KNOWLEDGE AND ATTITUDE OF MEN TOWARDS RISK FACTORS INFLUENCING MATERNAL MORTALITY IN MAGUME COMMUNITY, ZARIA

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ABSTRACT

Background: Most studies related to maternal mortality have focused mainly on direct clinical causes. However, it is imperative to look at the importance of tackling background predisposing factors in a bid to reducing deaths occurring in this vulnerable group. Innovative and effective options towards preventing as well as reducing maternal deaths must include active participation of men, who more often than not are not knowledgeable about these risk factors. Aims: To assess the knowledge and attitude of men towards risk factors influencing maternal mortality in Magume Community, in Zaria LGA. Methods: A descriptive cross-sectional study was carried out in 2016 using a pretested semi-structured interviewer-administered questionnaire. A total of 170 respondents were sampled using a multistage sampling technique. Data were analysed based on descriptive statistics, chi-square and Fisher's exact test using SPSS version 21. The level of statistical significance was set at $p<0.05$. The results were presented using tables and charts. Results: The mean age of the respondents was 38($\pm$11.2) years. Knowledge scores show that approximately 46% of the respondents had good knowledge, while 40% had poor knowledge and 14% had fair knowledge. Lack of ANC services during pregnancy was the most commonly identified (93.1%) maternal mortality risk factor and lack of family planning was the least identified (34.3%). Attitude to maternal mortality risk factors was negative in half (50.9%) of the respondents. There was a statistically significant relationship between educational level; occupation with both knowledge and attitude scores. Conclusion: This cross-sectional study has highlighted the need for increased male involvement and participation in maternal health issues. Interventions such as health education and community mobilization that aims to educate men on risk factors and danger signs associated with poor maternal health outcomes should be carried out in this area.

Keywords: male involvement, maternal mortality, maternal health, Magume, Zaria

INTRODUCTION

Maternal mortality is a public health problem of global importance and a marker of social inequality that impacts on the health of women in sub-saharan Africa and South Asia. It is disproportionately higher in low income, developing countries than in the developed world.[1] In sub-saharan Africa, a woman or girl has a one in 36 chance of dying during pregnancy or childbirth, whereas in developed countries this risk is reduced to one in 4,900, representing one of the largest gaps between low income

and high income countries of any health indicator.[2] Maternal death is "death during pregnancy, childbirth and up to 42 days after the termination of pregnancy, due to causes associated with it or aggravated by pregnancy and its management, which is not due to accidental or incidental causes".[3]

There have been a lot of concerted efforts globally to improve maternal health outcomes in order to achieve the sustainable development goal of reducing the global maternal mortality ratio to less than 70 per 100,000 live births.[1] The 1994 International Conference on Population Development in Cairo was one of the first international declarations to highlight the importance of involvement of men in reproductive health programs. Men impact women's reproductive health through their role as partners or fathers. Despite the significant roles males play in female health, there continues to be a lack of emphasis on male involvement in maternal health.[4] In sub-saharan Africa, maternal health issues such as pregnancy and childbirth are seen as a solely female area and as such it is rare to see male participation in these areas.[5]

To bring about an effective and efficient strategy to reduce maternal mortality, all stakeholders must be involved. A study in Ibadan showed that the male respondents blamed maternal deaths on healthcare workers not being skilled enough, financial barriers, and failure to use family planning, emergency, antenatal, and delivery care services.[6] From a study carried out among men in India, results showed that men had poor knowledge on factors that affect maternal morbidity and there was a low level of female autonomy regarding decision making. This means a system of patriarchy is heavily embedded in the culture with women having little to no rights regarding their own

bodies.[6] Other studies have shown poor knowledge of maternal health issues among men resulting in poor health outcomes for females in those areas.[7, 8] In spite of poor knowledge, men control decision making on maternal health even in emergency situations.[6]

Changing and improving the way men are involved in reproductive health can have a positive impact on women's, men's, and children's health. Evidence also shows that men can prevent unintended pregnancies, reduce unmet need for family planning, avoid delays in seeking medical care and foster safe motherhood.[9] Partner involvement in pregnancy has been found to increase antenatal care 1.5 times. A maternity care model that encouraged husband's participation in their wives' antenatal and postnatal care found positive changes in knowledge, gender roles, and decision making. All these will ultimately result in reduced maternal morbidity and mortality.[10]

In Nigeria, where culture has been shown to be an important factor in relation to women's access to available reproductive health facilities, little data exists on men's view with regard to maternal deaths.[9] In view of the fact that men's knowledge and attitude towards maternal health is essential to reducing maternal mortality, it is imperative that further research is carried out to determine male perceptions of their role in maternal health and the types of care men may provide during pregnancy and childbirth. Intervening by implementing strategies that specifically target men will be best achieved if there is a qualitative assessment of risk awareness and identification of the socio-cultural and economic barriers to maternal health as seen by men themselves. This study

aims to determine the knowledge and attitude of men towards risk factors influencing maternal mortality.

