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# Determinants of Male Partner Involvement in Antenatal Care in Wakiso District, Uganda

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***Authors' contributions***

*This work was carried out in collaboration between both authors. Author KFK designed the study, wrote the protocol and wrote the first draft of the manuscript in consultation with author GKS. Both authors worked together to refine subsequent versions, read and approved the final manuscript.*

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## ABSTRACT

**Aims:** In spite of its associated positive outcomes for maternal and child health, male partner involvement continues to be low in Uganda. This study sought to assess determinants of male involvement (MI) in antenatal care (ANC) in a Ugandan sub-urban context as well as the proportion of male partners who are consistently involved in ANC.
**Place and Duration of Study:** This was a descriptive cross-sectional community-based survey with both quantitative and qualitative approaches conducted in Makindye sub-county, a peri-urban area in central Uganda, between August and October 2015.
**Materials and Methods:** Participants were selected using simple random sampling. Data were collected from 384 males aged 18 - 49 years whose wife had given birth to at least one child and below two years of age. In addition 21 key informants were also purposively selected for the qualitative strand.
**Results:** Male involvement in ANC was found to be very low (6%) and attributed to socio-demographic factors such as education (p=0.000), marriage (p=0.001) and age (p=0.044) which were found to increase ANC involvement while lower income earnings (p =0.023) decreased MI levels. Inconsistent participation in ANC is increased by: not living together with their spouses

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during pregnancy (OR-3.474, p-0.012); family members living with male partners and their spouses (OR-4.122, p-0.001); family members influencing male partners' decision to get involved in ANC (OR-5.421, p-0.001); unplanned pregnancies (OR-8.935, p-0.001); peer influence (OR-3.614, p-0.036); and limited male involvement in deciding where spouses attend ANC (4.245, p-0.009). Health worker attitude (p=0.001), waiting time (p=0.001) and cost of antenatal services (P=0.003) were significantly associated with male involvement in ANC.

**Conclusion:** Study findings confirmed low MI in ANC with explanatory factors being social, economic and system related. Interventions need to focus on continued sensitization and dialogue especially with and among men; support income generating initiatives and address health system barriers to male involvement.

*Keywords: Male involvement; male participation; maternal health; antenatal care; pregnancy.*

## 1. INTRODUCTION

The World Health Organization (WHO) estimates that 303,000 women died during pregnancy and childbirth in 2015. 99% of these maternal deaths occurred in developing countries and most could have been prevented. International commitment to lowering the maternal mortality rate contributed to a decline of about 44% between 1990 and 2015 and as part of the Sustainable Development Agenda, the target is to reduce the global maternal mortality ratio to less than 70 per 100 000 live births [1]. Although antenatal c are (ANC) is considered an important intervention for reducing maternal and newborn mortality, the evidence shows show ANC services in most developing countries to be under-utilized [2-4]. A global study among 69 countries reported the median coverage rate of at least one ANC visit at 88% and four or more ANC visits at 55% [5].

Uganda, like many other developing countries, has a high maternal mortality ratio (MMR) of 438 per 100,000 live births, a far cry from the target of 185 per 100,000 live births. Although 95% of mothers received ANC from a skilled provider for their most recent live birth, only 59% were delivered by a doctor or nurse/midwife, and 57% were delivered in a health facility [6]. Supervision by skilled health attendants during pregnancy care, delivery and the post-partum period is recognized as key in the reduction of maternal mortalities [7,8]; it is therefore one of the key intervention areas in maternal and infant survival. Descriptive analyses from national Demographic and Health Surveys showed that, although coverage of at least one ANC visit is almost universal at 95% , there was growing decline in the recommended four ANC visits from 130,153 in 2010/2011 to 96,242 visits in 2011/2012 [6,9]. The decline in four ANC visits represents a concern for stakeholders in maternal and child health and also formed the backdrop against which this study was conducted to understand this decline and address barriers to accessing the recommended ANC services in the country.

### 1.1 Pregnancy, Child Birth and Male Involvement

Pregnancy creates a lot of physical, mental, social and emotional demands on the women wellbeing immediately before (antenatal), during pregnancy/delivery (natal) and after childbirth (post-natal) [10,11]. It is therefore critical that promotion of essential pregnancy care among men partners and other family members is promoted early to enable male partners and family members understand and appreciate the discomfort and tiredness that comes along with pregnancy. These could in turn result into appropriate support to a pregnant woman from the family members including the male partner [11,12] to develop birth preparedness and readiness plan in the event of pregnancy or childbirth complications leading to better pregnancy outcome [13]. Complications that arise during pregnancy and childbirth are leading causes of maternal death and disability in developing countries yet these complications are preventable [14,15]. These complications, which can occur at any time without signs, require prompt and timely access to obstetric services. Immediate and effective care before, during and after delivery can make the difference between life and death for women [16,17]. Therefore, pregnancy care if sought in time can prevent adverse outcomes as shown by evidence that the well-being of mother and baby depends on the pregnancy care that a mother receives during her pregnancy [8,18].

