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Original Article

Factors Influencing Husbands' Involvement in Ante Natal Care Services in a Nigerian Urban Region

Ibrahim SM, Aminu MB,[1*] Usman HA, Umaru UD,[2] Kullima AA, Bako BG, Bukar M, Audu BM.

Department of Obstetrics and Gynaecology University of Maiduguri Teaching Hospital Maiduguri, Nigeria.
[1]Department of Obstetrics and Gynaecology Abubakar Tafawa Balewa University Teaching Hospital Bauchi, Nigeria.
[2]Department of Public Administration School of Management Studies University of Maiduguri, Nigeria.

ABSTRACT

Maternal mortality continues to be a problem in the developing world, and unfortunately few pregnant women receive antenatal care (ANC) from skilled attendants in this region. It is known that men play a significant role in the health-seeking behavior of their families. Their involvement in ANC services may lead to improved women's clinic attendance and maternal health. This descriptive cross-sectional study aimed to determine the proportion of husbands in Maiduguri, North-eastern Nigeria that accompanied their wives to ANC clinic, discussed issues related to pregnancy with them, and also the factors that influenced this role. A multi-stage sampling technique was used to recruit 307adult males, 18 years and above, who had fathered at least one child in the last two years preceding the study. Data were collected using pre-tested researcher-administered questionnaires designed from USAID Compendium of Indicators for Evaluating Reproductive Health Programs, and Health Belief Model of Health Behavioural Change Theory. The data was entered into the IBM SPSS software version 20.0 (New York, 2011). An analysis was performed to identify variables that suggest a significant association using Odds ratio and p-value <0.05 at 95 % confidence interval. Out of the 307 respondents recruited, 225 (73.3 %) were involved in ANC services. Educational status beyond primary school level, Christian faith, having means of transportation and couples making a joint decision on ANC were significant predictors for husband's involvement in ANC services(P<0.05). Similarly, a good condition of ANC services and spending less than 30 minutes waiting for consultation (P=0.008) were significant health-related predictive factors.

***Corresponding Author:** Muhammad Baffah Aminu Department of Obstetrics and Gynaecology Abubakar Tafawa Balewa University Teaching Hospital Bauchi, Nigeria. **Tel**: +2347037147717 **E-mail**: aminubaffahmuhammad@gmail.com*

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INTRODUCTION

Resolutions at International Conference on Population and Development, 'Cairo 1994' and at the Fourth Conference of Women, 'Beijing 1995' advocated for men's active involvement in responsible parenthood, reproductive and sexual health behaviour.[1] Such active role could reduce the maternal mortality ratio which is 15 times higher in developing regions compared to developed regions with sub Saharan Africa having the worst figure,[2] and Nigeria which accounts for nearly 10% of the global estimates of maternal mortality having a ratio of 560 per 100,000 births.[3,4]

Husband at antenatal clinic is rare in most African communities and it is uncommon to find men accompanying their partners during antenatal care and delivery.[5] However, men are socially and economically dominant especially in northern Nigeria; they exert a strong influence over their wives, determining the timing and conditions of sexual relations, family size, and access to health care.[4] This situation makes men critical partners for the improvement of maternal health and reduction of maternal mortality.

Several factors affect husbands' involvement in antenatal care services, including cultural factors, socio-economic, health facility factors, inter-spouse communication and perceptions men have on maternal health services in the society. For instance, the levels of antenatal care utilization

have been found to be high among men and women with higher economic status, better education, few children, married women and employed status.[6] Health care workers' compliance, perception and attitude play crucial roles as regard utilization of ANC.[6]

According to Nigeria Demographic and Health Survey 2013,[7] only 39.2 % of the women in Borno state received antenatal care from skilled attendants. What could be responsible for this low attendance? But it is known that men play significant role on the health seeking behaviour of their families.[8] Could lack of husband's involvement in maternal health care services be partly responsible for the poor utilization of maternal health care services by women residing in this area? Are there factors that influence their involvement?

