were accompanied by their mother-in-laws to ANC (Story *et al*., 2016). In Nigeria, mother-in-laws accompanying women to ANC did not affect male participation in antenatal care services (Adeniran *et al.,* 2015).

One of the major challenges influencing maternal health in Africa is the dominance of cultural and traditional practices from various ethnic communities**.** Across the world, decision making towards utilization of maternal health care is determined by socio-cultural factors (Shamaki & Buang, 2017). Several studies done in Asia and Africa indicate that underutilization of ANC is due to lack of women's autonomy in decision making contributing to poor maternal outcomes. Religion in African countries, for example Hausa culture in Nigeria belief in "Gods will", thus a women would not attend ANC but awaits for "Gods will" in her pregnancy. Local beliefs like vulnerability to witchcraft especially in the early trimester has also contributed to non-utilization of ANC Services. In Muslim culture, underutilization of ANC is contributed by lack of privacy in exposing their legs and arms in health facilities during examination which is embarrassing to them (Ali *et al.*, 2017).

Barriers to male involvement in maternal health as per the studies done in Ghana included their perception that pregnancy and child birth is a woman's affair, these results are in consensus with the studies that were reported in Nepal, Kenya, and Malawi (Atuahene *et al.*, 2017). Other similar results highlighted, pointed cultural perception, where men perceived pregnancy and childbirth birth as a woman's responsibility

(Kariuki & Seruwagi, 2016). In Ethiopia and Ghana, childbirth and attendance to ANC was solely left to women as men attended to other family matters affecting male involvement in ANC (Dutamo *et al.,* 2015 and Ganle & Dery, 2015).

In Nepal, the traditional practices for marriage and delivery are still held strongly. After marriage the daughter in law is expected to reside in the husband's home with the mother in-law, so as to be given guidance and support in maternal health by her mother in-law, because she is the main decision maker. It was also believed that members of the same sex should be the ones assisting deliveries, unlike in hospital set ups where we also have male nurses. Thus the mother in-law strong influence could be positive by encouraging their daughter in laws to attend ANC or negative by encouraging home delivery with no ANC (Lewis *et al,.* 2015).

Socio-cultural challenges from a qualitative study in Pacific that affected male involvement in RH included shyness by men, stigma, fear of gossip and taboos that pregnancy is a woman affair thus affecting male participation in maternal health (Davis *et al,.* 2016). In a study done in Kinshasa in Democratic Republic of Congo, it was revealed that male felt embarrassed being in a room full of women where some speak without holding (Gill *et al.,* 2017). The more one feels embarrassed the more one is unlikely to participate in ANC according to a study done on factors influencing male involvement in ANC in Great Accra Region in Ghana (Dziekpor, 2018). In rural Mozambique it was a taboo for men to accompany their wives/partners to ANC visits (Audet *et al.,* 2016). In Kwale and Kilifi in Kenya and Papua in New Guinea, cultural beliefs and taboos affected male involvement in safe motherhood (Ouma *et al.,* 2019 and Davis *et al.,* 2018).

Culture has been a key aspect in sub-Saharan Africa, men who were seen accompanying their wives to the clinic were termed as inferior, at the same time men felt embarrassed to be found in female places, whereas other women do not like to be seen with their partners in ANC clinics. A study conducted in Kenya showed some males trusted traditional birth attendants more than hospital set ups (Yargagwa & Leonardi-Bee, 2015). In a study done in Zimbabwe on male participation in ANC services, it was noted that it is not fully acceptable by some male because participating in antenatal services is seen as a weakness (Tokwe, 2018). In a study done in Bumula sub-county in Western Kenya, it was revealed that inferiority if male accompanies spouse to PNC and ANC negatively influenced male participation (Nafula, 2018).

2.3 Male Partners contribution in maternal health

Globally there has been a remarkable good results in maternal health services due to male participation. The prevalence of contraceptive use and interventions to prevent maternal to child transmission through heath education and couple counselling uptake has increased (Aborigo *et al.,* 2018). Men are key decision makers in women ability to access health care, unfortunately more often than not men are uninformed on promotion and prevention of women reproductive health needs and program has contributed a serious negative impact on women heath. Men's decision on maternal health also helps in determining where their spouses deliver. According to a study done in Tandahimba district in Tanzania, men who participated in ANC influenced their wives/partners to deliver in a hospital set up (Tarcred *et al.,* 2016). In another study done in India on male involvement and utilization of maternal health services, it was noted that male involvement led to health facility deliveries (Sinha, 2016).

During ANC, health education is offered to clients alongside health services provided. These are meant to improve maternal health, however ability to utilize these interventions is usually determined by the partner. ANC comprehensive visits recommended by WHO start in the first trimester and extending till delivery. Strategies to improve ANC interventions is by supporting male participation which include male attendance at ANC and their attitude towards maternal health because they are key decision makers (Forbes *et al.,* 2018).

Male involvement early in pregnancy is paramount, because these the appropriate time to educate them on perinatal healthcare components and to support them in offering effective support to their partners in pregnancy, birth preparation and pupperium period. During these time men can get a chance for their reproductive health and prepare them for parenting. Decision making in relation to seeking medical care in pregnancy and delivery is dependent on the husbands who allocate resources and determine the place of birth and in their absensure, women settled on these choices autonomously (Lewis *et al.,* 2015). According to a study done by Rumaseu *et al* (2018) on his study on factors affecting husband participation in ANC attendance and delivery, it was reported that husbands escorted their wives/partners to the place of delivery (Rumaseu *et al.,* 2018). In another on companionship during facility-based childbirth among recently delivered women and providers in Kenya, it was reported that majority were accompanied by sisters and sister-in-laws (Afulani *et al.,* 2018). In Ghana, majority of pregnant women were accompanied by their mother-in-laws to the place of delivery (Story *et al.,* 2016).

Utilization of maternal services are determined by husband's approval and disapproval has been a major barrier to skilled maternal delivery. Low utilization of antenatal care

and delivery in Pakistan was linked to high decision making power by men (Atuahene *et al.,* 2017). This has prompted for strategies to improve male inclusion in safe motherhood. In Malawi and Uganda strategies has been set to involve men in maternal health whereby fast service are provided during ANC visit to women who have been accompanied by their husbands. Pregnant women who were accompanied by their partners for ANC were significantly associated with utilization of skilled attendant at birth and were more likely to receive postnatal care (Yargawa & Leonardi-Bee, 2015).

In study on perception of male involvement in pregnancy and childbirth in Masasi District in Tanzania, most men accompanied their partners for the first ANC visits especially to test for HIV/AIDS (Maluka & Peneza, 2018). According to a study done on involvement of male in ANC, birth preparedness and complication readiness and associated factors in Ambo Town in Ethiopia where it was noted that it's unthinkable to find men accompanying their wives/partners to ANC (Demissie *et al.*, 2016).

A study done by Kariuki and Seruwagi, (2016) discovered male contribution in ANC to be at 6% which is quite low and almost similar to research done in mbale Uganda which found male involvement in ANC at 5%. Contrary results reported by women in kabale indicated 42.9% of women had been accompanied by their partners to ANC, similarly a high proportion was also reported in northern Uganda whereby 65.4% of men made at least one visit to ANC. One study done in India found that there was more likelihood of skilled delivery to a woman whose spouse was associated with her pregnancy unlike a woman whose partner was not involved in her pregnancy (Atuahene *et al.,* 2017). In a Zambian study, it was noted that male partner participation in ANC would deprive wives their privacy needed during physical examination (Muloongo *et al.*, 2019).

Analysis of Ante Natal mothers whose spouses accompanied them during ANC attendance showed that (40.0%) delivered by a skilled provider whereas those who were not accompanied by their husbands (30.3%) delivered by skilled provider at a health facility (Kashitala *et al.,* 2015). Moreover 93.6% of males who went with their female partners for ANC services were tested for HIV. In Masasi District in Tanzania, men were generally involved in ANC so as to get tested for HIV/AIDS (Maluka & Peneza, 2018). In Rwanda pregnant women were not received at the facilities without their partners/husbands (Pafs *et al.,* 2015). Postnatal visit was high among those who were accompanied by their husbands at 48.2% compared to postnatal visit of 37.1% by those who came without the company of the spouse to ANC. In rural Uganda on a study done on birth preparedness, it was revealed that 68.6% of maternal deliveries in a hospital set up by a skilled provider were from women who had spouse companionship during ANC visit (Kashitala *et al.,* 2015).

In western Kenya, reproductive health was seen by men as a female role and the responsibility of a mother in law or co wife rather than them. They viewed themselves as head of the family thus their interest was on economic activities so as to be able to provide for the family. They pretended to be too busy to avoid accompanying the wife to the clinic due to fear of stigmatization however others reported they wound accompany their spouses if only they are given first priority, other barrier was the unfriendly attitude of the HCP and use of abusive language (Konje *et al.,* 2020). In another study done on male partners' view of involvement in maternal healthcare services at Makhado Municipality Clinics, Limpopo in South Africa, it was noted that working far from home was the main reason for men not participating in ANC (Nesane *et al.,* 2016). In rural

Mozambique, community beliefs hindered men in male partner participating in ANC (Audet *et al.,* 2016).

2.4 Male Awareness on Ante Natal Care Components

Knowledge regarding the services provided in ANC is very vital for every man. Among the services provided during ANC visit include confirmation that indeed there is a pregnancy and detection of any complication through examination and investigations. Most men appreciated the fact that health care facility is the best place for reproductive health as it was termed hygienic and safe (Craymah *et al.*, 2017). Men lack appropriate information on the timing of the first ANC visit nor the minimum required number of ANC visits (Vermeulen *et al.,* 2016). In Malawi, the government designed incentives to offer to couples who attended ANC clinics due to low male participation (Choko *et al.*, 2019).

During ANC visits, preventive management includes: administration of tetanus toxoid immunization, intermittent preventive treatment (IPT) against malaria in malaria endemic zones and issuance of insecticide treated mosquito nets (Kariuki & Seruwagi, 2016). In Rwanda limited male participation in antenatal care has resulted to men being unaware on the types of vaccines and supplements that are given to pregnant women (Pafs, 2015). On whether pregnant women should always use Insecticide Treated Nets, the study revealed that majority of the respondents were aware on the same. In Ghana, men embraced the importance of using ITNs among pregnant women as a precautionary measure to curb malaria transmission (Nyavor *et al.*, 2017).

Screening for infectious diseases and management including HIV, Hepatitis B surface antigen (HBSA), Syphilis and other STIs. In Tanzania, men recognized the importance of

HIV testing during pregnancy so as to prevent mother to child transmission during delivery and taking care of the child (Maluka & Peneza, 2018). The couple counselling and testing done at ANC is important point of intervention for preventing MTCT. Screening and management of obstetric complications including pre-eclampsia and anaemia (Falade & Adebayo, 2020).

In ANC visits, health care providers do awareness on birth preparedness using an individual birth plan and how to identify life threatening signs in maternal health. According to a study done in rural Tanzania, men were able to mention at least one danger sign of pregnancy (August *et al.,* 2015). Male participation in ANC ensures people are educated and become more aware on the danger signs of pregnancy as shown by a systematic review from developing countries (Aguiar & Jennings, 2015). Individual birth plan consists of identification of place of birth, birth companion, SBA, decision maker and a potential blood donor just in case of complications like hemorrhage and saving some amount of money for transport and other needs. ANC visits also address healthy behaviors like breastfeeding and family planning (Kiptoo & Kipmerewo, 2017).

Research done in south Asian context indicated that men are frustrated because they lack adequate information regarding danger signs and complications in pregnancy and delivery and thus has hindered their involvement in maternal health outcomes (Lewis *et al.,* 2015). A study done in Uganda on perceived benefits of male involvement in ANC found that there was increased skilled attendance due to male knowledge on ANC services (Aborigo *et al.,* 2018). In Kenya safe motherhood education is given to the mother and her partner if he accompanies her to the ANC however there is a consensus

that men with adequate information and awareness of maternal risks in pregnancy provide more support to saves their partner's life and that of the baby.

The level of male awareness on the components of ANC has been generally low especially in developing countries. This has been due to low male participation in utilization of ANC among their spouses. According to a study done by Kabanga *et al* (2019), he argued that the level of awareness significantly influenced male participation in ANC. This has led to poor maternal outcomes which could be prevented if men were fully involved. According to a study done on factors influencing male involvement in antenatal healthcare services in Aber Sub-County in Oyam District of Uganda, men had a low level of awareness on ANC (Lamunu, 2016).

2.5 Health facility factors influencing male participation in spouse ANC utilization

During a routine ANC visit, routine monitoring is done by heath care practitioners to treat and prevent potential health Problems that might occur during pregnancy and instill healthy life styles (Craymah *et al.*, 2017). Men have a role of accompanying their partners so as to safeguard pregnancy and child birth by supporting their partners in identification of any complications, seeking medical attention and allocating resources for the same. Incentives should be put in place such as ensuring couples who attend ANC are given priority of been served first (Muloongo *et al.*, 2019). In a study done in Uganda on men's response to Obulamu campaign messages about male involvement in maternal health, it was noted that giving couples priority for ANC did not improve the situation (Kayongo & Miller, 2019).