Over the years, maternal health issues have often been viewed as a gender issue. This can influence policy, programmes and practices on the way men may get involved in maternal health care [19]. Most of the interventions have aimed

at women empowerment, increasing female autonomy and their decision-making powers. Several studies [20,21] argue that increasing women autonomy alone has not always been associated with increased utilisation of maternal health services. In sub-Saharan Africa, a husband at antenatal clinic is rare in many communities and it is unthinkable to find men accompanying with their partners during ANC and delivery [15,22] .Yet in that socio-cultural context, men still wield a lot of power in decision-making in the family [23]. The failure to incorporate men in maternal health promotion, prevention and care programs by policy makers, program planners and implementers of maternal health services has had a serious impact on the health of women, and the success of programmes [24]. This is inspite of the Cairo International Conference on Population and Development (ICPD) 1994, and the Beijing World Conference for Women in 1995, which argued that men should be encouraged to participate in maternal and reproductive health [25].

Men have been identified as key to reducing maternal mortality and improving maternal health in developing countries [8, 26]. Involvement of men in maternal health care has been described as a process of social and behavioral change that is needed for men to play more responsible roles in maternal health care with the purpose of ensuring women's and children's well and accelerate the progress towards the achievement of the millennium development goal 5 [27]. Another study conducted in Kenya found that husbands greatly influence women's decisions to use reproductive health services such as family planning [28,34]. Furthermore, because of the role men play in decision making in the family, some researchers suggest that male involvement is a very significant factor to consider in finding a solution to the three main factors responsible for many of the maternal death: the delay in decision-making to refer patient a health facility to receive care, delay in reaching the service delivery point due to lack of transport and delay in receiving care at the facility [29,30-33]. Male partner involvement among other factors can significantly influence the first two delays. The decision to seek care in some homes is made by the man or requires the man's approval since majority of women depend on their male partners for funds to access healthcare [34,35].

Male partner involvement is critical factor which cannot be ignored in the quest for improvement in maternal health [36].

## 1.2 Antenatal Care

Like family planning, antenatal care (ANC) is one of the pillars of safe motherhood and an important determinant of safe delivery [37,38]. Antenatal care (ANC) is the provision of essential care of pregnant women to ensure safe delivery including postnatal care and treatment of complications of mother and newborn [38]. ANC is also an opportunity to promote the use of skilled attendance at birth and healthy behavior such as breastfeeding, early postnatal care and planning for optimal pregnancy spacing. Although there is no clear evidence on whether ANC visits directly reduce the MMR [8,39], it is still recommended that ANC visits should start at the beginning of pregnancy [10]. ANC during pregnancy appears to have a positive impact on the utilization of postnatal healthcare services [8, 40]. Therefore, deliberate and active participation of male members is the need of every household to ensure better maternal healthcare [40].

In Uganda, despite of health facilities being in a radius of five kilometers in many districts, women continue to report late for ANC and deliver outside the health facilities [41]. Previous studies in Uganda [11,42] have shown that most women attend ANC only once instead of the recommended minimum of four times, and never return for delivery. This has been attributed to a number of factors, the notable one among many is husbands deciding when and where a woman is to get ANC and delivery care. In a further demonstration that male dominance affect utilisation of ANC services and delivery care, a Ugandan study showed that some pregnant women dropped out when asked by the healthcare providers to come with their partners during the next ANC visit [41].

## 1.3 Male Involvement and Perceptions on ANC

The term "male involvement" is used in this context to refer to men having knowledge of and participating in antenatal care. That is, acting together with women as partners and supporting decisions and activities that will improve women and child health outcomes [43,44]. In most communities within sub-Saharan Africa, pregnancy and childbirth are generally viewed as exclusively a woman's responsibility. A male companion at antenatal care is rare and in many communities, it is unthinkable to find male companions accompanying a woman to the

labour room during delivery [45]. However, men have social and economic power, especially in Africa, and have tremendous control over their partners. They decide the timing and conditions of sexual relations, family size, and whether their spouse will utilize available health care services. Hence this situation makes male partner involvement critical if improvement in maternal health and reduction of maternal morbidity and mortality is to be realized [31,33].

### 1.4 Men's Role and Benefits of Male Involvement in ANC

Male involvement in maternal health has been recognized as a promising strategy in improving maternal and child health outcomes. In addition, because of the role men play in decision making in the family, some researchers suggest that male involvement is a very significant factor to consider in finding a solution to the three main factors responsible for many of the maternal death: 1) the delay in decision-making to refer the patients to health facility for treatment; 2) lack of transport incase of obstetric complications; and 3) delay in receiving treatment within the health care facility, which is sometimes related to covering the costs associated to such emergencies [18,46,47].