The study looked at the proportion of husbands in Maiduguri, North eastern Nigeria that accompanied their wives to ANC clinic, and discussed issues related to pregnancy with them. It also determined the factors that influenced this role. Results generated from the study could be used as a guide to formulate policies especially in the area of health education that can influence husbands' role in this regard. Health facility related factors, which may have been influencing husband's level of patronage of maternity units determined from the study can be recommended for modification. The results of the study will also serve as a benchmark upon which more studies can be undertaken to generate new ideas to improve ANC attendance.

MATERIALS AND METHODS

Maiduguri is located between latitudes 11. 420 N and 12.000 N and longitudes 12.540 E and 13.140 E and it covers an area of 543km2. It is the capital city of Borno state, located in North-eastern part of Nigeria. According to the 2006 FGN census,[9] the population of Borno state was 4,151,193 with 1,990,036 females, while the population of Maiduguri Metropolitan Council was put at 749,123, with 54,454 married men.[9]

Based on Maiduguri Metropolitan Council 2011 document,[10] the council is divided into five districts with 36 administrative wards of various sizes. These districts are Yerwa, Shehuri North, Gwange, Bolori, and Maisandari. Yerwa has Gambaru 1 & 2, Limanti 1 & 2, Shehuri South, Fezzan, Hausari and Zango wards while Shehuri North district has Shehuri North 1, 2, & 3, Mafoni and Lamisula wards. Gwange 1, 2, & 3, Dalori Gana, Ali Askiri, Azamari and Bulabulin 1 & 2 wards made up Gwange district. Bolori district has Bolori 1-9 wards, Kumshe, Jabbamari and Wulari wards. Finally, Maisandari district has Maisandari, Alemdari, Bulumkuttu and Shuwari wards. Maternal health care services in the capital city are delivered through health units owned by private individuals and the Government. The University of Maiduguri Teaching Hospital is the only tertiary health institution in the state and serves as referral centre.

Ethical clearance was obtained from the University of Maiduguri Teaching Hospital Research and Ethics Committee, and the head of the districts visited granted permission for the study to be conducted.

It was a cross-sectional study carried out in Maiduguri, Borno state, North-eastern Nigeria. Males of 18 years of age and above, who had fathered at least one child in the last two years preceding the study were included.

The population for the study comprised of 54,454 married men residing within Maiduguri Metropolitan Council. Since the target population was greater than 10,000, Kish Leslie formula [11] stated below was used to calculate the sample size.

$$n = \frac{z^2 \times p \times q}{d^2} = \frac{(1.96)^2 \times (0.20) \times (0.80)}{(0.05)^2} = 246$$

z =1.96= z value for 95% confidence limits

p=0 .20 = expected proportion of men involved in maternal health in MMC, extrapolated from the study finding in Oshogbo South-West Nigeria where 20 % of men were involved in maternal health services.[12]

q = 1-p = 1-0.20 = 0.80

d = 0.05 is the acceptable error of the estimator at 95% confidence interval.

The required sample size, with 20 % attrition was 307. Therefore, 307 men were sampled.

A multistage sampling technique was used. The procedure involved selection of three districts (60 %) of the 5 districts in MMC through simple random sampling. Fourteen wards (at least 50 % of the total wards) were selected from the 3 districts (4-5 wards from each district) using simple random sampling. Using systematic sampling procedure, 22 households were selected from each ward.

The data was collected using pre-tested structured researcher-administered questionnaires, which was designed using a set of questions synthesized from USAID Compendium of

Indicators for Evaluating Reproductive Health Programs,[13] and Health Belief Model of Health Behavioural Change Theory,[14]

The data was entered in to the IBM SPSS software version 20.0 (New York, 2011). Frequency and percentage analyses were done for the categorical variables, and bivariate analysis was performed to identify variables that were suggestive of a significant association between background characteristics, couple characteristics and male involvement in maternal health care services. The odds ratio and 'p' value were calculated; p value <0.05 at 95 % confidence interval was considered significant. The independent variables that have significant values in bivariate analysis were entered into logistic regression analysis model.