MATERIALS AND METHODS

Study Setting
Magume is a cosmopolitan area located in the outskirts of Zaria City, the ancient town. It is a community under Tukur-Tukur ward of Zaria Local Government of Kaduna State. Magume has an estimated population of 4007 from the 2006 national census with a projected population of 5092. A considerable proportion of the population of Magume are businessmen and civil servants. The Hausas constitute the major ethnic group in the area. Other ethnic groups in the area include Yoruba, Nupe, and Kataf. The primary healthcare center that services the community is located in Tukur-Tukur. The major healthcare delivery centre is a private hospital. Services rendered include antenatal care, surgery, as well as medical consultation for adult and paediatric patients and laboratory investigations.

Study Design
A descriptive cross-sectional community based study was carried out to determine the knowledge and attitude of men towards risk factors influencing maternal mortality.

Study Population
The study population were married men aged 18 years and above.

Inclusion Criteria
All male residents of Magume community who have been married for at least a year.

Exclusion criteria
Male residents who are temporarily residing in Magume i.e. less than six months.

Sample Size Determination
The required sample size (n) is calculated using the formula $n = \dfrac{z^2 pq}{d^2}$

Where n = the minimum sample size,
z = the percentage point of the standard normal distribution curve, which the curve defines 95% confidence interval as 1.96.
p = the prevalence rate from previous study
q = complimentary probability i.e. 1-p
d = maximum sampling error allowed (precision) at 95% confidence limit i.e. 0.05

Prevalence rate (p) of 88% was obtained from a study conducted in Kano.

$$n = \frac{(1.96)^2 \times 0.88 \times 0.12}{0.05^2}$$

$$= 162$$

For population size which is less than

$$nf = n/1 + n/N$$

Where:
nf = required sample size
n = sample size for population size greater than 10,000
N = population size
Therefore,
Nf = 162 / 1 + 162 / 4007
nf = 156

However for accuracy and wider coverage and reflection of the study area , using a 10% attrition rate, 1/1-f where f = 10%,
= 1/1-0.1
= 1/0.9
= 1.11
$156 \times 1.11 = 173$
Calculated sample size was 173.

Sampling Technique
A multistage sampling technique was applied in this study.
Stage 1: One ward, Tukur-Tukur was selected out of the 13 wards in Zaria LGA using simple random sampling method by balloting.
Stage 2: Magume community was selected

out of the 4 communities that make up Tukur-Tukur ward using simple random sampling method.

Stage 3: Household numbering and household listing were done after which 173 households were selected using systematic sampling technique.

Stage 4: One eligible male respondent was selected from each of the selected households using simple random sampling by balloting.

Data collection tool and procedure

The tools for data collection were pretested, semi-structured interviewer-administered questionnaires administered to 173 respondents. The data collection was conducted by the researcher and 4 trained research assistants. The researcher supervised the overall data collection process and checked the filled questionnaires for consistency and completeness.

The questionnaire comprised of three sections that sought information on socio-demographic profile of the respondents, knowledge of maternal mortality causes and risk factors, attitude towards the aforementioned risk factors. The knowledge of respondents on causes and risk factors of maternal death was assessed using 19 questions, attitude with 5 questions from the questionnaire. Each correct response to the question scores one mark while incorrect response scores zero. Thereafter the sum of the scores was determined and the percentage scores was determined using the formula: Obtained score / Total score multiplied by 100. Based on this, respondents knowledge was graded good (scores above 70%), fair (scores between 50% and 70%) and poor (less than 50%).[12] Attitude of respondents was graded positive if they score 50% or more while a negative attitude represents a score of less than 50%.[13]

Data analysis

Data collected were coded, entered into the computer and analysed using statistical package for social sciences(SPSS, IBM Corporation USA) software version 21. Results were arranged and presented in tables, bar charts, or pie charts. Chi-square and Fisher's exact test were applied for the comparison of proportions. Statistical significance was set at $p<0.05$.