Although there is a growing body of evidence on factors positively influencing maternal and child health outcomes including male involvement, some information gaps were noted. For example there is a gap in knowledge on comprehensive determinants of male involvement. Moreover a number of the studies conducted focused on the perspectives of experts like health workers and females but not males as primary participants. Yet some studies [48] highlight the possibility of bias for example by arguing that women's memories and their reports of their husband's participation in their pregnancy could be just a reflection of their feelings about the quality of their relationships. Furthermore, the divergence in male involvement findings by different studies can be attributed to using different involvement indexes and not the Focused Antenatal Clinic (FANC) guidelines by the WHO which recommends a minimum of four visits for all pregnant women, ideally accompanied by their partners. This study was conducted to address these gaps in the literature; men were recruited as primary study participants and WHO guidelines invoked to determine the involvement index.

### 1.5 Study Aim and Objectives

The study goal was to assess determinants of male partner involvement in antenatal care in Makindye with a view to contributing to improved maternal health outcomes.

### 1.6 Specific Objectives

1. To ascertain the proportion of male partners who are consistently involved in ANC services for their spouses.
2. To assess existing knowledge, attitudes and practices (KAP) on male involvement in ANC.
3. To identify social-demographic factors influencing male involvement in ANC.
4. To establish health system factors affecting male involvement in ANC.

## 2. MATERIALS AND METHODS

The study was carried out in Makindye sub-county, Wakiso district in Central Uganda. Makindye is a peri- urban community with a total population of about 284,067; of these 133,079 (46.8%) are male and 150, 98 (53.2%) females. Baganda are the predominant ethnic group and major occupations are trading, fishing and civil service – mostly done by men. Makindye has a combination of both public and private health facilities; male involvement in maternal and child health in this area was notably low.

This was a community-based descriptive cross-sectional study using both quantitative and qualitative approaches between August and October 2015. The number of participants recruited was 405 (384 males and 21 key informants); the sample size was calculated using Kish and Leslie formula (1996) formula $n=Z2Pq/d2$. A multistage random sampling technique was used for the selection of male respondents while key informants were purposively selected. The inclusion criteria was married or cohabiting males aged 18-49 years whose spouse had given birth to at least one child and of less than two year of age. In terms of study variables male partner involvement in ANC was the outcome/dependent variable while the independent variables were grouped as socio demographic characteristics; male perception and involvement in antenatal care as well as health facility factors. Using an interviewer-administered questionnaire, data were collected from men on: social demographic variables, existing knowledge, attitude and perceptions,

and health system factors. Key informants (10 males and 11 females) with knowledge and responsibilities regarding ANC services as well as community dynamics were asked questions to help explore community perceptions, cultural norms and practices – this information was obtained using key informant interview guides.

Quantitative data were edited and entered in EPIDATA to ensure accuracy in data entry and later exported to SPSS version 21 for analysis**.** Data was then analysed at univariate and bivariate levels using SPSS version 21. At univariate level, frequency and percentage distributions were used to present selected demographic characteristics of the respondents and in situations of back up analysis following relational analysis. At this level, the independent variables were cross tabulated with the dependent variable so as to investigate any association that existed between them. The chi-square and p-values were used while presenting cross tabulations (contingency tables) results to show statistical relationships between the dependent variable and the independent variables statistically while Regression Odd Ratios were used to display the magnitude of associations within comparative analysis. The computed chi-square was compared with the critical value 0.05 level of significance at 95% confidence interval, a relationship between the independent and dependent variables that resulted to a critical p value less than 0.05 was interpreted as being significant. Qualitative data was recorded, transcribed, coded and analysed thematically.

Ethical clearance was sought from the Ethics Committee of Uganda Christian University. Clearance and approval to conduct the study was also obtained from Wakiso District Local Government Headquarters and from the District Health Officer. Community entry was done with the help of local council leaders. Participation was voluntary with written informed consent obtained from all study participants. Interviews were conducted in a private location and participants were identified by codes and pseudonyms instead of their actual names.

## 3. RESULTS

### 3.1 Socio-Demographic Characteristics of the Study Participants

Table 1 presents the socio-demographic characteristics of the primary study participants.

**Table 1. Respondents socio-demographic characteristics**

| Category | Frequency (N=384) | Percentage (100%) |
|---|---|---|
| **Age in complete years** | | |
| 18-19 | 2 | 0.5 |
| 20-29 | 168 | 43.8 |
| 30-39 | 149 | 38.8 |
| 40-49 | 65 | 16.9 |
| **Marital status** | | |
| Single | 20 | 5.2 |
| Married | 253 | 65.9 |
| Widowed | 2 | 0.5 |
| Cohabiting | 99 | 25.8 |
| Divorced | 10 | 2.6 |
| **Religion** | | |
| Christian | 299 | 77.9 |
| Islam | 79 | 20.6 |
| Other | 6 | 1.6 |
| **Occupation** | | |
| Unemployed | 85 | 22.1 |
| Private sector | 257 | 67.0 |
| Government | 42 | 10.9 |
| **Monthly income** | | |
| <100,000 | 74 | 19.3 |
| 100,000-300,000 | 157 | 40.9 |
| 300,000-600,000 | 109 | 28.4 |
| >600,000 | 44 | 11.4 |
| **Education** | | |
| Primary and below | 169 | 44.0 |
| Secondary | 111 | 29.2 |
| Tertiary | 104 | 27.0 |