The logistic regression model was used to control for confounding and to predict the factors that affect husband accompaniment in ANC services.

For the purpose of the study, Antenatal Care (ANC) was defined as health care given to a woman during pregnancy. Husband refers to a man of the age eighteen years and above, who is married or had been married and has fathered at least a child in the last 2 years at the commencement of the study.

Husband involvement in ANC refers to husband accompanying wife to ANC, and discussing issues related to the pregnancy with her. Maternal health services refer to care given to a woman during pregnancy, labour and puerperium. Joint decision on ANC refers to consultations or discussion on issues relating ANC, and arriving at a decision. Condition of services refers to policies of health facility regarding payment of fees before consultations or dispensing and administration of drugs, which commonly requires moving from one pay point to another. Time spent at the health facility refers to the duration of stay waiting to be seen by doctor, after retrieval of folders, and placed on the queue. Having means of transportation refers to possession of car or tricycle.

RESULTS

Of the 307 respondents studied during the period, 225 (73.3 %) were involved in ANC services. **Table 1** shows the unadjusted relationship between sociodemographic characteristics and husband's involvement in ANC services. Being Employed (OR 3.787, 95 % CI: 1.960-7.317, p<0.0001), having formal Education above primary school level (OR 5.793, 95 % CI: 2.855-11.755, p<0.0001), having wife with formal Education above primary school level (OR 3.155, 95 % CI: 1.871-5.322, p<0.0001), having means of transportation (OR 8.417, 95 % CI: 4.560-15.536, p<0.0001) and couple making joint decision on ANC services (OR 46.721, 95 % CI: 22.306-97.861, p<0.0001) were strongly associated with husband's involvement in ANC services. Similarly, consuming alcohol (OR 2.872, 95 % CI: 1.495-5.517, p=0.001), and living together as couple (OR 2.681, 95 % CI: 1.326-5.421, p=0.005) were predictive of husband involvement in ANC services, while being a Muslim (OR 0.238, 95 % CI: 0.098-0.577, p=0.001) was significantly less likely to be predictive of involvement. Age, number of children, marriage setting and source of information were not significant predictive factors for husband's involvement in ANC services.

Table 2 indicates that health facility with good ANC services (OR 3.947, 95 % CI: 2.316-6.725, p<0.0001), husband receiving invitation from health facility (OR 2.740, 95 % CI: 1.632-4.602, p<0.0001), Friendly attitude of health worker (OR 5.185, 95 % CI: 3.013-8.923, p<0.0001) and spending 30 minutes or less waiting time at the health facility (OR 3.458, 95 % CI: 1.850-6.566, p<0.0001) were all strongly predictive of husband's involvement in ANC services.

Table 3 shows logistic regression of sociodemographic factors that were predictive of husband's involvement. Having adjusted for confounders, only Educational status, Religion, means of transportation and couples making joint decision on ANC remain significant predictive factors while, Employment status, Wife's educational status, alcohol consumption and couple living together were no longer significant predictive factors.

Table 1: Unadjusted Association between Sociodemographic factors and Husband's involvement in antenatal care services