Ethical consideration

Approval to carry out this study was obtained from the Research and Ethics Committee of Ahmadu Bello University Teaching Hospital, Zaria. Permission to conduct the study was also sought from the Zaria Local Government Authority and the ward head. The study participants were informed about the purpose of the study and were also informed that they could voluntarily withdraw from the study at any time. Written consent was obtained from all the participants before the questionnaires were administered to them.
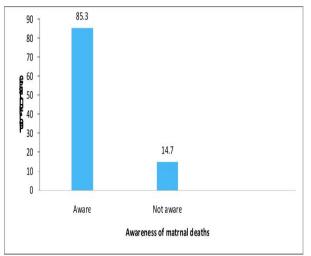
RESULTS

Figure 1: Respondents' awareness of maternal deaths (n=170)

Table 1: Socio-demographic characteristics of respondents (n=170)

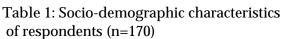| Variable	Frequency	Percent
Age		
20-29	51	30
30-39	61	35.9
40-49	34	20
50-59	16	9.4
60-69	8	4.7
Religion		
Islam	138	81.2
Christianity	32	18.8
Ethnicity		
Hausa	125	73.6
Fulani	26	15.3
Yoruba	6	3.5
Igbo	8	4.7
Others	5	2.9
Highest level of education		
None	27	15.9
Quranic only	21	12.4
Primary	16	9.3
Secondary	21	12.4
Tertiary	85	50.0
Occupation		
Civil servant	65	38.2
Trader/Businessman	47	27.7
Farmer	43	25.3
Others	15	8.8
Number of wives		
One	110	64.7
Two	46	27.1
Three	9	5.3
Four	5	2.9

Table 2: Proportion of respondents that correctly identified maternal mortality risk factors n=170

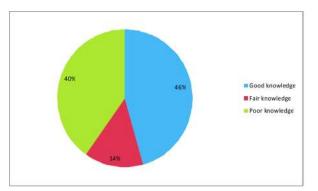| Risk factor	Frequency	Percent
Lack of ANC visit	158	92.9
Lack of PNC visit	90	52.9
Delivery at home	86	50.6
Poverty	112	65.8
Lack of family planning	58	34.1
Early marriage	72	42.4
Lack of education	114	67.1
High parity	67	39.4
Delay in recognizing pregnancy complications	106	62.4
Delay in deciding to seek care during pregnancy complications	120	70.6
Delay in transporting a woman to the hospital during pregnancy complications	156	91.8
Delay in receiving adequate and appropriate treatment at health facilities	98	57.7

Figure 3: Knowledge category of maternal mortality risk factors

Figure 2: Respondents' knowledge about the various causes of maternal deaths

Table 3: Respondents' attitude towards maternal mortality risk factors (n=170)

Statement	FREQUENCY (%)		
	Agree	Neutral	Disagree
Men should encourage ANC attendance	125 (73.5)	43 (25.3)	2 (1.2)
Men should encourage PNC attendance	105 (61.7)	19 (11.2)	46 (27.1)
Men should encourage hospital delivery	122 (71.8)	36 (21.1)	12 (7.1)
Men should encourage family planning	65 (38.5)	32 (18.7)	73 (42.8)
Early marriage should be discouraged	52 (30.6)	36 (21.2)	82 (48.2)

Table 4: Overall attitudes towards maternal mortality risk factors (n=170)

Attitude	Frequency	Percent
Positive	86	49.1
Negative	84	50.9

Table 5: Relationship between the highest level of education; age group; occupation of the respondents and knowledge score (n=170)

	Knowledge Score			
	Poor	Fair	Good	p-value
Highest level of education				
None	12	8	7	
Quranic	9	6	6	
Primary	13	2	1	0.024
Seconda	5	4	12	
Tertiary	33	18	34	
Age group				
20-29	26	10	15	
30-39	23	13	25	
40-49	15	8	11	0.782
50-59	6	5	5	
60-69	2	2	4	
Occupation				
Civil servant	25	12	28	
Farmer	15	15	13	
Trader	23	6	18	0.029
Others	6	8	1	

Table 6: Relationship between the highest level of education; age group; occupation of the respondents and attitude score (n=170)

	Attitude Score		
	Negative	Positive	p-value
Highest level of education			
None	19	8	
Quranic	12	9	
Primary	12	4	0.000
Secondary	6	15	
Tertiary	15	70	
Age group			
20-29	23	28	
30-39	21	40	
40-49	19	15	0.555
50-59	5	11	
60-69	3	5	
Occupation			
Civil servant	18	47	
Farmer	31	12	0.000
Trader	18	29	
Others	6	9	