Of the 384 study participants, majority (43.8%) were aged between 20 years and 29 years; 38.8% aged between 30 years and 39 years, 0.5% (2) aged between 18 years and 19 years. Majority (65.9%) were married, 25.8% were cohabiting while 5.2% were single. Two hundred ninety-nine (78.1%) were Christians, 20.6% Islamic while 1.3% accounted for those that belong to other religions. Over half (67.0%) were employed under the private sector, 10.7% under the government sector and 22% were unemployed. Majority (40.9%) earned between 100,000 and 300,000 monthly. 19.3% earned less than 100,000 monthly while 11.4% earned above 600,000. Education attainment was generally low, majority (44.0%) were of primary level, 29.2% were of Secondary level while 27.0% had attained tertiary level.

### 3.2 Level of Male Involvement in ANC

The study showed that 6% of male partners were found to be consistently involved while 94.0%

were not consistently involved in ANC. This portrays a general low male involvement in ANC.

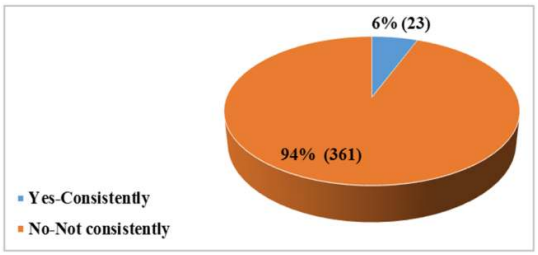


**Fig. 1. Proportion of males who are consistently involved in antenatal care**

Participants put forward many reasons to accompany wives to ANC clinic, yet not all reasons were positive. Majority of men had an undercurrent of distrust on their wives for fear to disclose important information to them. Most men reported that women typically chose to tell their mothers in law, co-wives, friends or trusted female neighbors before their husbands. Most men mentioned that disclosure of pregnancy was rarely made to them in the first instance, despite some men's wish to be the first to know:

> *My wife never told me that she was pregnant I just saw her stomach growing big, that's when I guessed that she was pregnant. So when I asked her what was happening since she was gaining weight, she disclosed to me that she was pregnant. Therefore if she can fail to disclose to me at the beginning that she is pregnant, how do I then trust her with all the information from health facility?*
>
> (David, 34 years)

On a more positive note, some men accompanied their partners because of the promotion of voluntary counseling and testing for HIV, PMTCT, provision of free bed nets to prevent malaria, blood pressure measurements, and blood group testing:

> *… if we both go to the clinic, we can both be tested of HIV and get to know our status … if one person is positive and another negative then we can be advised on what to do by heath workers..*
>
> (Alex, 31 years)

### 3.3 Male's Inconsistent Involvement

Findings revealed that 94.0% of male partners did not consistently get involved in ANC, ensuring they attend all the four visits; they had the following reasons for not being consistently involved in antenatal as indicated in the Table 2.

**Table 2. Reasons for male partner's inconsistent involvement in ANC**

| Response | No | % |
|---|---|---|
| Busy | 99 | 27.4% |
| Not my responsibility | 71 | 19.7% |
| Did not have money | 22 | 6.1% |
| My mother was present | 9 | 2.5% |
| Lack of privacy | 18 | 5.0% |
| Poor communication from health staff | 12 | 3.3% |
| Long waiting time | 53 | 14.7% |
| Limited space to accommodate Women & partners | 11 | 3.0% |
| Dominance of ANC by women | 28 | 7.8% |
| Inflexibility of ANC time | 38 | 10.5% |

The patriarchal role of most men was reflected in their identification of being busy (27.8%) hence the inconsistent involvement in ANC a claim that was disputed by other study participants as shown in the excerpt below:

> *…actually, men are never too busy not to accompany their partners to ANC they just pretend to be so. I wouldn't want to blame them a lot, but as a head of household and provider, men's focus is on economic activity which is more important for them to concentrate on at the time of women's pregnancy than accompanying her to ANC the whole day. Some men also fear to be subjected to HIV testing*
>
> (Female KI, 3)

Table 3 presents further data on male perceptions.

As shown in Table 3, males' inconsistent participation in ANC is increased by: Not living together with their wives during their pregnancy (OR-3.474, p-0.012); Family members living with male partners and their wives (OR-4.122, p-0.001); Family members influencing male partner's decision to get involved in ANC (OR-5.421, p-0.001); Failure to make plans for emergency situations during pregnancy (OR-4.654, p-0.035), Having unplanned pregnancies (OR-8.935, p-0.001); Peers influence' that is usually against involvement (OR-3.614, p-0.036); Negative cultural influence (OR-5.335, p-0.028) that regards ANC male involvement as women's full responsibility; and Limited male partners' involvement in making decision on where wife goes for ANC (4.245, p-0.009).

