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Male Involvement in Birth Preparedness in Ogun State, Nigeria: A Rural/Urban Comparative Cross-sectional Study

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Abstract

Though male involvement is associated with improved maternal and child health outcomes, the practice is low in developing counties like Nigeria. This comparative cross-sectional study described and compared male involvement in birth preparedness between rural and urban areas of Ogun State, Nigeria. It was carried out among 440 fathers of under-fives each from rural and urban local governments using multistage sampling to select participants. Data were collected using an interviewer-administered questionnaire and Focused Group Discussions (FGDs) and analyzed using SPSS version 20. Thematic analysis of FGD was done. Relevant descriptive and inferential statistics were calculated and results presented in frequency tables. Male involvement was statistically significantly better in rural areas than in urban areas (P=<0.001). Tertiary education (AOR= 2.446, 95% C. I= 1.559-3.838) remained significant predictor of male involvement in birth preparedness in the urban area while predictors in rural area were young paternal age (AOR 0.465, 95% C.I= 0.223-0.967) and tertiary education (AOR= 6.241, 95% C.I=1.827-21.317). This implies that male involvement in birth preparedness was better among educated men in both urban and rural areas. *(Afr J Reprod Health 2020; 24[2]:70-84).*

Keywords: Male involvement, Birth preparedness, rural, urban, Ogun State

Résumé

Bien que la participation des hommes soit associée à de meilleurs résultats en matière de santé maternelle et infantile, la pratique est faible dans les pays en développement comme le Nigéria. Cette étude transversale comparative a décrit et comparé la participation des hommes à la préparation à la naissance entre les zones rurales et urbaines de l'État d'Ogun, au Nigéria. Elle a été réalisée auprès de 440 pères de moins de cinq ans issus de collectivités locales rurales et urbaines à l'aide d'un échantillonnage à plusieurs degrés pour sélectionner les participants. Les données ont été recueillies à l'aide d'un questionnaire administré par un intervieweur et de discussions de groupe ciblées (FGD) et analysées à l'aide de SPSS version 20. Une analyse thématique des FGD a été effectuée. Des statistiques descriptives et déductives pertinentes ont été calculées et les résultats présentés dans des tableaux de fréquences. La participation des hommes était statistiquement significativement meilleure dans les zones rurales que dans les zones urbaines (P = <0,001). L'enseignement supérieur (AOR = 2,446, 95% C.I = 1,559-3,838) est resté un indicateur important de la participation des hommes à la préparation à l'accouchement en zone urbaine tandis que les indicateurs en zone rurale étaient le jeune âge paternel (AOR 0,465, IC 95% = 0,223-0,967) et l'enseignement supérieur (AOR = 6,241, IC à 95% = 1,827-21,317). Cela implique que la participation des hommes à la préparation aux naissances était meilleure chez les hommes instruits dans les zones urbaines et rurales. *(Afr J Reprod Health 2020; 24[2]: 70-84).*

Mots-clés: Participation des hommes, préparation à la naissance, rural, urbain, état d'Ogun

Introduction

Maternal deaths result from pregnancy, labour or postpartum complications but their incidences could be reduced when there are adequate birth plans by pregnant women, their partners, and relatives[1]. The practice of birth preparedness in developing climes where there is ineffective infrastructure, poor transport system, and erratic access to skilled birth attendants have the potential of reducing the existing high maternal and neonatal morbidity and mortality rates[2].

In 1994, the United Nations Population Fund (UNFPA) described an agenda for the International Conference on Population and Development, Cairo and Fourth World Conference on Women, Beijing, wherein men would play an active role in empowering women[3]. The Federal Government of Nigeria in 1988 drew up the maiden National Population Policy which identifies men as the head of the family who takes important decisions on the size of the family, sustenance, social relationships, and health-related issues[4]. Unfortunately, according to most studies, male partner involvement in maternal and child health is still low in many countries[5-7].