Husband's involvement in ANC service					
Factors	**Yes F(%)**	**NO F(%)**	**Total**	**OR 95% CI**	**P-Value**
Age (Years)					
18-25	74(72.5)	28(27.5)	102	0.945(0.554-1.613	0.836
>25	151(73.7)	54(26.3)	205		
Employment Status					
Employed	204(77.6)	59(22.4)	263	3.787(1.960-7.317)	<0.0001
Unemployed	21(47.7)	23(52.3)	44		
Educational Status					
Formal Education	210(78.4)	58(21.6)	268	5.793(2.855-11.755)	<0.0001
Nil Formal Education	15(38.5)	44(61.5)	39		
Wives 'Educational Status					
Formal Education	153(82.3)	33(17.7)	186	3.155(1.871-5.322)	<0.0001
Nil Formal Education	72(59.5)	49(40.5)	121		
Alcohol Consumption					
Consumed Alcohol	79 (85.9)	13 (14.1)	92	2.872 (1.495-5.517)	0.001
Nil consumption of Alcohol	146 (67.9)	69 (32.1)	215		
Number of Children					
1-4	183 (73.5)	66 (26.5)	249	1.056 (0.556-2.005)	0.867
≥5	42 (72.4)	16 (27.6)	58		
Marriage Setting					
Monogamous	166 (72.2)	64 (27.8)	230	0.791 (0.434-1.444)	0.445
Polygamous	59(76.6)	18(23.4)	77		
Couple Living Setting					
Living Together	205 (75.9)	65 (24.1)	270	2.681 (1.326-5.421)	0.005
Not Living Together	20 (54.1)	17 (45.9)	37		
Means of Transportation					
Has means of Transportation	151 (90.4)	16 (9.6)	167	8.417 (4.560-15.536)	<0.0001
Nil means of Transportation	74 (52.9)	66 (47.1)	140		
Source of Information					
Has source of Information	194 (74.3)	67 (25.7)	261	1.401 (0.713-2.755)	0.327
Nil Source of Information	31 (67.4)	15 (32.6)	46		
Joint Decision on ANC					
Made Joint Decision	211 (91.3)	20 (8.7)	231	46.721(22.306-97.861)	<0.0001
Did not make Joint Decision	14 (18.4)	62 (81.6)	76		

Table 2: Unadjusted Association between Health Facility-Related factors and Husband's involvement in Antenatal care services

Husband's involvement in ANC service					
Factor Value	**Yes F(%)**	**No F(%)**	**Total**	**OR 95% CI**	**P value**
Distance of Clinic from home					
< 5 Km	168 (72.4)	64 (27.6)	232	0.829 (0.454-1.515)	0.542
≥ 5 Km	57 (76.0)	18 (24.0)	75		
Receipt of Invitation letter from health facility					
Received letter	151 (81.2)	35 (18.8)	186	2.740 (1.632-4.602)	<0.0001
Did not receive letter	74 (61.2)	47 (38.8)	121		
Attitude of Health Worker					
Friendly	164 (85.4)	28 (14.6)	192	5.185 (3.013-8.923)	<0.0001
Not Friendly	61 (53.0)	54 (47.0)	115		
Time Spent Waiting for Consultation					
≤ 30 minutes	94 (87.0)	14 (13.0)	108	3.458 (1.850-6.566)	<0.0001
> 30 minutes	131 (65.8)	68 (34.2)	199		

Table 3: Logistic Regression Analysis showing Unadjusted and Adjusted Association between Sociodemographic factors and Husband's involvement in ANC services

	Husband's involvement in ANC service				
Factor	**Exposed Factor (%)**	**Unexposed Factor (%)**	**Adjusted OR 95 CI**	**Unadjusted OR 95 CI**	**P value**
Employment Status	77.6	47.7	3.787 (1.960-7.317)	0.667 (0.285-1.558)	0.350
Educational Status	78.4	38.5	5.793 (2.855-11.755)	0.131 (0.047-1.366)	<0.0001
Wife's Educ. Status	82.3	59.5	3.155 (1.871-5.322)	0.825 (0.407-1.671)	0.594
Religion	69.0	90.3	0.238 (0.098-0.577)	4.570 (1.459-14.296)	0.009
Alcohol Consumption	85.9	67.9	2.872 (1.495-5.517)	0.910 (0.343-2.408)	0.849
Couple Living Setting	75.9	54.1	2.681 (1.326-5.421)	0.456 (0.185-1.127)	0.089
Means of Transportation	90.4	52.9	8.417 (4.560-15.536)	0.118 (0.053-0.259)	<0.0001
Joint Decision on ANC	91.3	18.4	46.721 (22.306-97.861)	0.019 (0.007-0.048)	<0.0001

The logistic regression analysis for health facility related factors is illustrated in table 4. Only 2 factors- Condition of ANC services, and Time spent waiting for consultation, remain significant after adjusting for confounders.