A number of health system factors affect men's participation in ANC. For instance, according to studies done in Coastal region of Kenya and India, the distance to the

nearest health facility together with unevenly distributed facilities and poor road network negatively affected male participation in maternal health service utilization (Nyandieka *et al.,* 2016 and Sinha, 2016). In Anomabo Central region in Ghana the main reason for male partner participation in antenatal care was that health facilities were available hence accessibility was not a challenge (Craymah *et al.,* 2017).

A review of 61.2% of spouses who did not participate in routine ANC attendance stated that they were unhappy with the way they were handled in ANC clinics, so when they shared their experiences with other men who had never visited ANC it discouraged them too. Other reasons that enhanced hindrance of male ANC attendance included lack of privacy, congestion in ANC clinics and mandatory HIV testing (Kariuki & Seruwagi, 2016). Despite awareness of the benefits of their participation, they labelled health workers as having a negative attitude and generally ANC services were mentioned as unfriendly (Aborigo *et al.,* 2018). A study done in Turkey showed that health insurance covers had a positive impact on utilization of ANC Services however rudeness and unfriendly attitude of nurses were mentioned as obstacles to utilization of ANC services to some hospitals.

General cost incurred in accessing ANC services included cost of travelling to the health facility especially in situation where the health facility is a bit far, service fee in some health facilities and the time spend before accessing services discourage a couple from utilizing Skilled ANC services. In some situations, the quality of services received is poor due to understaffing of skilled personnel (Ali *et al.,* 2018). A qualitative study done in Tanzania indicated that it is not only about the cost involved but the quality of services offered that determined whether to utilize health facility services. However, in Uganda

the cost of antenatal care influenced male partner involvement in ANC (Kariuki & Seruwagi, 2016). Despite some government health centres located within the community and free of charge, some women preferred to utilize private health facilities others home deliveries. They alleged that the quality of services was so poor to an extend that the relatives were asked to collect water for cleaning the labour ward (Konje *et al.,* 2020). In Western Kenya, it was reported that high cost of transportation incurred hindered men from participating in antenatal care (Ongolly & Bukachi, 2019). Men suffer opportunity cost of lost wages whenever they escort their partners to seek maternal health services (Yende *et al.,* 2017).

Disrespectful handling of their wives by skilled personnel demotivated men from accompanying their partners anymore, while others overcharge beyond the normal fee so as to bridge their financial challenges. The attitude of healthcare providers to men who accompany their spouses play a key role in male participation in antenatal care. When men perceive attitude of care providers to be positive they are more likely to influence their partners in participating in maternal health services even if they are not free as shown by study results from Ghana (Yidana *et al.,* 2018). According to a qualitative study on policymaker, health providers and community perspective on male partner involvement during pregnancy in Southern Mozambique, it was concluded that the attitude of healthcare providers was perceived to be passive (Galle *et al.,* 2019).

When waiting space is not convenient to accommodate pregnant women and their husbands at the same time and the long waiting time, ending up wasting a whole day (Yargagwa & Leonardi-Bee, 2015). According to a study done on socio-cultural and economic barriers and facilitators influencing men involvement in ANC showed that

antenatal care attendees waited their partners in a waiting bay (Sakala *et al.*, 2020). In another study done in Suba Sub-County in Kenya on accessing men's knowledge and perceptions of male involvement in maternal and child health services, men reported that they could sit in their cars for prolonged hours waiting for their spouses (Odhiambo, 2018).

2.6 Employer related factors influencing male participation in ANC utilization

Involving men in Ante Natal Care is due to strong influences by men in all spheres of life that bring about healthy maternal and child health welfare. Employment and associated benefits is defined in terms of being permanent, contract or casual basis. According to a systematic review in Sub-Saharan Africa, it was reported that sporadic jobs and casual labors influence negatively male participation in ANC (Manjate *et al.,* 2015). In another study done on male involvement in PMTCT and associated factors in North-West Ethiopia, it was noted that those who were in permanent employment terms were more likely to attend ANC (Amano & Musa, 2016). Some employees on casual basis explained that their terms of employment do not cater for ANC leave nor paternity leave unless given unpaid days off thus affecting their livelihood (Kimotho, 2016).

A study done in Uganda indicated that some men worked very far from their homes thus facing a lot of challenges financially in attending ANC (Kariuki & Seruwagi, 2016). Also job demands at the workplace may be a hindrance to men accompanying their spouses to ANC. According to a study done in Central Tanzania on factors influencing men involvement in ANC, it was concluded that time spent in accompanying spouses to ANC services had more implications to male involvement in ANC among employed men (Gibore *et al.,* 2019). However, in Southern Mozambique, most men had spare time to

spend on activities outside work and since most employers accept a temporary absence from work and could use such to escort their wives to ANC (Galle *et al.,* 2019).

Employees who are not given leave to escort partners to ANC nor paternity leaves when their partners deliver are more likely not to be involved in utilization of ANC among their spouses. Others are given unpaid days off hence this affects their livelihoods (Kimotho, 2016). In a study done in Rwanda, results revealed that where men were not given day offs to attend the mandatory first ANC visit, women could hire other men to pretend to be their husbands so that they can be served in the respective facilities (Pafs *et al.,* 2015). According to a qualitative study done in Lagos in Nigeria, it was noted that job demands with no day off to attend ANC affected male partner participation maternal health services (Adejoh *et al.,* 2018). According to Afifah *et al* (2019), male workers were not given paid paternity leave when their partners were about to deliver. According to a study done in Indonesia, one of the challenges of male involvement in antenatal care was lack of paid paternity leave due to the nature of employment (Xue *et al.,* 2018).

2.7 Synopsis of literature review

Pregnancy is a risky journey and one of the strongholds that ensures safe maternal delivery is ANC, for it ensures provision of essential care for a pregnant woman. ANC enhances early identification and management of complications which brings about safe delivery by use of a skilled birth attendant, appropriate post-natal care and planning for future pregnancies. These can only be achieved through male involvement because they are known to be decision makers in relation to seeking medical care in pregnancy and delivery. Husbands facilitate accessibility of care through resources allocation and determine the place of birth.

Occasionally Maternal and neonatal deaths occur as a result of delays in accessing skilled deliveries because of time wasted by women while waiting for their spouses to make decisions. However, in most African societies; pregnancy, delivery and postnatal services has been erroneously classified as purely feminine issue by the society this has led to exclusion of men from MHC. A study done by NASCOP indicated average male participation in ANC in Kenya as 5.1%. The objective of this research is to determine socio-cultural, Health facility and employment factors influencing male participation in utilization of ANC services and assess their level of knowledge on ANC services provided. The results obtained from this research would be utilized by policy makers to make and implement policies that enhance male involvement in utilization of ANC services that will enhance maternal health outcomes.

CHAPTER THREE: MATERIALS AND METHODS

3.1 Research Design

The research adopted a cross- sectional descriptive study design in collecting data from the sampled research respondents in the selected manufacturing industries (Kothari, 2008). It ensured complete description of the phenomenon thus reducing chances of bias in data collection. The purpose was to examine male participation in utilization of ANC services among their spouses in selected manufacturing industries in Nairobi city county Kenya.

3.2 Study Variables

3.2.1 Independent study variables

The independent variables of this study included:

i. Sociocultural factors included stigma, taboo, mother-in-law's responsibility and feeling of embarrassment to accompany spouse to ANC.

ii. Health facility factors which included distance to the nearest facility, health care provider's attitude, cost of accessing ANC services and friendliness of the waiting bay.

iii. Employer factors which included payments for day offs, permission granted and amount of work.

iv. Male awareness on ANC components which included ANC Profile, immunizations and supplements during pregnancy. This was measured using a set of seven questions which the respondents were supposed to pick the most appropriate answer from the options provided. The most appropriate option was given a score of one (1) while a wrong option given a score of zero (0). The seven statements were had a maximum

score of 7 and a minimum of 0. The scores were further grouped into three levels; low awareness with scores ranging from 0-2, moderate awareness with scores ranging from 3-5 and high awareness with scores ranging from 6-7.

3.2.2 Dependent variable

The dependent variable was male participation in spouse utilization of ANC services through active consultative forum between spouse/wife, husband and the health care provider in a health facility among men working in selected manufacturing industries in Nairobi city county Kenya.

3.3 Location of Study

The study was conducted in selected Manufacturing industries in Babadogo, Ruaraka subcounty Nairobi City County. The industries are located in underserved community with low income, overpopulated and lack basic infrastructure such as feeder roads, toilets, drains and poor housing. Ruaraka is made up of 5 wards namely: Babadogo, Utalii, Mathare North, Lucky summer and Korogocho. There are a number of industries located in babadogo including Kenafric, Pepsi, UniFresh, Exotics Kenya, EPZ, Propack Kenya, Dawa Limited, East Africa Foundry Works, Regal Pharmaceuticals, Murphy Chemicals, Sai Raj Limited and Chandaria. From observation the researcher felt that manufacturing industries is the right place to conduct the study because most men are not in the house during the day.

3.4 Study Population

The study population comprised of males above 18 years working in selected manufacturing industries in babadogo. This was based on the need to capture their

experiences that they got from participating in spouse utilization of ANC services thus making them more informative for the study. There are about 648 employees in the selected manufacturing industries in Babadogo, Ruaraka sub-county in Nairobi City County Kenya. The study specifically focused males whose partners had delivered or were pregnant during the period of the study.

3.4.1 Inclusion criteria

The study included men working in the selected manufacturing industries whose partners had ever delivered or were pregnant and had started ANC whether in formal or informal union and who consented to participate in the study.

3.4.2 Exclusion criteria

The study excluded men who were sick and who were on leave thus unable to participate.

3.5 Sampling Techniques

Nairobi City County was purposively selected since it has people from diverse socio-cultural backgrounds. Nairobi City County has seventeen sub-counties. Ruaraka sub-county was purposively selected since it is one of the sub-counties in Nairobi City County with the highest number of manufacturing industries. Ruaraka is made up of 5 wards namely: Babadogo, Utalii, Mathare North, Lucky summer and Korogocho. Babadogo ward was purposively selected since it has the highest number of manufacturing industries in the region.

There are a number of industries located in babadogo including Kenafric, Pepsi, UniFresh, Exotics Kenya, EPZ, Propack Kenya, Dawa Limited, East Africa Foundry Works, Premier Foods, Regal Pharmaceuticals, Sai Raj Limited and Chandaria. Four

manufacturing industries were selected using simple random sampling which were Dawa Limited, Premier Foods, Chandaria and East Africa Foundry Works. Manufacturing industries in Babadogo were selected using a simple random sampling. A total of 266 respondents were selected using systematic sampling. The first respondent was simple randomly selected using folded pieces of paper. The subjects were chosen systematically with a predetermined interval of 2 obtained through dividing the total number of employees by the required sample size. The respondents selected were proportional to the number of employees in each selected manufacturing industry.

3.6 Sample Size Determination

The sample size was calculated according to Fisher *et al.,* (1998).

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

Where: n = desired sample size (if target population is greater than 10,000)

z = standard normal deviate at required confidence level. (1.96) corresponds to 95% confidence interval.

p = Assumed proportion in the target population estimated to have the characteristic being measured. (0.5).

q = 1- p (0.5)

d = the level of statistical significance (0.05)

$$n = \frac{1.96^2 \times (0.5)(0.5)}{0.05^2} = 384$$

Since sample size was less than 10, 000, the final samples estimate (nf) was calculated as follows:

$$nf = \frac{\text{n}}{1+\text{n/N}}$$

Where: nf = the desired sample size (when the population is less than 10,000)

n = the desired sample size (when the population is more than 10,000)

N = estimate of the population size

$nf = \frac{384}{1+\left(\frac{384}{648}\right)}$ =242+24 (10% of respondents was added to cater for non-responses

= 266

Table 3.1: Proportion of respondents selected from each industry

Name Of Industry	Total Population	Total Sample Size
Dawa Limited	120	49
Chandaria	218	90
Premier Foods	180	74
East Africa Foundry Works	130	53
Totals	**648**	**266**

3.7 Data collection instruments

The study used self-administered questionnaires with close and open-ended questions for collection of quantitative data. The survey questionnaire was administered to systematically selected participants, in the various departments with the help of human resource manager. The questions covered all the key aspects under study. The questionnaires were administered in English and Kiswahili versions depending on respondents' level of understanding. They were meant to assess male participation in utilization of ANC services among their spouses and to determine the socio-cultural, employer and health facility factors influencing male participation in utilization of ANC services among their spouses in selected manufacturing industries in Nairobi city county Kenya.

3.8 Pretesting

Pretesting involves testing data collection instruments in an environment with almost similar characteristics to the research population so as to identify problems with clarity of wordings used and content. The research instruments were pretested at Kenafric which was a non-selected industry in the same locality with 10% of the sample size (26 males). Results from the pretest were used to make adjustment to the final data collection tool.