Male involvement is a term that denotes "the various ways in which men relate to reproductive health problems and programs, reproductive rights and reproductive behaviour"[8]. In a typical black African society, culture and tradition put the male gender over the female and men are known to exercise an enormous influence on the reproductive health of their wives and the general health of the children[9].

Male involvement is associated with improved maternal health outcomes in developing countries[10]. Men play an important role to ensure the safety of their female partners when they are pregnant and during childbirth[11]. Such roles include providing money for antenatal care, delivery, and emergency[5, 12-14], procuring birth kit[15], identifying skilled birth attendant[14, 16] and deciding where delivery will take place[14]. Besides, men identify possible blood donors in the event of emergencies bearing in mind the unpredictable stock of blood banks in most hospitals in sub-Saharan Africa[17].

Many studies have reported benefits of male involvement in Maternal Health in developed and developing countries, which comprise: increased maternal access to antenatal and postnatal care[18]; discouragement of unhealthy maternal practices such as smoking[19, 20]; improved maternal mental health[21, 22, 23]; increased likelihood of contraception use[24, 25]; and allayment of stress, pain and anxiety during delivery[26]. However, some authors have argued that male involvement may be associated with negative effects such as undue male dominance in decision-making[27] and the potential for escalating labour difficulty when husbands become anxious in delivery rooms[18].

Regional differences are common in the utilization of maternal health services in both developed and developing countries[28, 29]. Such variations have also been reported between urban and rural dwellers[28, 30]. In a study of utilization of maternal health services in Anambra State, Southeast Nigeria, antenatal care attendance was significantly higher in the urban area than in the rural area[30].

Inequalities in the utilization of maternal and child health care services in urban and rural areas have been attributed to different factors which include the accessibility of healthcare services and socio-economic factors[29]. Male involvement in family and reproductive health has also been reported to be at variance in urban and rural climes and influences the utilization of health services[31].

There is relatively limited program experience and research on how male involvement in birth preparedness can be improved in Nigeria[32] Besides attempts to involve men in maternal health care especially ANC has managed to attract only a small number of husbands in developing countries[33]. This has been the case in many parts of Nigeria. For instance, only 24% of men in South West Nigeria (where Ogun State, this current study area is located) accompany their wives to ANC[34]. The South West region of the country has also been reported to have the greatest proportion of women (12%) whose husbands do not allow them to deliver in a health facility with Ogun State contributing the most to these figures after Oyo State. This refusal of husbands to allow their wives to deliver in health facilities may be one of the reasons while Ogun State has one of the least proportions of pregnant women who delivered in a health facility in South West, Nigeria[28]. This study aimed to determine and compare the prevalence, pattern and correlates of male involvement in birth preparedness in rural and urban areas of Ogun State, Nigeria.

Methods

Study area, study design, and population, sample size estimation

This community based comparative cross-sectional study was carried out in one rural and one urban area of Ogun State, Nigeria. The state is bounded in the north by Oyo and Osun States, in the east by Ondo State, in the south by Lagos State and in the west by the Republic of Benin with a population of 3,728098 according to the 2006 national census[35]. The projected population for 2016 was 5,217,700[36].

Ogun state has two federal tertiary hospitals, one state tertiary health facility, 39 public secondary health facilities, 450 primary health facilities, one private tertiary health facility, and 904 private health facilities[32]. Agencies that contribute to Maternal and Child Health in the state include World Health Organization (WHO), United Nations Children's Fund (UNICEF), and United States Agency for International Development (USAID) in collaboration with the State Government. Most of the women in the state have doctors as their antenatal care providers; one-quarter are attended to by nurses/midwives while few are attended to by auxiliary nurses and Community Health Extension Workers (CHEWS)[28].