Table 4: Logistic Regression Analysis showing Unadjusted and Adjusted Association between Health Facility-Related factors and Husband's involvement in ANC services

	Husband's involvement in ANC service				
Factor	**Exposed Factor (%)**	**Unexposed Factor (%)**	**Unadjusted OR 95 CI**	**Adjusted OR 95 CI**	**P value**
Receiving Letter	81.2	61.2	2.740 (1.632-4.602)	2.323 (0.916-5.894)	0.076
Condition of Service	82.3	54.1	3.947 (2.316-6.725)	0.370 (0.159-0.864)	0.021
Attitudes of H/workers	85.4	53.0	5.185 (3.013-8.923)	0.493 (0.207-1.174)	0.110
Time Spent	65.8	87.0	3.485 (1.850-6.566)	0.298 (0.121-0.731)	0.008

Key: H/Workers = Health workers

DISCUSSION

It is common in most African societies for husbands to decide as to when and how a wife should seek care and whether to accompany them or not. In our study, the percentage of husbands that accompanied their wives for ANC services and discussed issues related to the pregnancy with them was 73.3 %, making it an uncommon finding in African society. Understanding the reason for this high rate is difficult though, it could be because of the fact that most of the respondents in our study were formally educated and employed. These two factors have been found to be positively associated with increase husband involvement in ANC services.[15, 16, 17]

Our finding is higher but comparable with finding from a survey in England where 62.5 % of husbands were reported to be present for one or more antenatal check of their wives.[18] This rate is expected in a developed place like England where the level of education is high. Studies from Asian and some African countries showed diverse findings with some comparable and others lower than our findings.

For instance, in Nepal [19] only 40% of husbands accompanied their women for ANC services while in Uganda,[20] 65.4% male partners attended at least one skilled ANC visit. In Nigeria, studies on male involvement in ANC carried out in Oshogbo south west Nigeria [12] and Kano North west Nigeria [4] showed that only 20 % and 32.1 % of husbands accompanied their spouses for ANC services respectively. These figures are low when compared with ours. The general factors responsible for disparity in the finding of all these studies could be place of study, and sociodemographic characteristics of the respondents, including educational and literacy levels of study groups. For instance, our study was conducted in an urban centre. Since there was good husbands' involvement in ANC services from our study, including them in activities in ANC such as health education and counselling on birth preparedness can enhance positive health outcomes and increased service utilization, since they have been found to play dominant role in the homes and are capable of influencing their wives. Doing this could lead to reduction in maternal morbidity and mortality.

Lack of formal education beyond primary school level was associated with low husband involvement in ANC services.

It is believed that educated husbands are more financially empowered and better informed and therefore more likely to accompany wife for health care services. Our finding concurs with the outcome of studies conducted by Bhatta in Nepal,[21] and Olugbenga–Bello, et al in Nigeria.[12] Both researches found education to positively influence males' involvement in maternal health care. With education, there is better understanding of health needs and an educated husband is likely to be gainfully employed leading to financial empowerment and consequently the likelihood of involvement in ANC services. Policy makers can use this to improve husbands' participation in ANC services by ensuring free and compulsory education beyond primary school level for all.

Lack of transportation is a recognized factor contributing to delays in seeking care and consequently maternal mortality in the developing countries. In our study, it was observed that not having means of transportation was associated with lack of accompaniment of wife for ANC services, a finding that is supported by a previous study in Zambia where not having a vehicle was noted to negatively influence health seeking behaviours.[22] Availability of transportation eases movement from home to the hospital and as such husbands are likely to be encouraged by this factor to accompany wives for ANC services. Asides Government, the community can collaborate with transporters to make available, cost effective transportation system that will facilitate attendance of ANC by couples who do not have cars or tricycles. Payment for this service can be made from sales of farm produce by farmers, salary by workers, as well as periodic contributions in the form of health insurance scheme.