**Table 3. Men's justifications and perceptions on ANC attendance**

| For limited Male Involvement | | | |
|---|---|---|---|
| **Perceptions** | **Odds** | **[95% C.I]** | **p-value** |
| Male partners living together with wife partner at the time of her pregnancy | 0.231<br>3.474 | 1.684-3.854 | 0.012* |
| Male partners not living together with wife partner at the time of her pregnancy | | | |
| Family members living with male partners and wife | 4.122 | 1.311-4.998 | 0.001* |
| Family members not living with male partners and wife | 1.034 | | |
| Family members influence male partner's decision not to get involved in ANC | 5.421 | 2.134-7.125 | 0.001* |
| Family members influence male partner's decision to get involved in ANC | 1.058 | | |
| Who influences male partners' decision to get involved in ANC | 2.125 | 0.471-2.341 | 0.894 |
| Mother of the wife | 3.124 | 0.842-4.145 | 0.021* |
| Male partners mother | 1.012 | 2.141-3.991 | 0.056 |
| Siblings | | | |
| Joint plans for emergency situations during the pregnancy made | 2.101<br>4.654 | 1.242-7.214 | 0.035* |
| No joint plans made for emergency situations during pregnancy | | | |
| Pregnancy planned | 0.147 | | |
| Pregnancy not planned | 8.935 | 5.833-21.845 | 0.001* |
| Culture allows men to accompany women to ANC | 1.001 | | |
| Culture does not allow men to accompany women to ANC | 5.335 | 4.771-15.585 | 0.028* |
| Peers can influence male partner's involvement in ANC | 3.614 | 2.110-11.122 | 0.036* |
| Peers cannot influence male partner's involvement in ANC | 1.897 | | |
| Males involved in decision on where wife goes for ANC | 1.012 | | |
| Males not involved in decision on where wife goes for ANC | 4.245 | 3.844-13.254 | 0.009 |

### 3.4 Socio-demographic, Economic Factors and Male Involvement in ANC

Different socio-demographic factors were considered for impact on male partner involvement and Table 4 provides an overview.

The results from Table 4 show that education (p=0.000), Monthly income earnings (p=0.0342) Marital status, (p=0.001) age (p=0.044) had a significant relationship with the male partner involvement in antenatal care. Occupation has no association (p=0.622 with male involvement to ANC. Therefore, higher attainment of education improved involvement in ANC among male partners.

Monthly income earnings had a significant (p=0.0342) relationship with the involvement of male partners in antenatal care with majority (70.0%) of participants who were not consistently involved in ANC claiming their monthly incomes were less than 100, 000 shillings, only 6.6% were earning above 600,000 shillings.

Table 5 showed that male partner's involvement decreased more by Odds of 5.144 for primary graduates and 3.143 for secondary graduates. Involvement in ANC by income earnings indicate that chances reduced more for male partners earnings less than 100,000 shillings (OR-3.211, p0.023) and 100,000-300,000 shillings (OR-2.511, p-0.041). Considering marital status, chances of male partner involvement reduced more among single people (3.012, p-0.001) compared to the married and those cohabiting.

### 3.5 Health System Factors and Male Involvement

A review of the relationship between health factors system and male involvement in ANC showed that attitude of staff, (p=0.001), Waiting time (p-0.001), Costs of antenatal services (P-0.003) had a significant relationship with male partner involvement in antenatal care.

**Table 4. Socio-demographic factors and male involvement in ANC care**

| | | Male involvement in ANC | | x2 | p-value |
|---|---|---|---|---|---|
| | | Consistently involved 23(6%) | Not consistently involved 61(94%) | | |
| Education | Primary and below | 0(0.0) | 280(77.6) | 66.317 | 0.001 |
| | Secondary | 10(43.5) | 60(15.0) | | |
| | Tertiary | 13(65.5) | 27(7.5) | | |
| Monthly income | <100,000 | 13(56.5) | 257(70.0) | 9.342 | 0.0342 |
| | 100,000-300,000 | 9(39.1) | 70(19.4) | | |
| | 300,000-600,000 | 1(4.3) | 45(24.3) | | |
| | >600,000 | 0(0.0) | 24(6.6) | | |
| Occupation | Unemployed | 2(8.7) | 111(30.7) | 0.949 | 0.622 |
| | Private sector | 10(43.5) | 151(41.8) | | |
| | Government | 11(47.8) | 99(47.8) | | |
| Marital status | Single | 0(0.0) | 20(5.5) | 23.973 | 0.001 |
| | Married | 15(65.2) | 239(66.2) | | |
| | Widowed | 0(0.0) | 2(0.6) | | |
| | Cohabiting | 8(34.8) | 90(24.9) | | |
| | Divorced | 0(0.0) | 10(2.8) | | |
| Age | 18-19 | 2(8.7) | 0(0.0) | 21.561 | 0.044 |
| | 20-29 | 5(21.7) | 163(45.2) | | |
| | 30-39 | 7(30.4) | 142(39.3) | | |
| | 40-49 | 9(39.1) | 56(15.5) | | |