3.8.1 Validity

Validity is the test of degree of accuracy of a test result. Validity of instruments used in survey was ensured by doing pre-test of the designed tool to study subjects who met the inclusion criteria. Validity was ensured through expert review of the study tools with the counterchecking of the survey questionnaires by supervisors. The study also adopted sampling methods that resulted in a randomized and a representative sample.

3.8.2 Reliability

Reliability is the assurance of generality, repeatability and consistency of study result. This was ensured by proper selection, training and close supervision of research assistants and Monitoring of well-designed questioners for proper filling and completeness.

3.11 Data Collection Techniques

Quantitative data was collected using self-administered close and open ended questionnaires by trained research assistants. The research assistants were comprehensively trained and recruited a week to the actual data collection. They were monitored, guided and supervised by the researcher. All collected questionnaires were

kept in locked cabinets throughout the study period and accessed by the researcher only to ensure confidentiality and avoid data loss.

3.12 Data Analysis and presentation

Quantitative data collected was cleaned, coded and entered into Microsoft excel then exported into SPSS for analysis to generate descriptive and inferential statistics. Descriptive data was presented by bar graphs, pie charts and percentages. Inferential statistics were done using Chi-Square tests calculated at 95% confidence interval with p-values less than 0.05 considered significant to determine the association between the independent and dependent variables.

3.13 Logistical and Ethical Considerations

Proposal approval and authorization was obtained from Kenyatta University Graduate School and Ethical clearance was sought from Kenyatta University Ethics and Review committee (KU-ERC). Research permit was obtained from National Commission for Science, Technology and Innovation (NACOSTI). Permission to conduct the study was obtained from Regional Director of Education Nairobi City County, Sub-county Director and from Directors of the sampled factories. Informed consent was obtained from clients who were willing to participate after clear and full explanation was given to them on the whole research process, benefits, risks and rights of participants. Assurance of anonymity and confidentiality was maintained in the whole process.

CHAPTER FOUR: RESULTS

4.1 Introduction

The study administered 266 questionnaires to male respondents in selected manufacturing industries in Nairobi City County, Kenya. Duly filled and returned questionnaires were taken into account and considered for analysis. After data checking and cleaning, 259 questionnaires were deemed fit for analysis representing a response rate of 97.37%. The response rate surpassed the minimum sample size that was targeted for this study.

4.2 Socio-demographic characteristics of the respondents

The results on socio-demographic characteristics revealed that less than half 108 (41.7%) of the respondents were aged between 30-39 years followed by 84 (32.4%) who were aged between 20-29 years. More than half 144 (55.6%) of the respondents had secondary level of education followed by 68 (26.3%) who reported tertiary as their highest level of education attained. Concerning religion results showed that majority 212 (81.9%) of the respondents were Christians while the rest 47 (18.1%) were Muslims.

Results on level of monthly income by the respondents revealed that more than third 97 (37.4%) earned between Kshs 20,000-30,000 followed by 83 (32.1%) of them who earned below Kshs 20,000. Regarding the number of children, results showed that 99 (38.2%) of the respondents had one child followed by 78 (30.1%) had two children. Most 203 (78.4%) of the respondents revealed they stayed with their partners while the rest 56 (21.6%) were not staying with their partners. The results were as shown in the table 4.1 below:

Table 4.1: Distribution of socio-demographic characteristics among respondents (n=259)

Variable	Respondent response	Frequency (N)	Percentage (%)
Age in years	≤ 19	19	7.3
	20-29	84	32.4
	30-39	108	41.7
	40-49	35	13.5
	≥ 50	13	5.0
Highest level of education attained	No formal education	11	4.2
	Primary	36	13.9
	Secondary	144	55.6
	Tertiary	68	26.3
Religion	Christian	212	81.9
	Muslim	47	18.1
Monthly income (Kshs)	<20,000	83	32.0
	20,000-30,000	97	37.4
	30,001-40,000	58	22.4
	> 40,000	21	8.1
Number of children	None/pregnant	36	13.9
	1	99	38.2
	2	78	30.1
	3	26	10.0
	≥3	20	7.8
Staying with partner	Yes	203	78.4
	No	56	21.6

4.2.1 Influence of socio-demographic factors on male participation in ANC services

The study sought to determine the influence of socio-demographic factors on male participation in antenatal care services. Results revealed that slightly below half 77 (45.0%) of the respondents who had not participated in ANC services were aged between 30-39 years. There was a significant statistical association between age of the respondents and male participation in ANC services (p=0.021). Majority 62 (70.5%) of the respondents who participated in ANC services had attained secondary level of education. There was a significant statistical association between the highest level of education attained and male participation in ANC services (p=0.001).

Concerning Respondents' religion results showed most 83 (94.3%) of the respondents who were Christians had participated in ANC services. There was a statistical association between respondents' religion and male participation in ANC services (p=0.001). Regarding the respondents' monthly income results showed that slightly more than half 47 (53.4%) of those who earned less than Kshs 20,000 had participated in ANC services. There was a significant statistical association between monthly income earned and male participation in ANC services (p=0.011). Further results revealed that 32 (36.4%) of those respondents who had one child had participated in ANC services. There was a statistical association between number of children and participation in ANC services among the respondents (p=0.002). Majority 77 (87.5%) of the respondents who stayed with their partners had participated in ANC services. However, there was no significant statistical association between staying with partners and male participation in ANC services (p=0.11). The results were as presented in the table 4.2 below:

Table 4.2: Association between socio-demographic factors and male participation in Anti-Natal Care among respondents (n=259)

Independent variable	Respondent response	Dependent variable (Male participation in ANC)		Statistical significance
		Yes (N=88)	No (N=171)	
Age in years	≤19	6(6.8%)	13(7.6%)	χ^2=12.049 df=4 p=0.021
	20-29	35(39.8%)	49(28.7%)	
	30-39	31(35.2%)	77(45.0%)	
	40-49	11(12.5%)	24(14.0%)	
	≥ 50	5(5.7%)	8(4.7%)	
Highest level of education attained	No formal education	5(5.7%)	6(3.5%)	χ^2=17.382 df=3 p=0.001
	Primary	11(12.5%)	25(14.6%)	
	Secondary	62(70.5%)	82(48.0%)	
	Tertiary	10(11.3%)	58(33.9%)	
Religion	Christian	83(94.3%)	129(75.4%)	χ^2=13.942 df=1 p=0.001
	Muslim	5(5.7%)	42(24.6%)	
Monthly income (Kshs)	< 20,000	47(53.4%)	36(21.0%)	χ^2=28.721 df=3 p=0.011
	20,000-30,000	20(22.7%)	77(45.0%)	
	30,001-40,000	16(18.2%)	42(24.6%)	
	> 40,000	5(5.7%)	16(9.4%)	
Number of children	None/pregnant	15(17.0%)	21(12.3%)	χ^2=14.718 df=3 p=0.002
	1	32(36.5%)	67(39.2%)	
	2	15(17.0%)	63(36.8%)	
	3	11(12.5%)	15(8.8%)	
	≥ 3	15(17.0%)	5(2.9%)	
Staying with partner	Yes	77(87.5%)	126(73.7%)	χ^2=6.544 df=1 p=0.11
	No	11(12.5%)	45(26.3%)	

4.3 Male participation in Ante-Natal Care

4.3.1 Accompanied partner to ANC

The study sought to establish whether the respondents had accompanied his partner to ANC. The results showed that more than half 145 (56.0%) of the respondents had accompanied their partners to ANC clinics while the rest 114 (44.0%) had not accompanied their partners. The results were as shown in the figure 4.1 below:

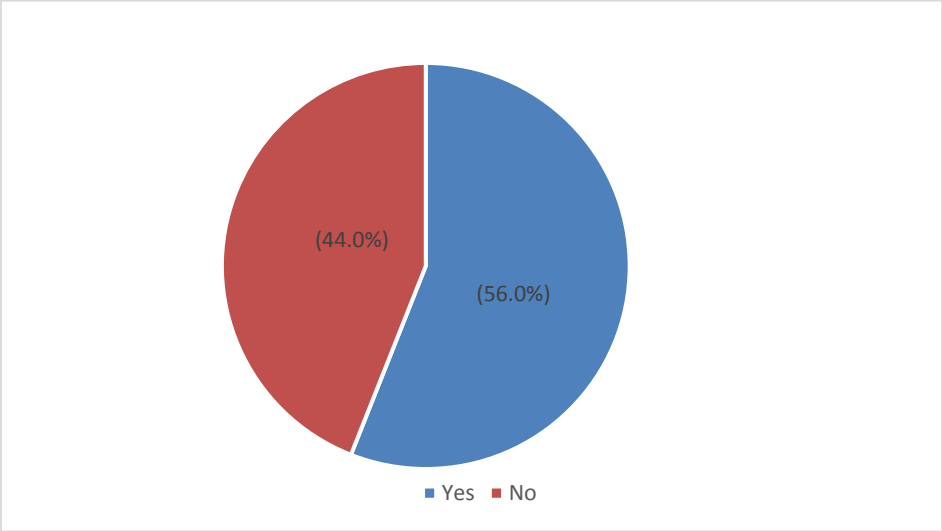

Fig 4.1: Accompanied partner to ANC among respondents

4.3.2 Male participation in ANC

The researcher sought to find out the proportion of men who had ever participated in ANC services. Results revealed that slightly more than a third 88 (34.0%) of the respondents had participated in ANC services. The results were as shown in the figure 4.2 below:

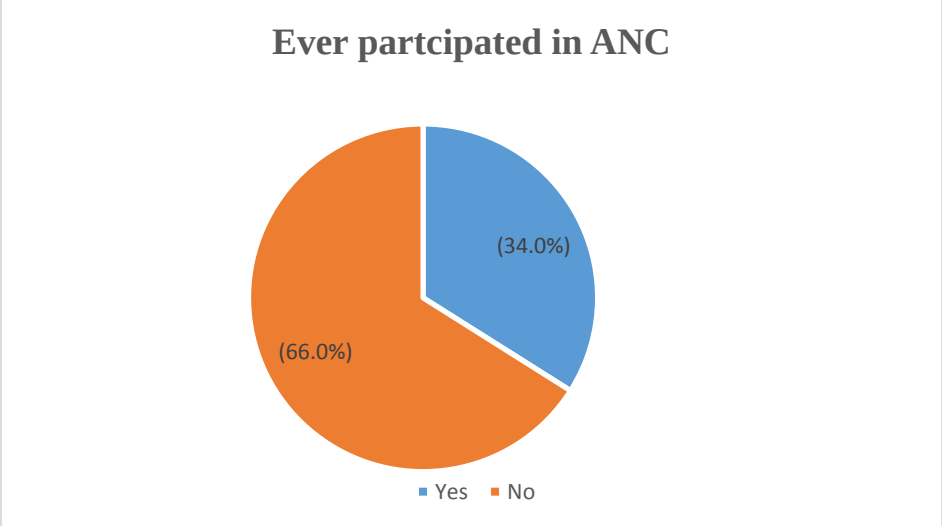

Fig 4.2: Male participation in ANC among respondents

4.3.3 Motivation to participate in ANC

The results revealed that 36 (40.9%) of those men who had participated in ANC services were motivated by the need to offer their partners psychosocial support followed by 26 (29.5%) who had been requested by their partners. The results were as shown in the figure 4.3 below:

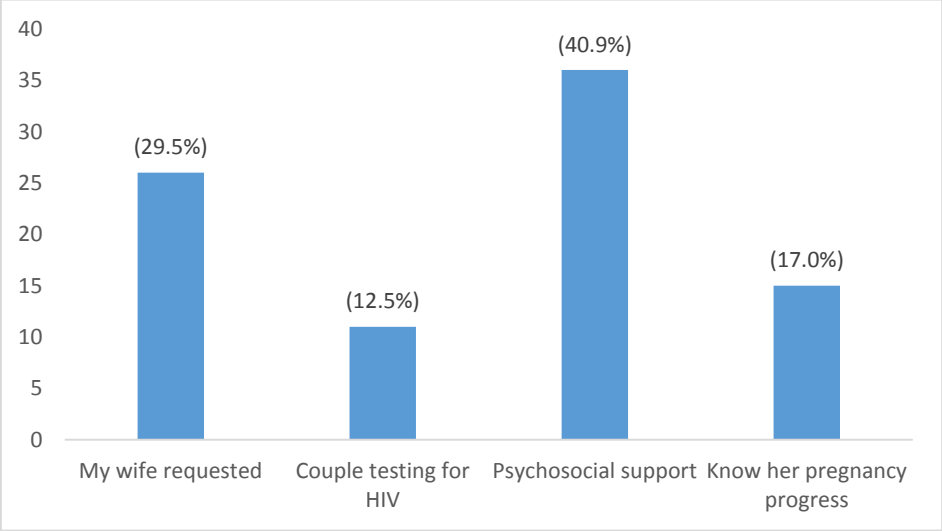

Fig 4.3: Motivation to participate in ANC among respondents

4.3.4 Recommendation to friends to participate in ANC

On whether the respondent who had participated in ANC services would recommend their friends to participate; results showed that majority 67 (76.1%) of them revealed that they could indeed recommend it to their friends while the rest 21 (23.9%) of them could not. The results were as shown in the figure 4.4 below:

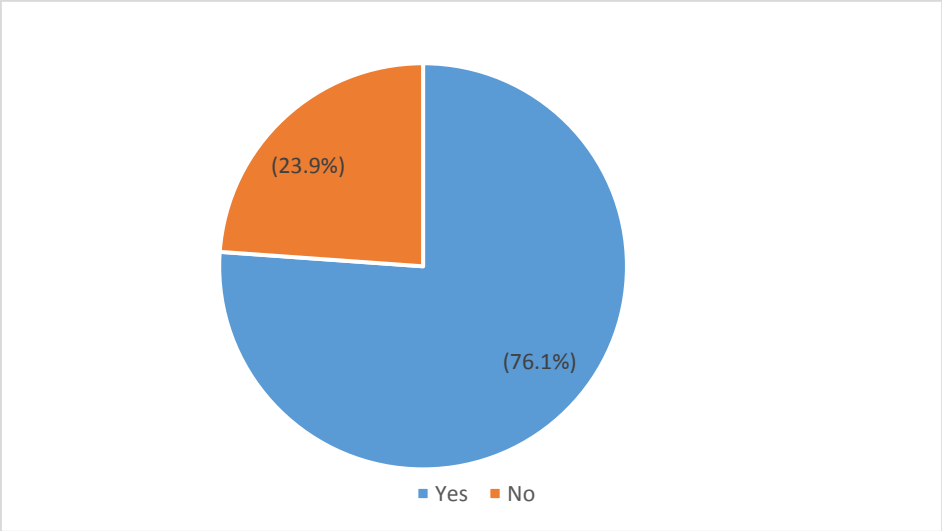

Fig 4.4: Recommend friends to participate in ANC

4.3.5 Hindrances to participate in ANC

More than a third 67 (39.2%) of the respondents reported that being on duty was their main hindrance to participation in ANC services followed by 47 (27.5%) who felt that it was not necessary. The results were as presented in the table 4.3 below:

Table 4.3: Hindrances to participate in ANC among respondents (N=171)

Respondent response	Frequency (N)	Percentage (%)
I was on duty	67	39.2
That is a woman affair	31	18.1
It is not necessary	47	27.5
It is costly	26	15.2

4.3.6 Place of delivery

Majority 180 (69.5%) of the respondents revealed that their partners delivered their latest child at the hospital setting followed by 37 (14.3%) whose partners were yet to deliver. The results were as shown in the figure 4.5 below:

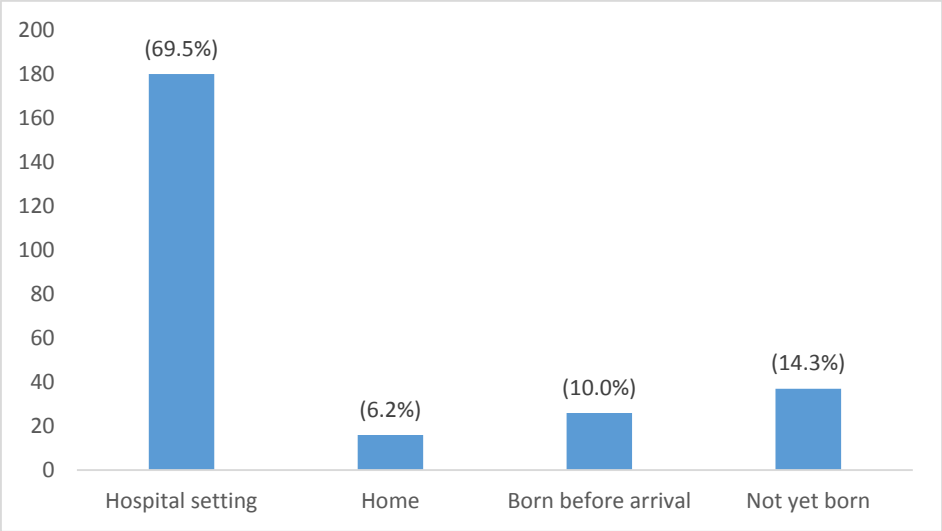

Fig 4.5: Place of delivery for the last child among respondents

4.3.7 Accompaniment to the place of delivery

Results revealed that less than half 103 (46.4%) of the respondents had accompanied their wives to the place of delivery followed by 67 (30.2%) whose wives were accompanied by neighbor or friend to the place of delivery. The results were as presented in the table 4.4 below:

Table 4.4: Who accompanied their wives to the place of delivery among respondents (N=222)

Respondent response	Frequency (N)	Percentage (%)
Myself	103	46.4
Went by herself	21	9.5
Mother-in-law	16	7.2
Neighbor/friend	67	30.2
Other relatives	15	6.8

4.4 Socio-cultural factors

4.4.1 Distribution of socio-cultural factors

Results on socio-cultural factors revealed that slightly more than half 134 (51.7%) of the respondents felt that ANC service was not a woman affair while the rest 125 (48.3%)

reported that it was a woman affair. Majority 166 (64.1%) of the respondents revealed that it was not a taboo for a man to accompany the partner to ANC while the rest 93 (35.9%) of them reported it was a taboo. Results showed that 161 (62.2%) of the respondents revealed that they would feel embarrassed to accompany their partner to ANC while the rest 98 (37.8%) would not feel embarrassed.

Majority 176 (68.0%) of the respondents revealed that it was not the responsibility of the mother in-law to accompany the wife to ANC while the rest 83 (32.0%) of them thought it was the responsibility of the mother in-law. Further results showed that slightly below half 124 (47.9%) of the respondents revealed that accompanying a partner to ANC will make them inferior especially being seen at the midst of women followed by 73 (28.2%) of them reported they won't feel inferior. The results were as presented in table 4.5 below:

Table 4.5: Distribution of socio-cultural factors among respondents (n=259)

Variable	**Respondent response**	**Frequency (N)**	**Percentage (%)**
ANC service utilization is a woman affair/man ego	Yes	125	48.3
	No	134	51.7
It is a taboo for a man to accompany the wife/partner to ANC in our community	Yes	93	35.9
	No	166	64.1
I will feel embarrassed to accompany my wife/partner to ANC	Yes	161	62.2
	No	98	37.8
It is the mother-in-law's responsibility to accompany my wife/partner to ANC	Yes	83	32.0
	No	176	68.0
Accompanying my wife/partner to ANC will make me inferior especially being seen at the midst of women	Yes	124	47.9
	No	73	28.2
	Cannot tell	62	23.9

4.4.2 Influence of socio-cultural factors on male participation in ANC

The study sought to determine the influence of socio-cultural factors on male participation in ANC services. Results showed that majority 57 (64.8%) of the respondents who revealed that ANC service utilization was not a women affair participated in ANC services. There was a significant statistical association between ANC service utilization being a woman affair and participation in ANC services (p=0.041). Majority 63 (71.5%) of the respondents who revealed that it was not a taboo for a man to accompany the wife to ANC had participated in ANC services. There was no significant statistical association between accompanying the wife to ANC being a taboo and participation in ANC service (p=0.071).

Most 121 (70.8%) of the respondents who reported that they would feel embarrassed to accompany wife to ANC had not participated in ANC services. There was a statistically significant association between feeling embarrassed to accompany wife/partner to ANC and participation in ANC service (p=0.036). Results showed that 51 (58.0%) of the respondents who felt it was not the responsibility of the mother in-law to accompany partner to ANC had participated in ANC services. There was a statistical association between mother-in-law's responsibility to accompany my wife/partner to ANC and participation in ANC services (p=0.031).

Further results showed that slightly less than half 43 (48.9%) of those respondents who revealed that accompanying a wife to ANC will make them inferior especially being seen at the midst of women had participated in ANC services. However, there was no significant statistical association between accompanying wife to ANC will making one

inferior especially being seen at the midst of women and participation in ANC services (p=0.280). The results were as presented in table 4.6 below:

Table 4.6: Association between socio-cultural factors and male participation in ANC among respondents (n=259)

Independent variable	Respondent response	Dependent variable (Male participation in ANC)		Statistical significance
		Yes (N=88)	No (N=171)	
ANC service utilization is a woman affair/man ego	Yes	31(35.2%)	94(55.0%)	χ^2=7.063 df=1 p=0.041
	No	57(64.8%)	87(45.0%)	
It is a taboo for a man to accompany the wife/partner to ANC in our community	Yes	25(28.4%)	68(39.8%)	χ^2=3.256 df=1 p=0.071
	No	63(71.6%)	103(60.2%)	
I will feel embarrassed to accompany my wife/partner to ANC	Yes	40(45.5%)	121(70.8%)	χ^2=8.288 df=1 p=0.036
	No	48(54.5%)	50(29.2%)	
It is the mother-in-law's responsibility to accompany my wife/partner to ANC	Yes	37(42.0%)	46(26.9%)	χ^2=5.619 df=1 p=0.031
	No	51(58.0%)	125(73.1%)	
Accompanying my wife to ANC will make me inferior especially being seen at the midst of women	Yes	43(48.9%)	81(47.4%)	χ^2=2.549 df=2 p=0.280
	No	20(22.7%)	53(31.0%)	
	Cannot tell	25(28.4%)	37(21.6%)	

4.5 Male awareness on ANC

4.5.1 Responses on male awareness on ANC

Regarding male awareness, the respondents were given seven (7) statements on antenatal care. They were supposed to choose the most appropriate option from the responses given. There was only one appropriate answer. Those who chose the correct option were regarded as being aware while those who chose the wrong response were regarded as not being aware. Regarding whether it was important for couples to know their HIV status during ANC, results showed that majority 182 (70.3%) of the respondents were aware and the rest 77 (29.7%) were not aware. Concerning the type of immunization given to

pregnant women during ANC, results revealed that more than half 145 (56.0%) were not aware with the rest 114 (44.0%) being aware.

Majority 202 (78.0%) of the respondents were aware on the advice of pregnant women to use Insecticide Treated Nets during ANC while the rest 57 (22.0%) were not aware. Results showed that 192 (74.1%) of the respondents were not aware on the type of supplements given to pregnant women during ANC while the rest 67 (25.9%) were aware. Slightly more than half 140 (54.1%) of the respondents were aware of some of the danger signs of pregnancy with the rest 119 (45.9%) not being aware.

Regarding the timing of a pregnant woman to start antenatal care clinic, results showed that majority 186 (71.8%) of the respondents were not aware while the rest 73 (28.2%) were aware. Most 171 (66.0%) of the respondents were not aware on the required minimum ANC visits to a pregnant woman before delivery while the rest 88 (34.0%) were aware. The results were as presented in table 4.7 below:

Table 4.7: Responses on male awareness on ANC among respondents (n=259)

Independent variable	**Respondent response**	**Frequency (N)**	**Percentage (%)**
It is important for couples to know their HIV status during ANC	Aware	182	70.3
	Not aware	77	29.7
Type of immunization given to pregnant women during ANC	Aware	114	44.0
	Not aware	145	56.0
Advise of pregnant women to use Insecticide Treated Nets during ANC	Aware	202	78.0
	Not aware	57	22.0
Type of supplements given to pregnant women during ANC	Aware	67	25.9
	Not aware	192	74.1
Some of the danger signs of pregnancy	Aware	140	54.1
	Not aware	119	45.9
Timing of a pregnant woman to start antenatal care clinic	Aware	73	28.2
	Not aware	186	71.8
Required minimum ANC visits to a pregnant woman before delivery	Aware	88	34.0
	Not aware	171	66.0

4.5.2 Overall level of male awareness on ANC

This section consisted of results concerning the level of awareness on antenatal care among male participants. The seven (7) statements on awareness were given scores which ranged from 0-7 marks. Each appropriate response was awarded a score of 1 while an inappropriate response was awarded a score of zero (0). The scores of awareness were further dived into three categories; high awareness ranged from 6-7 scores, moderate awareness ranged from 3-5 scores and low awareness ranged from 0-2 scores. The results revealed that more than a half 149 (57.5%) of the respondents had moderate awareness, 68 (26.3%) had low awareness and the rest 42 (16.2%) had high awareness. The results were as shown in the figure 4.6 below:

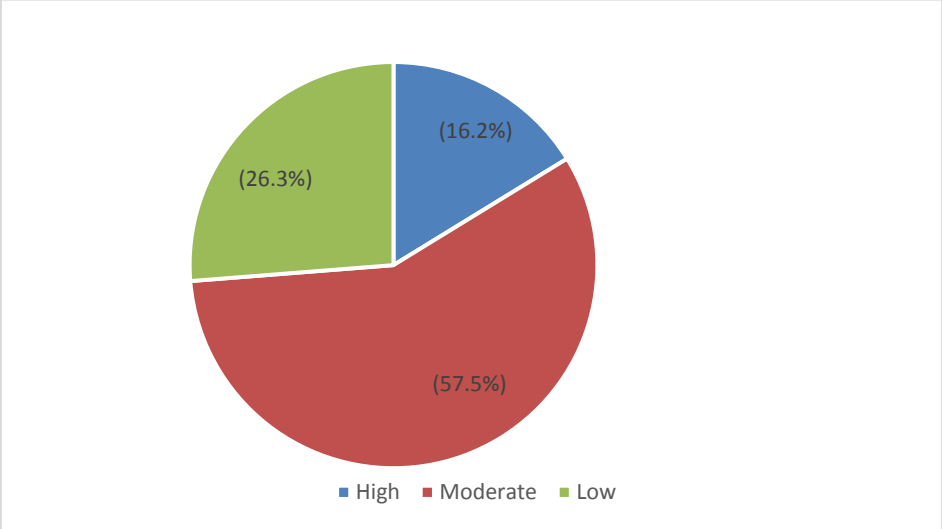

Fig 4.6: Level of awareness on ANC among respondents

4.5.3 Influence of overall level of awareness on male participation in ANC

The study sought to determine the influence of overall level of awareness on male participation in ANC service. Results revealed that majority 110 (64.3%) of the

respondents who had moderate awareness had not participated in ANC service. Further results showed that there was a significant statistical association between overall level of awareness on ANC and participation in ANC services among the respondents (p=0.001). The results were as shown in the table 4.8 below:

Table 4.8: Association between level of awareness and male participation in ANC among respondents (n=259)

Independent variable	Respondent response	Dependent variable (Male participation in ANC)		Statistical significance
		Yes (N=88)	No (N=171)	
Overall level of awareness on ANC	High	35(39.8%)	7(4.1%)	χ^2=35.787 df=2 p=0.001
	Moderate	39(44.3%)	110(64.3%)	
	Low	14(15.9%)	54(31.6%)	

4.5 Health system factors

4.5.1 Distance to the nearest health facility

Slightly more than a third 93 (35.9%) of the respondents revealed that the distance to the nearest health facility was between 1-2kilometres followed by 67 (25.9%) whose distance was between 2-3kilometres. The results were as in the table 4.9 below:

Table 4.9: Distance to the nearest health facility among respondents (n=259)

Respondent response	Frequency (N)	Percentage (%)
Less than 1 kilometer	52	20.1
1 to 2 kilometers	93	35.9
2 to 3 kilometers	67	25.9
More than 3 kilometers	47	18.1

4.5.2 Cost of accessing ANC services

Concerning the cost of accessing ANC services among the respondents, results showed that less than half 112 (43.2%) of them reported it was free to access ANC services followed 68 (26.3%) who revealed it would cost them less than Kshs 100.The results were as presented in the table 4.10 below:

Table 4.10: Cost of accessing ANC services among respondents (n=259)

Cost in Kenya Shillings	Frequency (N)	Percentage (%)
Free	112	43.2
Less than 100	68	26.3
100 to 200	36	13.9
201 to 300	27	10.4
More than 300	16	6.2

4.5.3 Attitude of healthcare workers

Regarding the attitude of healthcare workers, results revealed that 113 (43.6%) reported fair attitude followed by 57 (22.0%) who felt the attitude was good. The results were as shown in the figure 4.7 below:

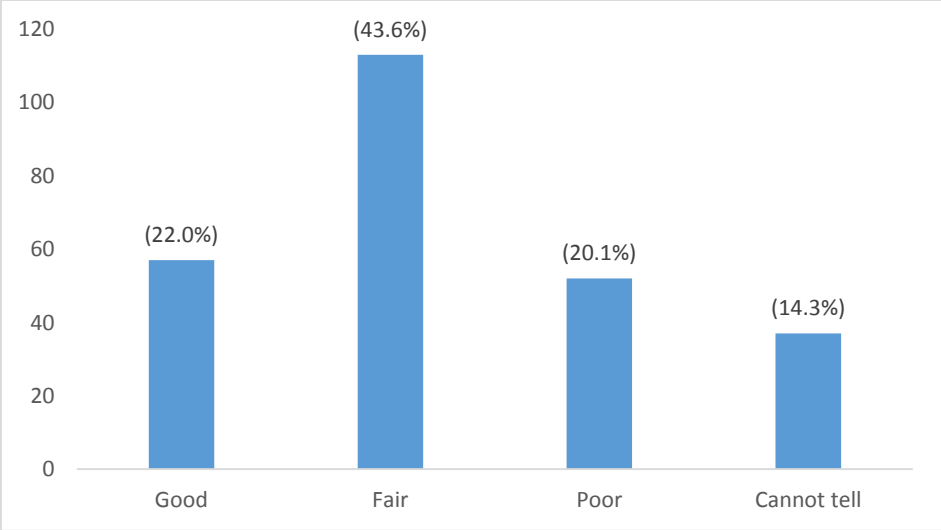

Fig 4.7: Attitude of healthcare providers

4.5.4 Wastage of time to accompany wife to ANC

More than half 140 (54.1%) of the respondents revealed that accompanying partner to ANC clinic was a waste of time followed by 77 (29.7%) who reported it was not a waste of time. The results were as shown in the figure 4.8 below:

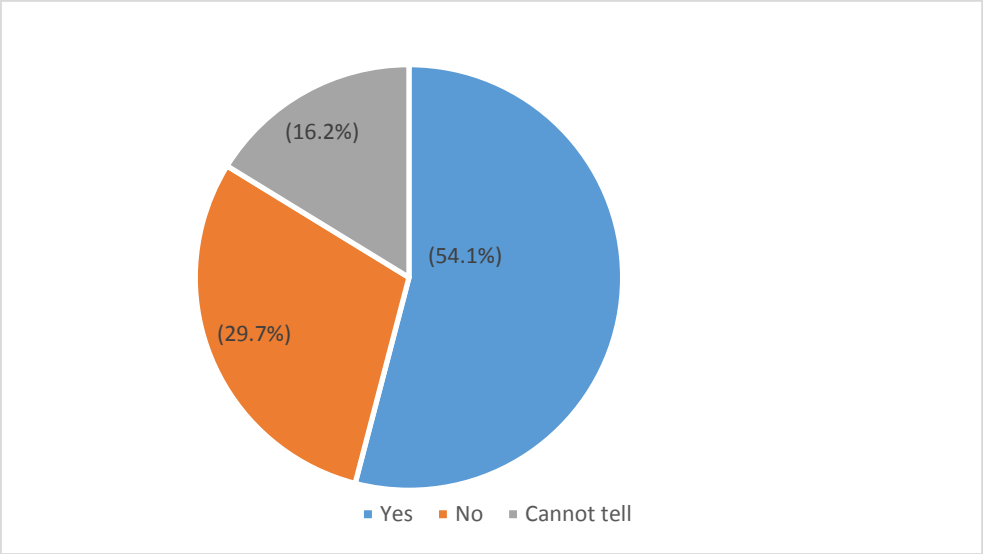

Fig 4.8: Waste of time to accompany wife to ANC

4.5.5 Friendliness of the waiting bay

Results showed that More than a third 97 (37.5%) of the respondents could not tell whether the waiting bay was friendly followed by 84 (32.4%) who reported that it was friendly. The results were as shown in figure 4.9 below:

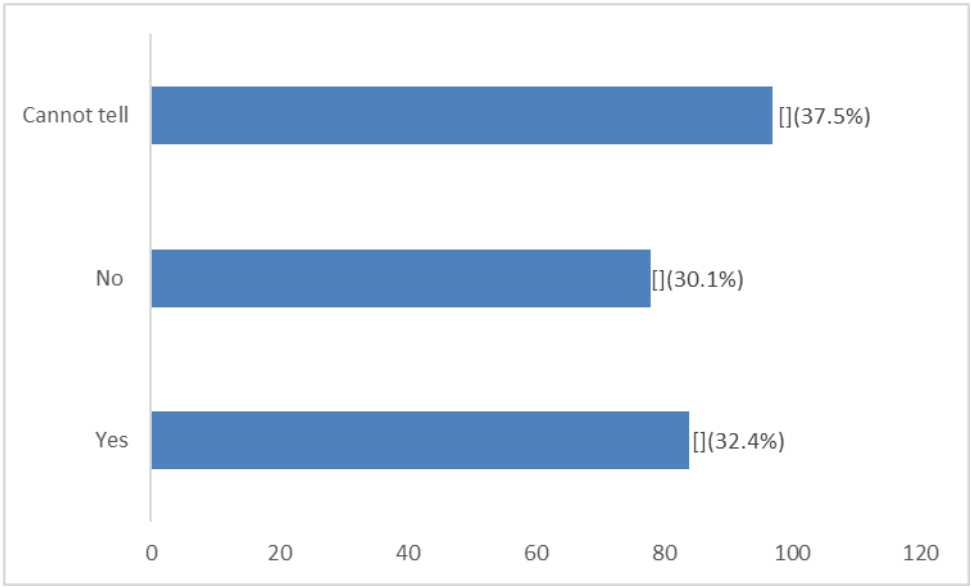

Fig 4.9: Friendliness of the waiting bay

4.5.6 Given priority of being served first when accompanied wife to ANC

On whether the respondents would be given priority of being served first should they accompany the partner, results revealed that 170 (65.6%) could not tell followed by 68 (26.3%) who revealed they were given priority. Results were as shown in the figure 4.10 below:

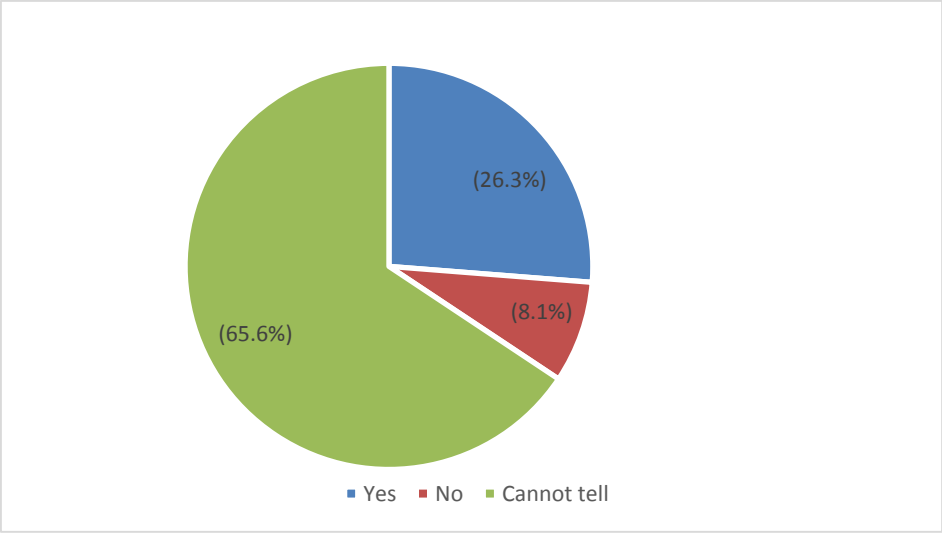

Fig 4.10: Given priority when accompanied wife to ANC

4.5.7 Influence of health system factors on male participation in ANC

The study sought to determine the influence of health system factors on male participation in ANC services. Results showed that more than a third 32 (36.4%) of the respondents whose distance to the nearest health facility had participated in ANC services. There was a significant statistical association between distance to the nearest health facility and participation in ANC among the respondents (p=0.024). Slightly less than half 40 (45.4%) of the respondents who revealed that accessing ANC services was free had participated in ANC service. There was a statistical association between cost of accessing ANC services and participation in ANC (p=0.001).

Concerning the attitude of the healthcare providers results showed that 37 (42.0%) of those who reported good attitude had participated in ANC service. There was a statistically significant association between attitude of healthcare providers and participation in ANC Service (P=0.001). More than half 98 (57.3%) of the respondents who revealed that it was a waste of time to accompany wife to ANC had not participated in ANC service. There was no significant statistical association between accompanying wife to ANC being a waste of time and participation in ANC service (p=0.301).