The rural LGA selected for this study was Odeda LGA which covered an area of 1,560 square Kilometres with a population of 109, 449 at the 2006 census[37] and a projected population of 152,300 for 2016[36]. It shares boundaries with Abeokuta South LGA in the south, Obafemi Owode LGA in the east, Abeokuta North LGA in the west and Oyo State in the north. The LGA is divided into 10 wards. There are twenty - nine public primary health facilities, one public secondary health facility and nineteen private health facilities in the LGA. These facilities offered maternal and child health services[38].

Abeokuta South LGA was selected as the urban LGA for this study. Created in 1991, the headquarters is in Ake. It is divided into 15 wards and has a landmass of 71 square kilometres with a population of 250, 278 at the 2006 census[39] and a projected population of 348,200 for 2016[36]. There are eleven primary health care facilities, three public secondary health facilities, one tertiary health facility and seventy-three private health facilities in the local government. Maternal and Child Health services are rendered in these facilities[38].

The study was conducted among men who were at least 18 years and were living in personal or rented apartments in rural and urban areas of Ogun State as at the time of the study and whose partners/spouses have had at least a live birth during the last five years. The minimum sample size was determined using the standard formula for the determination of sample size for comparing proportions between two groups. A standard normal deviate of 1.96, 95% confidence interval, power of 80%, a minimum sample size of 361.1 was computed. Correcting for a possible non-response rate of 10%, the final calculation was 401.2. A sample size of 440 men each was however studied in the selected rural and urban areas giving a total of 880 participants.

Sampling method, data collection tools, and techniques, study measures

A multistage sampling method was used. Ogun State consists of three senatorial districts. Simple random sampling was used to select one senatorial district. Ogun Central Senatorial District was selected. The district is comprised of six local governments; five urban local governments and one rural local government. Simple random sampling was used to select one urban local government. Abeokuta South Local Government was selected as the urban local government while Odeda Local Government was included being the only rural local government. Simple random sampling was then used to select five wards each in the selected rural and urban LGAs.

A selection of 2 settlements was done by simple random sampling in each ward making a total of 10 settlements for each local government.

Each settlement served as a cluster. All houses in the cluster were selected for the interview. In single household houses, the eligible household head was interviewed. In multiple household houses, one household was selected by simple random sampling in each house and the eligible household head was selected as respondent.

Two methods of data collection were used in this study; administration of questionnaires and conduct of focused group discussions (FGDs). A structured interviewer-administered questionnaire was used to elicit data from respondents. The instrument was constructed from a review of literature on the role of men in Maternal Health. The questionnaire was translated to Yoruba for better understanding by respondents and translated back to English to ensure the questions still maintained their original understanding. The questionnaire was pre-tested on 40 married men in Agege Local Government of Lagos State which formed the southern boundary of the state under study. Corrections were thereafter made to the questionnaires.

The questionnaire sought information on respondents' socio-demographic data, male involvement in birth preparedness and factors that determine male participation in birth preparedness. Male involvement in birth preparedness was assessed by asking certain questions as regards roles expected to have been performed by the men during the birth of their last child by providing the options "Yes" and "No". Six Focus Group Discussions (FGDs), three each in the rural and urban areas were carried out among men and women before the quantitative survey. This was done to elicit more detailed reasons for male involvement and otherwise and to observe the body language of participants as regards the topic. A separate FGD guide was developed and the outcome of the exercise helped in constructing the questionnaire for the quantitative survey.

Data management and analysis

The questionnaires were crosschecked for errors and cleaned. The analysis was done using Statistical Package for Social Sciences (SPSS) version 20.0. Composite variables (aggregate scores) for male participation were computed from items on the questionnaire. Thirteen items were assessed for male involvement in this study, which gave a total score of 13. These items were: purchased birth kit, allowed wife to attend ANC, reminded wife of ANC appointments, accompanied wife to ANC, arranged skilled birth attendant, arranged transportation for ANC and/or labour, decided place of delivery, saved money for delivery, arranged blood/blood donor in case of emergency, gave encouragement and emotional support to wife, helped with house chores when wife was pregnant, stayed with children when wife was away on ANC/labour and stayed with wife during labour.