**Table 5. Bivariate analysis of socio demographic factors and MI**

| Variable | B | S.E. | Wald | Sig. | Exp(B) | 95% C. I. for EXP(B) | |
|---|---|---|---|---|---|---|---|
| | | | | | | Lower | Upper |
| **Education level** | | | | | | | |
| Primary and below | 2.144 | 1.231 | 4.104 | 0.014 | 5.141 | .514 | 9.614 |
| Secondary | 2.521 | 1.664 | 1.542 | 0.041 | 3.145 | .524 | 7.218 |
| Tertiary | -1.245 | 1.412 | 1.447 | 0.897 | 0.785 | 0.174 | 0.124 |
| **Income earnings** | | | | | | | |
| <100,000 | 1.104 | 1.763 | 1.424 | 0.023 | 3.122 | .004 | 3.866 |
| 100,000-300,000 | 2.681 | 2.090 | 1.645 | 0.041 | 2.511 | .243 | 2.030 |
| 300,000-600,000 | -2.104 | 1.763 | 1.424 | 0.238 | .122 | .004 | 3.866 |
| >600,000 | 2.681 | 2.090 | 1.688 | 0.412 | 7.598 | .243 | 3.110 |
| **Marital status** | | | | | | | |
| Single | 2.314 | 0.951 | 3.012 | 0.001 | 3.012 | 0.012 | 0.974 |
| Married | 0.511 | 0.951 | 3.012 | 0.671 | 0.874 | 0.031 | 1.141 |
| Widowed | 1.817 | 1.112 | .187 | 0.056 | 1.844 | 0.042 | 0.987 |
| Cohabiting | 1.232 | 0.888 | 3.012 | 0.874 | 1.984 | 0.013 | 4.274 |

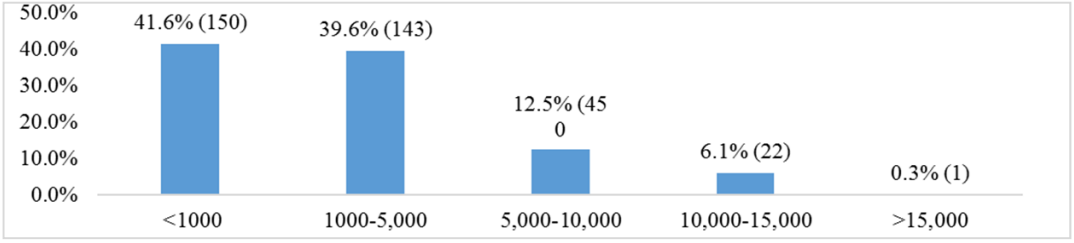


**Fig. 3. Consistency of male participation with the cost of ANC**

**Table 6. Health system factors and MI**

| | | Number of male partners consistently involved in all ANC visits | | x2 | P |
|---|---|---|---|---|---|
| | | Yes=23(6%) | No=361(94%) | | |
| Attitude of health workers | Friendly | 13(56.5) | 50(13.9) | 53.417 | 0.001 |
| | Unfriendly | 10(43.5) | 221(61.2) | | |
| | Indifferent | 0(0.0) | 90(24.9) | | |
| Waiting time | Reasonable | 10(43.5) | 50(13.9) | 32.717 | 0.001 |
| | Too long | 13(56.5) | 311(86.1) | | |
| Accessibility of health facility | Yes | 14(73.2) | 96(51.9) | 1.670 | 0.081 |
| | No | 9(26.8) | 89(48.1) | | |
| Costs of service | Free | 13(56.5) | 37(10.1) | 24.24 | 0.003 |
| | Not free | 10(43.5) | 324(89.8) | | |
| Availability of drugs and test kits | Yes | 134(67.7) | 77(41.6) | 1.243 | 0.113 |
| | No | 64(32.3) | 108(58.4) | | |
| Comfort able with gender of health workers | Comfortable | 11(67.7) | 40(11.1) | 18.243 | 0.048 |
| | Not comfortable | 12(32.3) | 321(88.9) | | |

Availability of drugs and test kits had no relationship with male partner involvement in antenatal care as per the Table above (p=0.113) implying that whether kits were available or not, males would not consistently take part in antenatal care. The gender of health workers influenced male partner involvement in ANC, 88.9% of males who did not consistently adhere to ANC involvement were not comfortable with the distribution of staff in form of gender where majority (92.2%) of study participants claimed that most staff were females (Fig. 4).

A bivariate logistic regression between selected significant factors listed in Table 7 shows that male partner's involvement decreased more by Odds of 6.245 and 5.512 due to unfriendliness and indifference of health workers respectively. Further, limited participation in ANC decreased by odds of 7.598 due too long waiting times as shown below.