A total of 173 questionnaires were administered to the respondents out of which 170 were completely filled, returned and analysed after validation (giving a response rate of 98.3%). Results obtained showed the mean age of the respondents to be 38(±11.2) years. The greatest

proportion of respondents fell within the 30 to 39 year age group. The Hausa ethnic group constituted (73.6%) of the respondents. Most of the respondents (64.7%) were married in a monogamous setting. Half of the respondents have attained tertiary education, with (38.2%) of them being civil servants Table 1.Majority of the respondents (85.3%) were aware of maternal deathsFig 1. Majority of the respondents (93.1%) mentioned hemorrhage as a major cause of maternal deaths. Less than half of the respondents were aware eclampsia was one of the major causes of maternal deaths Fig 2.Lack of ANC visit was the most frequent risk factor identified by the respondents (92.9%). High parity (39.4%) and lack of family planning (34.1%) were the least commonly identified risk factors Table 2.Approximately 46% of the respondents obtained scores that fell into the category of good knowledge, while 40% had poor knowledge and 14% had fair knowledge Fig 3.A large proportion of the men agreed that men should encourage ANC attendance, PNC, as well as hospital delivery. Many however had negative attitudes towards family planning and discouragement of early marriageTable 3.Overall attitude scores after grading all the questions showed that slightly half (50.9%) of the respondents obtained scores that fall into the category of negative attitude Table 4. There was a statistically significant relationship between highest level of education attained; occupation of the respondents and the knowledge score Table 5. There was a statistically significant relationship between highest level of education; occupation of the respondents and the attitude score.

Discussion

The socio-demographic characteristics of the respondents in this study are similar to a study carried out in Zaria on the knowledge and perceptions of the study participants on maternal health.[14] Majority of the respondents were Muslims; and of the Hausa ethnic group. This is in keeping with the fact that Hausa is the major ethnic group in northern Nigeria, where the study area is located. Islam as well is the most practiced religion in this part of the country.[15] Level of education was quite high as 62.4% have attained secondary or tertiary education which is also not

surprising as the Zaria is home to many tertiary institutions. About two-thirds of respondents were married in a monogamous setting, while one-third were in polygamous settings. This is because Islam, the dominant religion in the study area, permits the practice of polygamy.

Awareness of maternal deaths was high in the study population (85.3%), and majority of them perceived maternal deaths as a problem. This is similar to a study in Ibadan, which found a high level of awareness of maternal deaths. Only about half of the respondents in that study knew someone who died at childbirth. However, in contrast to this about two-thirds of the respondents in this study knew someone that experienced maternal death.[6] This is because maternal mortality ratios are higher in the northern part of Nigeria, compared to south western Nigeria, where Ibadan is located. Since maternal deaths occur more frequently in the north, it can explain the fact that individuals in the north are more likely to have lost someone as a result of pregnancy or childbirth.[15]

This study found that the respondents had good knowledge of the causes of maternal mortality with haemorrhage, abortion, eclampsia and obstructed/prolonged labour identified as the commonest causes of maternal deaths. In keeping with these findings, a qualitative study in selected urban communities in Borno, north-eastern Nigeria, found that many of the respondents identified eclampsia, prolonged labour, and bleeding as causes of maternal mortality. Many of the respondents mentioned at least three out of the five main direct causes of maternal mortality.[16] Comparably high maternal mortality ratios in Kaduna and Borno states, where both of the study areas are located, could explain the high level of knowledge on the causes of maternal mortality. Respondents in both study areas are very likely to have lost someone, or at least know someone whose death was as a result of one of the aforementioned causes of maternal deaths. This is the reason for the good knowledge of

the direct causes of maternal deaths found in both studies. However, this differs from a study in Ethiopia where the men in the study had poor knowledge of the causes of maternal mortality.[17] This could be due to the fact that the respondents had lower educational status and were mostly residing in rural areas.

Knowledge of the direct causes of maternal deaths however did not translate into knowledge of the risk factors that predispose women to death as a result of pregnancy or childbirth. Less than half (46%) of the respondents were found to have good knowledge of maternal mortality risk factors while 14% had fair knowledge and 40% had poor knowledge. An analysis of the individual outcome variables used to obtain knowledge scores however showed that a very high proportion of the respondents (92.9%) viewed lack of ANC during pregnancy as a predisposing factor to maternal death. This is similar to a study carried out in Ibadan which showed that failure to use antenatal services was one of the reasons given by many respondents as a contributing factor to maternal deaths.[6] Both of these study areas are urban areas, with access to healthcare services. The respondents' educational levels in both of the studies were high too, and as pointed out in a separate study, men's level of education tends to influence participation in ANC.[18] In contrast a study in rural communities in Kaduna State found low levels of knowledge regarding ANC among men. Only 53% of the respondents were aware of ANC services offered at health facilities.[14] This is because the study was carried out in rural communities where availability and utilization of ANC services is generally low.[15] In addition, the level of education of the respondents' was significantly lower than that of those in this study which was carried out in a community with available educational and healthcare facilities within it.