Religion was found to influence husband's involvement in ANC services, with those belonging to Christian faith more than 4 times likely to accompany their wives when compared with Muslims. We did not come across previous studies that examined this particular factor, and the reason for the finding was not clear. A possible explanation could be Polygamous family setting of Muslims. A Muslim husband who has more than one wife may not likely accompany any of them to the health facility during pregnancy. If he accompanies one, he must accompany the other when her turn comes, otherwise his action will be regarded as injustice. In addition, both wives may become pregnant around the same time making it difficult for him to accompany them.

It was also observed in our study that more than 90 % of husbands made joint decision with wives on issues relating to ANC, and such decision was predictive of couples visiting clinic together. This agrees with outcome of study conducted in Nepal where over 70 % reported joint discussion on health issues during pregnancy.[23] Women who attend ANC often have much information on maternal health care than men do since they get educated during ANC sessions. Sharing this information with their spouses may lead to better husbands' understanding on the need to get involved and hence accompany wives for the services. Joint couple decision has generally been found to be associated with positive health outcomes in other areas of reproductive health particularly contraceptive use.[24, 25] Hence during counselling sessions at ANC, women should be told to transmit issues discussed to their spouses so that they will be well informed and encouraged.

The longer the time spent waiting to be seen at the clinic, the less likely the husband would accompany the wife. This finding is consistent with that of a Ugandan study [20] where 41.7 % of husbands reported it as a barrier to attendance of ANC. This means that if efficient system that will reduce the time spent by couples to less than 30 minutes is put in place by our health personnel, husbands will be encouraged to accompany wives. This can be achieved through adequate human resource and infrastructural development as well as institution of effective service strategies such as discipline among personnel. Staggering the ANC times or making the timing flexible that will be convenient for more men to visit is also advocated.

Demanding for fees before services are rendered at health facilities was associated with poor attendance of ANC by husbands as revealed by our study. This condition of service which the respondents referred to as poor was noted in a previous study in Kenya [26] where payment of fees was mandatory before services were rendered and not vice versa. Poverty could be a major cause of discouragement, but even when the money is available, the process of payment entails movement from one pay point to another which delays commencement of treatment. Removing these bottlenecks could encourage increase husbands' participation in ANC services. A single pay point close to the point of consultations is advocated.

LIMITATION

Some limitations in the study deserve consideration. The participants in the study included temporary residents who were displaced from some parts of the North-eastern region

of Nigeria by insurgency; therefore, the findings should be generalized to the current population of the study area. Although respondents' date of last childbirth of two years was used as an inclusion criterion, recall bias was possible during data collection especially in relation to this aspect. This could have resulted in recruitment of subjects that did not meet the inclusion criteria. However, effort was made to probe and ensured that such bias was minimized. To totally eliminate this bias, cross-validation of men's responses by interviewing their wives would have been appropriate. Furthermore, our study was carried out in the urban city where health facility structures and some social characteristics of respondents differ from other areas of the state which are mainly rural settlement, making it difficult to entirely generalize the findings of the study. However, it gives idea on the approach and factors to consider when similar study is intended for other part of the state. Finally, because the study was cross-sectional, making causal relationship between the reported associations is difficult.

CONCLUSION

The conclusion that might be drawn from the study is that more husbands were involved in maternal health care services and that social, economic and health facility factors influenced their involvement. Factors that were found to be associated with increased male involvement in ANC included having higher education status, being a Christian, having means of transportation, making joint decision on issues of ANC as couples, ANC facility with good condition of services and spending less than 30 minutes waiting time for consultation.

RECOMMENDATIONS

To increase male involvement in ANC services therefore, the health managers must ensure that waiting time is reduced and clients are seen within short period of time. They must also ensure availability of friendly reproductive health services and cost-effective drugs and care. As enshrined in the 2015 Sustainable Development Goals, provision of equitable quality education and promoting life-long learning opportunities are essential. A study to establish outcome or effect of male involvement in maternal health care services would further strengthen strategies for improving male involvement in maternal health care.

Conflict of Interest

None declared

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