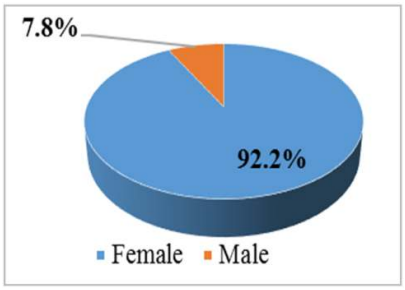


**Fig. 4. Distribution of health workers by gender**

**Table 7. Bivariate analysis of health system factors and MI**

| Variable | B | S.E. | Wald | Sig. | Exp(B) | 95% C.I. for EXP(B) | |
|---|---|---|---|---|---|---|---|
| | | | | | | Lower | Upper |
| **Attitude of health workers** | | | | | | | |
| Friendly | -1.143 | 1.241 | 3.1424 | 0.332 | 0.0341 | .214 | 5.614 |
| Unfriendly | 4.514 | 1.154 | 1.213 | 0.021 | 6.245 | .524 | 11.21 |
| Indifferent | 3.142 | 1.888 | 2.102 | 0.039 | 5.512 | 0.177 | 6.124 |
| **Waiting time** | | | | | | | |
| Reasonable | -2.104 | 1.763 | 1.424 | 0.233 | .122 | .004 | 3.866 |
| Too long | 2.681 | 2.090 | 1.645 | 0.020 | 7.598 | .243 | 18.030 |
| **Cost of service** | | | | | | | |
| Free | 1.621 | 1.126 | .185 | 0.049 | 1.915 | .180 | 11.242 |
| Not free | 2.314 | 0.951 | 3.012 | 0.001 | 4.211 | .012 | 4.140 |
| **Comfort with sex of health personnel** | | | | | | | |
| Male sex | 1.817 | 1.112 | .187 | .0568 | 1.844 | .0142 | 4.123 |
| Female Sex | 2.214 | 0.888 | 3.012 | 0.033 | 4.601 | 0.013 | 4.274 |

Further, male consistent involvement is reduced by higher costs involved in ANC as seen by odds of 4.211 while dominance of female staff in the antenatal health facilities reduced the chances of male consistent involvement by odds of 4.601.

## 4. DISCUSSION

The influence of men on women's sexual and reproductive health outcomes have been increasingly recognized since the International Conference on Population and Development in Cairo in 1994 [34]. Better pregnancy outcomes have been shown when men are directly involved in maternal health care through ANC attendance and pregnancy support [8,49]. However, with poor rates of both ANC and hospital based delivery care it is important to find ways of improving the current situation.

### 4.1 Level of Male Involvement

In line with previous research this study also found MI to be very low (6%). A number of barriers were highlighted including male's busy schedules, the culturally socialized role of men which perceives pregnancy and childbirth birth as majorly a woman's responsibility and long waiting time at the health facilities. The findings of this study are to some extent similar with research in Mbale district [44], Uganda which found that only 5% of the men accompanied their spouses to the antenatal clinic. In contrast, a study [13] in Kabale, Uganda, found 42.9% of the women had been accompanied by their husbands to the antenatal clinic while Tweheyo et al. [38] in Gulu district, Northern Uganda also found a high proportion of the men (65.4%) making at least one visit to the antenatal clinic. There is no national statistics showing the level of male involvement in ANC or maternal care services. Therefore the level of male involvement in ANC and maternal care services at national level would be an area worthy of further research.

Different reasons were given for limited male involvement in ANC, the three most outstanding being busy or incompatible schedules (27.8%), the perception than ANC is not a man's responsibility (19.7%) and long waiting times at health facilities (14.7%). Other males expressed concerns over limited privacy with most ANC health education and other activities being conducted in an open space, making it difficult for males to express themselves. This corroborates with studies by Dharma and Bhatt [15] and Mullany [30]. The narratives of many men had an undercurrent of mistrust from their partners e.g. wives would fail to disclose important information to them, or distort the truth. As a consequence some men could not rely on their wives to seek the best healthcare for themselves. This is in agreement with a study conducted in South Africa which found out that women did not tell their husbands what had occurred at the clinic, though; there was no sense of mistrust conveyed in this context [50]. On a more positive note, some men felt that promotion of voluntary counseling and testing for HIV,malaria testing, free distribution of mosquito nets, weight monitoring and their involvement in PMTCT were some of the a reasons for going to the clinic, a finding consistent with another Ugandan [38]. There were no taboos that prohibited men from getting involved but there were concerns about peers' negative influence; this finding is consistent with findings from Nanjala and Wamalwa [50] and Byamugisha et al. [42].

### 4.2 Socio-demographic Factors

Education had a significant (p=0.000) relationship with the male partner involvement in antenatal care. Studies suggest that a man's level of education, may affect their involvement in their partner's antenatal care [13,51,52]. The older and educated men are more likely to know the danger signs than the younger and uneducated ones and more likely to assist their partners in making a birth plan [53]. Monthly income earnings had a significant (p=0.0342) relationship with the involvement of male partners in antenatal care. There was limited involvement in ANC reasons attached to high costs of antenatal [18,46,47]. The same studies further posit that delays in receiving treatment within the health care facility were common and were sometimes related to covering the costs associated with ANC. Occupation had no association (p=0.622) with male partner involvement in antenatal care. However in contrast, the study found that some men took a passive role of being the financiers as opposed to the active role of accompanying their partners to ANC. Culture seems to determine the passive role while elitism (health workers, professional bodies, activists, etc) emphasize active male involvement in ANC.