Home delivery as a risk factor of maternal mortality was only recognized by just half of the respondents (50.6%). This contrasts with findings from a study in Mali where 95% of the male respondents said they would advise a pregnant friend or woman to deliver in a health facility.[19]

The cultural practices common in the region where our study was conducted, plays a major role in determining women's choice of place of child delivery. Two-thirds of the respondents in this study agreed that poverty adds to the burden of maternal mortality in Nigeria. This is comparable to a study among women in Warri, south-south Nigeria, where lack of money was perceived as a contributor to maternal mortality by 77.9% of the respondents.[20] This is not surprising as majority of the Nigerian populace lives below the poverty line[21] and as such, are likely to understand the hardships that come with out-of-pocket spending on health care.

Lack of family planning and high parity were the least common identified risk factors in this study. Only 34.1% and 39.4% of the respondents viewed lack of family planning and high parity respectively as risk factors influencing maternal mortality. This is in keeping with a study in Benin, south-south Nigeria, where none of the men interviewed in a reproductive health survey thought that the number of pregnancies a woman had would affect her health.[22] The reason for the similarity with the findings of this study is that in Africa, most societies are patriarchal and men continue to determine familial fertility and contraceptive decisions. With high demand for children, the motivation to regulate fertility is low, as such, it is unsurprising that so many men do not see lack of family planning and high parity as risks for maternal deaths.

This study found out that just about half (50.9%) of the respondents had negative attitudes, with the remaining 49.1% having positive attitude. In keeping with the high proportion of respondents who identified lack of antenatal care as a maternal mortality risk factor, 73.5% of the respondents agreed that men should encourage their wives to seek antenatal care during delivery. In a similar study carried out in Maiduguri, Borno State, many of the respondents showed favourable attitudes towards maternal antenatal care.

They opined that one of the ways to reduce maternal mortality was for men to allow their wives to attend antenatal care.[16] Findings in the studies are similar in the sense that both were carried out in urban communities with access to healthcare facilities that offer ANC services, and among respondents with high education levels who know the benefits of ANC during pregnancy.

However, attitude towards family planning was decidedly negative, as only 38.5% of the respondents agreed that men should encourage family planning. The general negative attitude towards family planning was also captured in a study carried in Kano which found about two-thirds (61%) had unfavourable attitude towards family planning, which mirrors the 61.5% obtained in this study.[23] This is largely related to cultural and religious beliefs coupled with the desire for more children which all add up to discourage people from stopping or limiting child-bearing. In contrast, a study in an urban region of Enugu found out that respondents were generally supportive of family planning, although overall women were said to be more likely than men to agree with positive attitudinal statements. More than four-fifths of the female respondents agreed that family planning helps a woman regain her strength between pregnancies and protects the health of mothers.[24] This is expected as the disparity in the utilisation of family planning methods is captured in the regional variations.[25]

There was a statistically significant relationship between the highest level of education; occupation with the knowledge score. This is similar to a study in Uganda where it was determined that those respondents with higher educational levels were almost 4 times as likely to have good knowledge on maternal health issues than those with lower educational levels and those with formal occupations are almost twice as likely to have better knowledge on maternal health issues than those with informal occupations.[5] There was a statistically significant relationship between the highest level of education; occupation with the attitude score. This was similar to a study in Osogbo, Osun State where there was a statistically significant relationship between the male respondents' educational level; occupation with attitude. The relationship could be explained by the fact that with higher education comes better understanding of maternal health and its determining factors which will invariably lead to a good attitude.

Conclusion
The study showed that although knowledge of the major direct causes of maternal deaths was high (87.1%), less than half(46%) of the respondents obtained scores that fell into the category of good knowledge, while 40% had poor knowledge and 14% had fair knowledge. Attitudes towards maternal mortality risk factors were negative in about half (50.9%) of the respondents. There was a statistically significant relationship between educational level; occupation and both knowledge and attitude score. This cross-sectional study has highlighted the need for increased male involvement and participation in maternal health issues. Interventions such as health education and community mobilization that aims to educate men on risk factors and danger signs associated with poor maternal health outcomes should be carried out in this area.

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