Results showed that less than half 36 (40.9%) of the respondents who reported that the waiting bay was friendly had participated in ANC service. There was a significant statistical association between waiting bay being friendly and participation in ANC service (p=0.008). Regarding the respondents being given priority of being served first when accompanying wife to ANC, results revealed that most 133(77.8%) of the respondents who could not tell had not participated in ANC service. However, there was no statistical association between being given priority of being served first when accompanying wife and participation in ANC service (p=0.065). The results were as shown in the table 4.11 below:

Table 4.11: Association between health system factors and male participation in ANC among respondents (n=259)

Independent Variable	Respondent response	Dependent variable (Male participation in ANC)		Statistical significance
		Yes (N=88)	No (N=171)	
Distance to the nearest health facility	< 1 KM	19(21.6%)	33(19.3%)	χ^2=7.472 df=3 p=0.024
	1-2 KM	32(36.4%)	61(35.7%)	
	2-3 KM	25(28.4%)	42(24.5%)	
	> 3 KM	12(13.6%)	35(20.5%)	
Cost of accessing ANC services (Kshs)	Free	40(45.4%)	72(42.1%)	χ^2=26.253 df=4 p=0.001
	< 100	16(18.2%)	52(30.4%)	
	100-200	5(5.7%)	31(18.1%)	
	201-300	16(18.2%)	11(6.4%)	
	> 300	11(12.5%)	5(2.9%)	
Attitude of healthcare providers	Good	37(42.0%)	20(11.7%)	χ^2=31.705 df=3 p=0.001
	Fair	30(34.1%)	83(48.5%)	
	Poor	11(12.5%)	41(24.0%)	
	Cannot tell	10(11.4%)	27(15.8%)	
Waste of time to accompany wife to ANC	Yes	42(47.7%)	98(57.3%)	χ^2=2.399 df=2 p=0.301
	No	31(35.2%)	46(26.9%)	
	Cannot tell	15(17.1%)	27(15.8%)	
Waiting bay is friendly	Yes	36(40.9%)	48(28.1%)	χ^2=9.718 df=2 p=0.008
	No	27(30.7%)	51(29.8%)	
	Cannot tell	25(28.4%)	72(42.1%)	
Given priority of being served first when accompanying wife to ANC	Yes	46(52.3%)	22(12.9%)	χ^2=11.533 df=2 p=0.065
	No	5(5.7%)	16(9.3%)	
	Cannot tell	37(42.0%)	133(77.8%)	

4.6 Employer factors

4.6.1 Responses on employer factors

The study showed that more than half 149 (57.5%) of the respondents who showed that the amount of workload in their workplace made them not to accompany wife to ANC followed by 63 (24.3%) who disagreed. Slightly less than half 124 (47.9%) of the respondents reported that employer would grant them day offs should one want to accompany wife to ANC followed by 98 (37.8%) who reported otherwise. Concerning

the terms of employment results showed that slightly more than half 134 (51.7%) were casuals followed by 68 (26.3%) who were on permanent terms.

Regarding the employer-employee relationship in the industry results showed less than half 119 (45.9%) had a fair relationship followed by 88 (34.0%) who had good relationship. On whether employer gave workers payments during paternity leave, study revealed that less than half 114 (44.0%) were given payments during paternity leave followed by 109 (42.1%) who would not be given. The results were as presented in the table 4.12 below:

Table 4.12: Distribution of employer factors among respondents (n=259)

Independent variable	**Respondent response**	**Frequency (N)**	**Percentage (%)**
Amount of workload in my workplace made me not to accompany my wife to ANC	Yes	149	57.5
	No	63	24.3
	Cannot tell	47	18.1
Employer granted workers permission should one want to accompany wife/partner to ANC	Yes	124	47.9
	No	98	37.8
	Cannot tell	37	14.3
Terms of employment	Casual	134	51.7
	Permanent	68	26.3
	Contract	57	22.0
Employer-employee relationship in the industry	Good	88	34.0
	Fair	119	45.9
	Poor	52	20.1
Provision of payments during paternity leave to male workers whose partners deliver by the employer	Yes	114	44.0
	No	109	42.1
	Cannot tell	36	13.9

4.6.2 Influence of employer factors on male participation in ANC

The researcher sought to find out the influence of employer factors on male participation in ANC service. Results revealed that majority 103 (60.2%) of the respondents who reported that the amount of workload at the workplace made them not to accompany wife to ANC had not participated in ANC service. There was a significant statistical

association between amount of workload at place of work and spouse participation in ANC service (p=0.001). Concerning employer granting permission should one want to accompany wife/partner to ANC, results showed that 99 (57.9%) of those who were granted permission did not participate in ANC service. There was no statistical association between employer granting permission should one want to accompany wife/partner to ANC and participation in ANC service among the respondents (p=0.332).

Majority 108 (63.1%) of the respondents who were on casual terms had not participated in ANC service. There was a significant statistical association between terms of employment and participation in ANC service (p=0.017). Slightly below half 43 (48.9%) of the respondents who reported a fair employer-employee relationship in the industry had participated in ANC service. There was no statistically significant association between employer-employee relationship and participation in ANC service (p=0.381). Most 53 (60.2%) of the respondents who revealed that employer provided payments for paternity leave when their wives delivered had participated in ANC service. There was a significant statistical association between provision of payments for paternity leaves and participation in ANC services (p= p=0.001). The results were as shown in the table 4.13 below:

Table 4.13: Association between employer factors and male participation in ANC among respondents (n=259)

Independent variable	Respondent response	Dependent variable (Male participation in ANC)		Statistical significance
		Yes (N=88)	No(N=171)	
Amount of workload in my workplace made me not to accompany my wife to ANC	Yes	46(52.3%)	103(60.2%)	χ^2=2.206 df=2 p=0.001
	No	22(25.0%)	41(24.0%)	
	Cannot tell	20(22.7%)	27(15.8%)	
Employer granted workers permission should one want to accompany wife/partner to ANC	Yes	25(28.4%)	99(57.9%)	χ^2=15.623 df=2 p=0.332
	No	51(58.0%)	47(27.5%)	
	Cannot tell	12(13.6%)	25(14.6%)	
Terms of employment	Casual	26(29.6%)	108(63.1%)	χ^2=12.494 df=2 p=0.017
	Permanent	47(53.4%)	21(12.3%)	
	Contract	15(17.0%)	42(24.6%)	
Employer-employee relationship in the industry	Good	25(28.4%)	63(36.8%)	χ^2=1.929 df=2 p=0.381
	Fair	43(48.9%)	76(44.4%)	
	Poor	20(22.7%)	32(18.7%)	
Provision of payments during paternity leave to male workers whose partners deliver by the employer	Yes	53(60.2%)	61(35.7%)	χ^2=16.458 df=2 p=0.001
	No	30(34.1%)	79(46.2%)	
	Cannot tell	5(5.7%)	31(18.1%)	

CHAPTER FIVE: DISCUSSIONS, CONCLUSSIONS AND RECOMMENDATIONS

5.1 Discussions

5.1.1 Male participation in utilization of ANC services

The study sought to find out male's participation in utilization of ANC services among men working in selected industries in Nairobi City County, Kenya. The results showed that majority of the respondents had accompanied their partners/wives to ANC. This could be explained by the fact that the study was done in an urban area where people are informed on the importance of couple counselling when their partners get pregnant. The results were similar to a qualitative study on perception of male involvement in pregnancy and childbirth in Masasi District in Tanzania which reported that most men accompanied their partners for the first ANC visit especially to test for HIV/AIDS (Maluka & Peneza, 2018). The results were also contrary to another study done on involvement of male in ANC, birth preparedness and complication readiness and associated factors in Ambo Town, Ethiopia which revealed that it's unthinkable to find men accompanying their wives/partners to ANC (Demissie *et al.*, 2016).

The study further sought to find out the proportion of men who had participated in ANC services. Results revealed that majority of the respondents did not participate in ANC despite majority of the respondents accompanying their wives to ANC. This means that men accompany their wives/partners to ANC just to give them moral support and not participating in the services provided. The results concurs with a Zambian study done on men's perspectives on male participation in ANC with their pregnant wives in Lusaka which revealed that low participation in ANC would deprive the wives the privacy

needed during physical examination (Muloongo *et al.*, 2019). Consistent results were also reported by another study done on determinants of male partner involvement in ANC in Wakiso District in Uganda which revealed that only 6% of male respondents participated in ANC services (Kariuki & Seruwagi, 2016).

Regarding men's motivation to participate in ANC services, the study revealed that majority of the respondents were motivated by the need to give their wives/partners psychosocial support to carry the pregnancy. This shows a sign of love and care so as to prepare women psychologically to carry the pregnancy with support from their male partners. The results were contrary to a study done on perceptions on male involvement in pregnancy and childbirth in Masasi District in Tanzania which showed that men were generally involved in ANC so as to get tested for HIV/AIDS (Maluka & Peneza, 2018). The results were inconsistent to another study done on barriers to antenatal care scale up in Rwanda where it was noted that pregnant women will not be received at the facilities without their partners/husbands (Pafs *et al.*, 2015).

The main hindrance to participating in ANC was being on duty as reported by majority of the respondents. This is because the study was done in an industry characterised by busy work where people are paid upon reaching their daily production targets. Therefore, when one is absent from work, they are not paid thus they prefer not to accompany their wives/partners to ANC clinics. The results were different from a study on prevalence of male partner involvement in ANC visits in Kyela District in Mbeya where the healthcare staff treatment of male partners was the key barrier to their participation (Kabanga *et al.*, 2019). In another study done on male partners' view of involvement in maternal healthcare services at Makhado Municipality Clinics, Limpopo in South Africa where it

was noted that working far from home was the main reason for men not participating in ANC (Nesane *et al.,* 2016). According to a study done on barriers to male involvement in antenatal care in rural Mozambique where it was reported that community beliefs hindered men in participating in ANC (Audet *et al.,* 2016).

The study further revealed that majority of the respondents reported that their partners delivered their latest child at the hospital setting. This may be attributed to the fact that the study was done in an urban setting where access to health facilities is easily available and the fact that maternal services are not charged in public health facilities due to the presence of the Linda Mama Insurance cover by the government. The results were similar to a study done in Tandahimba district in Tanzania where majority of men who participated in ANC, their wives/partners delivered in a hospital set up (Tarcred *et al.,* 2016). The results agrees with another study done in India on male involvement and utilization of maternal health services where it was noted that male involvement led to health facility deliveries (Sinha, 2016).

Finally, the study findings revealed that majority of the respondents had accompanied their wives to the place of delivery. This could be explained by the fact that the respondents were staying with their partners hence more likely to escort them to the place of delivery unlike in rural areas where such is left to the mother-in-laws. The results concurs with a study done on factors affecting husband participation in ANC attendance and delivery where it was reported that husbands escorted their wives/partners to the place of delivery (Rumaseu *et al.,* 2018). Contrary results were reported from a study done on companionship during facility-based childbirth among recently delivered women and providers in Kenya where it was reported that majority were accompanied by sisters

and sister-in-laws (Afulani *et al.,* 2018). Inconsistent results were also reached by a qualitative study on male involvement and accommodation during obstetric emergencies in Ghana where it was noted that majority of the respondents were accompanied by their mother-in-laws (Story *et al.*, 2016).

5.1.2 Socio-cultural factors

Results on socio-cultural factors revealed that most of the respondents felt that ANC service was not a woman affair. This may be explained by the fact that the respondents were more exposed to information on maternal health services thus regarded ANC utilization as a shared responsibility. The results were contrary to a study done in Ethiopia on maternal healthcare use among married women where it was noted that women were tasked to childbirth and attendance to ANC was solely left to women as men attended to other family matters (Dutamo *et al.,* 2015). ANC service utilization being a woman affair was significantly associated with male participation in ANC. The results were similar to a study done in Ghana where it was noted that majority of respondents perceived that pregnancy care is a female role and men are family providers thus affecting male involvement in ANC (Ganle & Dery, 2015).

The findings of this study showed that it was not a taboo for a man to accompany his partner/wife to ANC. This is because the respondents were from different social-cultural backgrounds and in a metropolitan region where some aspects of culture have been dispelled. The results were contrary to a study done in rural Mozambique on barriers to men involvement in antenatal care where majority of the respondents reported that it was taboo to accompany their wives/partners to NC visits (Audet *et al.,* 2016). There was no significant statistical association between accompanying wife/partner to ANC being a

taboo and participation in ANC service. The results were inconsistent to a study done in Kwale and Kilifi in Kenya on male involvement in safe motherhood where it was noted cultural beliefs and taboos were associated with male involvement in antenatal care (Ouma *et al.*, 2019). Contrary results were reported by a study done in Papua in New Guinea where it was noted that socio-cultural norms and taboos were the most commonly reported barriers to expectant fathers from participating in ANC (Davis *et al.*, 2018).

Results showed that most of the respondents revealed that they would feel embarrassed to accompany their partner to ANC. This may be explained by the fact that matters pertaining to pregnancy and childbirth are left to women alone as men are regarded as playing the provider role for the family. It can also be attributed to the culture of male dominance in most African cultures where decision making is done by the fathers hence may decide not to accompany their partners to ANC. The results were in agreement with a study in Kinshasa in Democratic Republic of Congo where it was revealed that male will feel embarrassed being in a room full of women where some speak without holding (Gill *et al.*, 2017). Feeling embarrassed to accompany wife/partner to ANC was significantly associated with male participation in ANC. The more one feels embarrassed the more one is unlikely to participate in ANC. The results were similar to a study done on factors influencing male involvement in ANC in Shai Osudoku district of the Great Accra Region in Ghana where it was reported that those who felt embarrassed did not participate in ANC (Dziekpor, 2018).

Majority of the respondents revealed that it was not the responsibility of the mother in-law to accompany the wife to ANC. This could be attributed to the fact that most of the respondents were living with their partners and their mother-in-laws were not around to

accompany their wives to ANC as it has been a norm in rural areas. Inconsistent results were reached by a qualitative study on male involvement and accommodation during obstetric emergencies in Ghana where it was noted that majority of the women were accompanied by their mother-in-laws to ANC (Story *et al*., 2016). There was a statistical association between mother-in-law's responsibility to accompany my wife/partner to ANC and participation in ANC services. The results were not in agreement with a study done in Nigeria where it was revealed that there was no association between being a mother-in-law's responsibility to accompany wife to ANC and male participation in ANC among respondents (Adeniran *et al.,* 2015).