Married males (p=0.001) are more likely to be involved in their partner's maternity care. Such men feel a sense of responsibility towards their partners [38] also confirms similar findings where

they found men who were formally married to be more likely to attend antenatal clinic with their partners compared with those who were not formally married. Age had an association with (p=0.044) with male partner participation in antenatal care. Involvement in ANC increased with age, among male partners who had limited involvement for example, none was aged between 18 years and 19 years while 45.2% were aged 20 years and 29 years. This concurs with another study that suggested that older men are more likely to know the danger signs than the younger and uneducated ones and more likely to assist their partners in making a birth plan as earlier stated [51].

### 4.3 Health System Factors and Male Partner Involvement in Antenatal Care

Attitude of health workers and the waiting time at the health facility had a significant ($p<0.05$) relationship with male partner involvement in antenatal care. A review of males who were usually not involved in ANC shows that 61.2% were not comfortable with health workers unfriendly attitude, 24.9% said the health workers were indifferent while only 13.9% said the staffs were friendly. The findings suggest health workers' attitude discouraged males from being involved in ANC. Men are never treated as husbands to their wives whenever they accompany their partners to a health facility, Men seem to share their experiences with their colleagues, and so even those who have never visited the health facility may be discouraged by the experiences of their colleagues. In a meta-synthesis of fathers" encounters with pregnancy, birth and maternity, [43] reported that some men felt unwelcome when they managed to make time to attend antenatal clinic.

Furthermore, the lack of adequate space and privacy makes some men embarrassed to participate in ANC while mandatory HIV/AIDs testing of men can be a barrier to male involvement to ANC.

## 5. CONCLUSION AND RECOMMENDA-TIONS

The findings of this study show a number of gaps at individual, household, community and even macro levels that have significantly contributed to not only low male involvement in ANC but also related poor maternal and child health outcomes. These gaps can be addressed; however different actions are required from various stakeholders to address them as shown in Table 8 overleaf.

**Table 8. Summary recommendation matrix based on study findings**

| Level | Gap/ MI Barrier | Recommendation | Who should be responsible? | Timelines |
|---|---|---|---|---|
| **Individual /household level** | -Fear to find out HIV/ sero status<br>-Early girl marriages | • Continued sensitisation, assurance & support<br>• Emphasis on information about positive living & EMTCT incase someone tests positive<br>• Girls should be encourage to keep at school | • Healthworkers<br>• Spouses<br>• Community leaders | Immediate and on-going |
| **Community** | -Cultural perceptions that ANC is a woman's responsibility<br>-Peer pressure and influence<br>-Lack of community networks | • The use of Peer male champions / ambassadors showing support for their wives.<br>• Establishment of community male and female health clubs and networks that will promote active participation. | • Males<br>• Political, religious and local council leaders | Immediate and on-going |
| **Health** | -Long queues | • Incentives for males | • Government | Mid term |

| Level | Gap/ MI Barrier | Recommendation | Who should be responsible? | Timelines |
|---|---|---|---|---|
| **system** | -Female staff<br>-Privacy issues<br>-Limited infrastructure<br>-Poor customer care and interpersonal communication skills<br>-Lack of continuous research<br>-Failure to have a robust HIMS | who show up e.g. quick attendance to them<br>• Involving more male health workers in health education<br>• Health system strengthening<br>• Establish a functioning monitoring and evaluation system<br>• Sending invitation letters to male partners<br>• Train more male health workers to work at ANC<br>• Train staffs on customer care and interpersonal communication skills<br>• Support research and establish robust monitoring and evaluation system<br>• Establishment of a robust HIMS | (ministry of education and health)<br>• Development partners, hospital administration | |
| **National** | -Lack of legislation<br>-Lack of political will to support and fund research | • Support and fund research<br>• Have a legislation that compel men to be involved | • Government<br>• NGOs<br>• Policy makers | Long term |

## 6. STUDY LIMITATIONS AND SUGGESTIONS FOR FURTHER RESEARCH

This study focused on determinants of male involvement in ANC within Wakiso district, and the findings have shed some light on this area. However there are still information gaps on related areas in reproductive, maternal, newborn and child health (RMNCH) which need to be investigated further. For example further research is needed into strategies for, and the effect of, including men in RMNCH. Uganda is a multi-ethnic country with diverse sociocultural practices, therefore while findings on male involvement in Wakiso are useful; studies covering larger geographical areas (at national and global levels) would add a lot of value. Study findings revealed the HIV/AIDS mandatory testing currently operational in ANC practice at Ugandan health facilities to be a major barrier for male involvement by creating inherent fear and resistance among males. Further research on the relationship or effect of HIV testing at ANC with male involvement would be useful in this regard.

## CONSENT

The authors declare that written informed consent was obtained from the study participants.

## ETHICAL APPROVAL

The authors hereby declare that ethical approval for this study was cleared by the appropriate ethics committee and have therefore been performed in accordance with recommended ethical standards.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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