Further, the results showed that less than a half of the respondents revealed that accompanying a partner to ANC would make them feel inferior especially being seen at the midst of women. This could be due to the fact that from time immemorial especially in African cultures where men are not always supposed to be mingled among especially pregnant women. The results concurs with a study done in Zimbabwe on male participation in ANC services where it was noted that it is not fully acceptable by some male Zimbabweans because participating in antenatal services is seen as a weakness (Tokwe, 2018). However, there was no significant statistical association between accompanying wife to ANC making one inferior especially being seen at the midst of women and male participation in ANC services. The results were contrary to a study done in Bumula sub-county in Western Kenya on determinants and perceived benefits of male partner involvement in antenatal and post natal care where it was revealed that inferiority if male accompanies spouse to PNC and ANC negatively influenced male participation (Nafula, 2018).

5.1.3 Male awareness on antenatal care

The study sought to find out male awareness on antenatal care among the respondents. The results of this study revealed that most of the respondents were aware that it was indeed important for couples to know their HIV status during antenatal care. This may be attributed to the fact that there is much more information on antenatal care on a variety of platforms including social media and mass media which can be easily accessed even if a man does not accompany partner to ANC. The results were similar to a study done in Tanzania where majority of the respondents were aware of the importance of HIV testing during pregnancy so as to prevent mother to child transmission during delivery and taking care of the child (Maluka & Peneza, 2018). Contrary results were also reported by a study done on male partner involvement in pregnancy related care among married men in Nigeria where it was revealed that majority of the respondents were not aware on the importance of couple HIV testing in pregnancy (Falade & Adebayo, 2020).

Regarding male awareness on immunization during pregnancy, the results revealed that most of the respondents were not aware on the type immunization given to women during pregnancy. This is because they were unable to note that pregnant women are immunized against tetanus. The results were similar to another study on barriers to antenatal care in Rwanda where it was noted that limited male participation in antenatal care has resulted to men being unaware on the types of vaccines and supplements that are given to pregnant women (Pafs, 2015).

On whether pregnant women should always use Insecticide Treated Nets, the study revealed that majority of the respondents were aware on the same. This could be attributed to the fact that ITNs should also be used by the general public as a measure to

reduce incidences of malaria transmission as well as keep pregnant mothers safe. The results consistent with a study done in Ghana which revealed that majority of the respondents were aware the importance of using ITNs among pregnant women as a precautionary measure to curb malaria transmission (Nyavor *et al.*, 2017). In another study done on determinants of male partner involvement in ANC in Uganda it was noted that majority of the respondents were not aware on the importance of using ITNs among pregnant women (Kariuki & Seruwagi, 2016).

The study results revealed that most of the respondents were aware on the danger signs of pregnancy. This is true especially during the first pregnancy when men are more concerned about their wife's pregnancy progress so as to ensure they are safe and health. The results were similar to a study done in rural Tanzania where majority of the respondents were able to mention at least one danger sign of pregnancy (August *et al.*, 2015). Male participation in ANC ensures people are educated and become more aware on the danger signs of pregnancy as shown by a systematic review from developing countries (Aguiar & Jennings, 2015).

Regarding the timing of a pregnant woman to start antenatal care clinic, results showed that majority of the respondents were not aware. This may be attributed to the fact that most of the respondents did not participate in ANC hence when unable to tell when one should start antenatal care visit. The World Health Organization further recommends that pregnant women should attend at least four ANC visits for normal pregnancies without complications. The results were in agreement with another study on opportunities for male involvement during pregnancy where it reported that most of the respondents were not aware on the timing of the first pregnancy nor the minimum required number of ANC

visits (Vermeulen *et al.,* 2016). In another study done in Malawi, it was noted that males were not aware on the timing and importance of ANC visits hence prompted the government to offer incentives to couples who attended ANC clinics (Choko *et al.,* 2019).

The results revealed that majority of the respondents had a moderate level of awareness on ANC. This is because they partially knew some of the aspects of pregnancy to note and services offered during antenatal care visits. These findings concurs with a study on factors influencing male involvement in antenatal healthcare services in Aber Sub-County in Oyam District of Uganda which showed that majority of the respondents had a low level of awareness on ANC (Lamunu, 2016). There was a statistical association between overall level of awareness on ANC and male participation in ANC services. This means that awareness was a key factor that influenced male participation in ANC. The results were similar to a study done by Kabanga *et al* (2019) which showed awareness positively influenced male participation in ANC.

5.1.4 Health facility factors

The results revealed that the health system factors attributed to affect male participation in antenatal care among respondents. The results revealed that majority of the respondents revealed that the distance to the nearest health facility was between 1 to 2 kilometers. This means that the health facilities were closely located hence easier for people to access antenatal care services. The results concurs with a study done on male involvement in maternal healthcare in Anomabo Central region in Ghana which showed that the distance to the nearest health facility was approximately less than 5 kilometers (Craymah *et al.,* 2017). The distance to the nearest health facility had a significant

influence to male participation in ANC. In a study conducted in Malindi Sub-County in Kenya on male involvement in maternal health planning as a key to utilization of skilled birth services, distance to the nearest health facility together with unevenly distributed facilities and poor road network negatively affected male participation in maternal health service utilization (Nyandieka *et al.,* 2016). In India, a study on male involvement and utilization of maternal health services similar results were also reached where distance was noted as one of the factors that affected male partner participation in utilization of maternal health services (Sinha, 2016).

Concerning the cost of accessing ANC services, results showed that most of the respondents reported that it was free to access ANC services. This may be explained by the fact that in Kenya, maternal health services including antenatal care are free due to existence of the Linda Mama Insurance cover by the government. The results were contrary to a study done in Butula in Western Kenya on barriers to men's involvement in antenatal and postnatal care where it was reported that the cost of transportation incurred was relatively high (Ongolly & Bukachi, 2019). Cost was a significant factor on male participation in utilization of ANC. The results were similar to a study done in Uganda on determinants of male partner involvement in antenatal care where cost of antenatal care influenced male partner involvement in ANC (Kariuki & Seruwagi, 2016). Men suffer opportunity cost of lost wages whenever they escort their partners to seek maternal health services (Yende *et al.,* 2017).

According to the study results, it was noted that majority of the respondents viewed the attitude of the care providers to be fair in terms of their treatment. The study results were consistent with a qualitative study on policymaker, health providers and community

perspective on male partner involvement during pregnancy in Southern Mozambique which revealed that the attitude of healthcare providers was perceived to be passive (Galle *et al.,* 2019). There was a statistically significant association between attitude of healthcare providers and participation in ANC Service. This is because when men perceive attitude of care providers to positive they are more likely to influence male partners in participating in maternal health services even if they are not free as shown by study results from Ghana (Yidana *et al.,* 2018).

The findings of this study that less than a half of the respondents could not tell whether the waiting bay was friendly. This could be explained by the fact that most of the respondents did not participate in ANC hence were not in a position to give their view of the waiting bay. Contrary results were reached by a study done on socio-cultural and economic barriers and facilitators influencing men involvement in ANC where the antenatal care attendees would wait their partners in a waiting bay (Sakala *et al.,* 2020).However, there was a significant statistical association between waiting bay being friendly and participation in ANC service. This is supported by the fact that most of those who participated in ANC reported that the waiting bay was friendly. This could probably attracted them to get involved. Similar results were reported in a study done in Suba Sub-County in Kenya on accessing men's knowledge and perceptions of male involvement in maternal and child health services where male partners could sit in their cars for prolonged hours waiting for their spouses (Odhiambo, 2018).

Finally, the findings of this study revealed that majority of the respondents would not tell whether they would be given priority of being served first should they accompany their partners to antenatal care. This would be attributed to the fact that most of them did not

participate in ANC. Inconsistent results were reached by a study done on men's perspectives on male partner participation in antenatal care in Lusaka, Zambia where it was noted that priority was given to couples attending ANC (Muloongo et al., 2019). Despite the fact that there was no association between being given priority of being served first and male participation in ANC, most of the respondents who said they are given priority participated in antenatal care. The results concurs with a study done in Uganda on men's response to Obulamu campaign messages about male involvement in maternal health where it was noted that giving couples priority for ANC did not improve the situation (Kayongo & Miller, 2019).

5.1.5 Employer factors

The amount of workload in the workplace made the respondents not to accompany their wives to ANC. This may be explained by the fact that most of the respondents were on casual terms hence they were working on set targets for them to be paid. There was a significant statistical association between amount of workload at place of work and male participation in ANC service. This means they rarely got time to accompany their spouses to ANC. The results concurs with a study done in Central Tanzania on factors influencing men involvement in ANC which reported that time spent in accompanying spouses to ANC services had more implications to male involvement in ANC among employed men (Gibore *et al.,* 2019). According to a qualitative study done on policymaker, health provider and community perspectives on male partner involvement during pregnancy in Southern Mozambique where it was revealed that most men have spare time to spend on activities outside work and since most employers accept a temporary absence from work and could use such to escort their wives to ANC (Galle *et al.,* 2019).

Most of the respondents reported that their employer would grant them permission should one want to accompany wife to a hospital. Contrary results were reported by a study done in Lagos in Nigeria on a qualitative study on male partner participation in maternal health where it was noted that job demands without permission being granted to attend ANC affected male partner participation maternal health services (Adejoh *et al.,* 2018). However, there was no statistical association between employer granting permission should one want to accompany wife/partner to ANC and male participation in ANC. This may be because majority of the respondents were on casual terms and even if one is given permission and he is not paid for that particular day when one was absent. Therefore people would opt not to take a day off to accompany partner to ANC in preference to going to work. In a study done in Rwanda, results revealed that where men were not granted permission to attend the mandatory first ANC visit while other women would hire other men to pretend to be their husbands so that they could be served (Pafs *et al.,* 2015).

Majority of respondents were employed on casual labour. This may be because probably there could be a high turnover rates and heavy physical work where industries tend to hire people on casual terms. There was a significant statistical association between terms of employment and participation in ANC service as most of those who were on casual terms did not participate in ANC. According to a systematic review in Sub-Sahara Africa, it was reported that sporadic jobs and casual labors influence negatively male participation in ANC (Manjate et al., 2015). In another study done on male involvement in PMTCT and associated factors in North-West Ethiopia, it was noted that those who

were in permanent employment terms were more likely to attend ANC (Amano & Musa, 2016).

The results of this study revealed that less than a half of the respondents accepted that they were given payments for paternity leave when their wives delivered. According to a study done by Afifah *et al* (2019) on improving male participation in maternal healthcare seeking behavior, it was reported that most of the respondents were not given paid paternity leave. There was a significant statistical association between employer giving payments for paternity leave and participation in ANC services. This is explained by the fact that those who were given paid paternity leave were more likely to participate in antenatal care. The results concurs with a study done in Indonesia where it was revealed that one of the challenges of male involvement in antenatal care was lack of paid paternity leave due to the nature of employment (Xue *et al.*, 2018).

5.2 Conclusions

The study concludes that the rate of male participation in utilization of antenatal care was low at 34.0% despite 56.0% of respondents accompanying their spouses to ANC in selected industries in Nairobi City County. Psychosocial support was the main reason for participation. The main hindrance of male involvement in ANC was being on duty.

The findings of this study showed that most of the socio-cultural factors significantly influenced male participation in utilization of ANC services. They included; ANC service utilization is a woman affair, feeling of embarrassment to accompany partner to ANC and it was the responsibility of the mother-in-law to accompany wife to ANC.

The study also concludes that the level of male awareness on ANC was average with 57.5% of respondents in Nairobi City County. The level of awareness significantly influenced male participation in ANC. Most of them did not recognize the danger signs of pregnancy, immunizations and supplements given to pregnant women and timing of pregnancy to start antenatal care clinics.

The study further concludes that majority of the health facility factors influenced male partner participation in ANC in Nairobi City County. They include; distance to the nearest facility, cost of accessing ANC services, attitude of healthcare providers and friendly waiting bay.

Finally, the study concludes that most of the employer factors significantly influenced male participation in utilization of ANC services. They included; amount of workload, terms of employment and payments during paternity leave.

5.3 Recommendations

5.3.1 Recommendations from the study

(i) The study recommends that the Ministry of Health should advocate for a mandatory male involvement in the first ANC visit to a health facility and give incentives to improve their participation in utilization of antenatal care services.

(ii) The study recommends that the Ministry of Health together with other stakeholders in health should sensitize men on the myths and misconceptions associated with male partner involvement in ANC so as to break the socio-cultural issues hindering men from actively participating in antenatal care services.

(iii) The study also recommends that the Ministry of Health together with other stakeholders should scale up community mobilization and sensitization programs aimed at improving male awareness in importance of participating in utilization of ANC.

(iv) The study further recommends that the Ministry of Health together with the national government should design friendly waiting bay that can attract male and also enforce priority for couples to be served first when they attend antenatal care services.

(v) The study finally recommends that the employers should be compelled to provide payments during paternity leaves and permission to men who intend to accompany their spouses to improve their participation in utilization of antenatal care services.

5.3.2 Recommendations for further study

A further study should be done to assess women perspectives on male involvement in utilization of antenatal care services in Kenya.

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APPENDICES

Appendix i: Questionnaire for the Male Partner

Consent for participation

My name is **NANCY JELAGAT KIRUI** I am a MASTERS student from Kenyatta University. I am conducting a study on male participation in utilization of antenatal care services among their spouses in selected manufacturing industries in Nairobi city county, Kenya. The information will be used by the ministry of Medical Services and Ministry of Public Health and Sanitation to improve male participation in utilization of ANC services among their spouses.

Procedure to be followed

Participation in the study will require that I ask you some questions. I will record the information from you in a questionnaire. You have the right to refuse participation in this study. Please remember that participation in the study is voluntarily. You may ask questions related to the study at any time. You may refuse to respond to any question and you may stop the interview at any time.

Discomfort and risks

Some of the questions you will be asked are on intimate subject and may be embarrassing or make you uncomfortable. If this happens you may refuse to answer these questions if you so choose. You may also stop the interview at any time.

Benefits

If you participate in this study you will help us to learn how to improve male participation in utilization of ANC services that can reduce maternal and child morbidities and mortalities. Whether you decide to leave the study or not, your decision will not change the care you will receive from any hospital any other time.

Confidentiality

The interviews will be conducted privately and information provided kept confidential. Your name will not be recorded on the questionnaire. The questionnaires will be kept in a locked cabinet for safe keeping at Kenyatta University.

Contact information

If you have any questions you may contact: 1) Prof. Margaret Keraka – 0721817521 OR

2) Dr. Felix Musili- 0722788211

The Kenyatta University Ethical Review Committee Secretariat on

chairman.kuerc@ku.ac.ke, secretary.kuerc@ku.ac.ke

Participant's statement

The above information regarding my participation in the study is clear to me. 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 I will receive from any hospital any other time.

Code participant……..

Signature…… Date……..

Investigator statement

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

Name of interviewer ……

Signature …… Date……

Questionnaire for the Male Partner

Male Participation in Utilization of Antenatal Care Services Among their spouses In Selected Manufacturing Industries in Nairobi City County, Kenya.

Participant No_____

Name of factory_____

Date of interview_____

Section A: Socio demographic characteristic of study population.

1. What is your age in years?
2. What is your highest education level?

[1] No formal education [2] Primary education

[3] Secondary [4] Tertiary

3. What is your religion?

[1] Protestant [2] Catholic

[3] Muslim [4] Others (please specify)…….

4. How much is your monthly salary in Kenya shillings?

5. How many children do you have?

[1] None (pregnant) [2] 1

[3] 2 [4] 3

[5] More than 3

6. Do you stay with your wife/partner?

[1] Yes [2] No

Section B: Male participation in utilization of ANC services among their spouses

7. Have you ever accompanied your partner to an ANC clinic?

[1] Yes [2] No

8. If yes in question 7, did you participate by accompanying her to the antenatal consultation room?

[1] Yes [2] No

9. If **yes** in question 8 above, what motivated you? (tick appropriately)

[1] My wife requested [2] It is a hospital requirement

[3] For couple testing for HIV [4] For psychosocial support

[5] Wanted to know her pregnancy progress [6]others(please specify……

10. If yes to question 9 above, will you recommend your friends to accompany their wives to ANC visits?

[1] Yes [2] No

11. If No to question 7, what hindered you from accompanying your wife to ANC visits?

[1] I was on duty [2] That is a woman's affair

[3] It is not necessary [4]others(please specify).....

12. Where did your partner deliver in the last delivery?

[1] Hospital setting [2] Home

[3] Born before arrival [4] Not yet born

13. Who accompanied her to the place of delivery?

[1] Myself [2] Went by herself

[3] Mother-in-law [4] Neighbor/friend

[5] Other relatives

Section C: Socio-cultural factors

14. ANC services utilization is a women affair/Man ego.

[1] Yes [2] No

15. It is a taboo for a man to accompany the wife/partner to ANC in our community?

[1] Yes [2] No

16. I will feel embarrassed to accompany my wife/partner to ANC.

[1] Yes [2] No

17. It is the responsibility of the mother-in-law to accompany my wife/partner to ANC.

[1] Yes [2] No

18. Accompanying my wife/partner to ANC will make me inferior especially being seen at the midst of women.

[1] Yes [2] No

[3] Cannot tell

Section D: Male awareness on ANC components

19. During ANC visits, it is important to for couples to know their HIV status.

[1] Yes [2] No

20. During ANC visits, pregnant women are immunized against?

[1] Poliomyelitis [2] Tetanus

[3] Rotavirus [4] Hepatitis

21. During ANC visits, pregnant women are advised to use Insecticide Treated Nets (ITNs).

[1] Yes [2] No

22. During ANC visits, pregnant women get the following supplements.

[1] Vitamin A [2] Iron and folic acid tablets

[3] None

23. Tick the appropriate danger signs of pregnancy

[1] High blood pressure [2] lack of appetite

[3] Vaginal bleeding [4] dizziness

[5]Nausea

24. When should a pregnant woman start Ante Natal Clinic? (Kindly indicate)

Section E: Health facility factors

25. Distance to the nearest health facility

[1] Less than 1 kilometer [2] 1 to 2 kilometers

[3] 2 to 3 kilometers [4] More than 3 kilometers

26. What is the cost of accessing ANC services in Kenya shillings?

27. How can you rate the attitude of healthcare providers in the facilities?

[1] Good [2] Fair

[3] Poor [4] Cannot tell

28. Accompanying my partner/wife to seek for ANC services is a waste of time.

[1] Yes [2] No

[3] Cannot tell

29. Is the waiting bay friendly in the facility?

[1] Yes [2] No

30. When accompanying wife/partner to ANC, you are given a priority of being served first.

[1] Yes [2] No

[3] Cannot tell

Section F: Employer factors

31. Heavy workload in my place of work made me not to accompany my wife/partner for ANC.

[1] Yes [2] No

[3] Cannot tell

32. Does your employer give day off should you want to accompany your wife/partner for ANC?

[1] Yes [2] No

[3] Cannot tell

33. What are your terms of employment?

[1] Casual basis [2] Permanent basis

[3] Contract basis

34. Rate your employee-employer relationship in this industry.

[1] Good [2] Fair

[3] Poor

35. My employer gives workers paid paternity leave to male whose partners give birth?

[1] Yes [2] No

[3] Cannot tell

Thank you so much for your time

Appendix ii: Research authorization from Kenyatta University Graduate School

KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: dean-graduate@ku.ac.ke
Website: www.ku.ac.ke

P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 020-8704150

Our Ref: Q139/CE/29077/2015

DATE: 11th December, 2019

Director General,
National Commission for Science, Technology
and Innovation
P.O. Box 30623-00100
NAIROBI

Dear Sir/Madam,

RE: RESEARCH AUTHORIZATION FOR MS. NANCY JELAGAT KIRUI – REG. NO. Q139/CE/29077/15

I write to introduce Ms. Nancy Jelagat Kirui who is a Postgraduate Student of this University. She is registered for M.P.H. degree programme in the Department of Population, Reproductive Health & Community Resource Management.

Ms. Kirui intends to conduct research for a M.P.H. thesis Proposal entitled, "Male Participation in Utilization of Antenatal Care Services among their Spouses in Selected Manufacturing Industries in Nairobi City County, Kenya."

Any assistance given will be highly appreciated.

KENYATTA UNIVERSITY OFFICE OF DEAN 17 DEC 2019 GRADUATE SCHOOL P.O. Box 43844-00100 NAIROBI

Yours faithfully,

for PROF. ELISHIBA KIMANI
DEAN, GRADUATE SCHOOL

Appendix iii: Ethical clearance from KU Ethics and Review Committee

Kenyatta University
P.O Box 43844-00100
Nairobi-Kenya

REF: KU/ERC/APPROVAL/VOL1/1 Date: 17th March, 2020

Nancy Jelagat Kirui
P.0 Box 43844-00100
NAIROBI

Dear Ms. Kirui

RE: APPLICATION NUMBER: PKU/2056/I1203 MALE PARTICIPATION IN UTILIZATION OF ANTENATAL CARE SERVICES AMONG THEIR SPOUSES IN SELECTED MANUFACTURING INDUSTRIES IN NAIROBI CITY COUNTY, KENYA

This is to inform you that ***KENYATTA UNIVERSITY ETHICS REVIEW COMMITTEE*** has reviewed and approved your above research proposal. Your application approval number is **PKU/2099/I1246 .** The approval period is ***17th March, 2020 – 17th March, 2021.***

This approval is subject to compliance with the following requirements;

i. Only approved documents including (informed consents, study instruments, MTA) will be used
ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by ***KENYATTA UNIVERSITY ETHICS REVIEW COMMITTEE.***
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 ***KENYATTA UNIVERSITY ETHICS REVIEW COMMITTEE*** 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 ***KENYATTA UNIVERSITY ETHICS REVIEW COMMITTEE*** 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 ***KENYATTA UNIVERSITY ETHICS REVIEW COMMITTEE.***

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

Prof. Judith Kimiywe

CHAIRPERSON- KENYATTA UNIVERSITY ETHICS REVIEW COMMITTEE.

Appendix iv: Research authorization from National Council for Science, Technology and Innovation

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **699948**

Date of Issue: **30/March/2020**

RESEARCH LICENSE

This is to Certify that Ms.. NANCY JELAGAT KIRUI of Kenyatta University, has been licensed to conduct research in Nairobi on the topic: MALE PARTICIPATION IN UTILIZATION OF ANTENATAL CARE SERVICES AMONG THEIR SPOUSES IN SELECTED MANUFACTURING INDUSTRIES IN NAIROBI CITY COUNTY, KENYA for the period ending : 30/March/2021.

License No: **NACOSTI/P/20/4639**

699948

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Verification QR Code

COUNTY COMMISSIONER
NAIROBI COUNTY
P. O. Box 30124-00100, NBI
TEL: 341666

NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.

Appendix v: Research permit from Ministry of Education

Republic of Kenya

MINISTRY OF EDUCATION

STATE DEPARTMENT OF EARLY LEARNING AND BASIC EDUCATION

Telegrams: "SCHOOLING", Nairobi
Telephone; Nairobi 020 2453699
Email: rcenairobi@gmail.com
cdenairobi@gmail.com

When replying please quote

REGIONAL COORDINATOR OF EDUCATION
NAIROBI REGION
NYAYO HOUSE
P.O. Box 74629 – 00200
NAIROBI

Ref: RCE/NRB/RESEARCH/1/64 vol.1 DATE: 14TH APRIL 2020

Nancy Jelagat Kirui

RE: RESEARCH AUTHORIZATION

We are in receipt of a letter from the National Commission for Science, Technology and Innovation regarding research authorization in Nairobi County on *"Male Participation in Utilization of Antenatal Care Services Among their Spouses in Selected Manufacturing Industries in Nairobi City County, Kenya ."*

This office has no objection and authority is hereby granted for a period, **30th March , 2021** as indicated in the request letter.

Kindly inform the Sub County Director of Education of the Sub County you intend to visit.

REGIONAL DIRECTOR OF EDUCATION NAIROBI 14 APR 2020 P. O. Box 74629, NAIROBI

JAMES KIMOTHO
FOR: REGIONAL DIRECTOR OF EDUCATION
NAIROBI.

Copy to: Director General/CEO
National Commission for Science, Technology and Innovation
NAIROBI.

Appendix vi: Research authorization from Nairobi City County

GOVERNOR'S OFFICE
NAIROBI CITY COUNTY
15 APR 2020
RECEIVED

NANCY JELAGAT KIRUI,
KENYATTA UNIVERSITY (DUHS)
PO BOX 43844 -00100,
NAIROBI.
Tel-0720598985.

14/April/2020

THE GOVERNOR,

NAIROBI CITY COUNTY,

PO BOX 300075,

NAIROBI.

Dear Sir/Madam,

REF: **COMMENCEMENT OF RESEARCH**

I, Nancy Jelagat Kirui a master's student at Kenyatta University wish to inform the Nairobi County Governor of my intention to commence research approval period 17/ March /2020- 17/march/ 2021.Ths is a requirement from National Commission for Research and Technology (NACOSTI) Regulations (2014) condition 4. My research topic is "MALE PARTICIPATION IN UTILIZATION OF ANTENATAL CARE SERVICES AMONG THEIR SPOUSES IN SELECTED MANUFACTURING INDUSTRIES IN NAIROBI CITY COUNTY, KENYA".

Attached is a copy of my research licence.

Thankyou in Advance.

Yours faithfully

Nancy Jelagat Kirui

OFFICE OF THE COUNTY
SECRETARY, NAIROBI
14 APR 2020
RECEIVED

CC

COUNTY SECRETARY.

Appendix vii: Map of Nairobi City County