Male involvement was scored as follows: Option "Yes" was allocated the score "1" and "No" was allocated "0". The mean score for male involvement in birth preparedness was calculated as 9.17 (approximated to 9). Average male involvement score of at least 9 (mean score) was considered as good involvement and below 9 was considered as poor involvement. The analyzed data were presented as frequency tables and charts. Data were summarized using mean, standard deviation and proportions. Chi- squares were used to test for associations between the categorical variables, while the student's t-test was used for comparison between means. Logistic regression was used to analyze factors responsible for male involvement in birth preparedness after controlling for confounding. These factors were statistically significant variables (p-value <0.05) during bivariate analysis. The level of significance was set at a 95% confidence interval with P value= 0.05.

The Focus Group Discussion (FGD) sessions were recorded and transcribed manually. All opinions of participants regarding all the various issues discussed were noted such that all the varied comments were reported even if such comment(s) were made by only one of the entire number of participants from all the FGD groups. All similar comments (themes) were grouped and reported based on the relative number of

participants that made them, hence were reported as being said e.g. 'all', 'majority', 'some' or 'few'. Any reported comment(s) made by the participants in their own words was written in italics.

Approval for this study was obtained from the Health Research and Ethics Committee of the Olabisi Onabanjo University Teaching Hospital, Sagamu, Ogun State. Approval was also sought from the Medical Officers of Health of the selected local governments. Verbal and written informed consent was obtained from the respondents and strict confidentiality of all information and results of findings were maintained throughout the study. As part of measures to ensure confidentiality, no names were attached to the focus groups.

Results

Table 1 shows the socio-demographic characteristics of the respondents. The mean age of respondents in urban areas was 36.58±6.76 and mean age of respondents in rural areas was 37.61±9.788. The difference in the mean age of urban and rural residents was not statistically significant (t= -1.819, P= 0.069). About half (48.2%) of the respondents in urban areas had tertiary education as the highest academic attainment as against just 13.9% in rural areas. In the urban area, 37 (8.4%) of the respondents had no form of formal education, a situation that was seen in as much as 21.1% of rural dwellers. The association between educational status and place of residence was statistically significant ($\chi 2$=13.069, P=<0.001).

Socio-demographic characteristics of focus group discussion participants

Two FGDs were conducted among men and one FGD among women each in rural and urban areas making a total of six FGDs. The participants ranged from 6-8 in all the FGDs. In the rural area, the mean age of male participants was 40.9 years while the mean age of the urban male participants was 35.7 years. Among female participants, the mean age was 26.8 years for rural residents and 28.5 years for urban residents. The formal educational status of rural participants ranged from none to tertiary and urban residents from incomplete secondary education to tertiary. Half of the female participants in the rural area were housewives, while there was only one housewife in the urban area. Other female participants from the urban area were petty traders, artisans, and one teacher. Men in the rural area were essentially agricultural workers and traders while in the urban area; they were artisans and civil servants.

Table 2 shows that except for staying with their wives during labour, rural men are more involved in ANC and delivery of their women compared to urban men. The two commonest practices among men were purchasing birth kits (Urban 95.9%; rural 92.7%) and saving money for delivery (Urban 89.5%; rural 97.7%). There was statistical significance between these practices and place of residence (P=0.041 and <0.001 respectively). Most of them (95.2% urban; 95.9% rural) also allowed the wife to attend ANC and arranged transport for delivery (88.0 urban; 95.9% rural). On the other hand, relatively fewer respondents (40.2% urban; 65.0% rural) accompanied the wife to ANC. Those who arranged blood in case of emergencies were also relatively few as it was seen in 31.1% of urban respondents and 54.1% of rural respondents. This difference was statistically significant (P=<0.001).

Table 3 shows male involvement scores for participants in rural and urban areas. Four-fifth (80.5%) of rural respondents had good involvement in birth preparedness compared to only about half (52.7%) of urban men who had good involvement. This difference was statistically significant (P<0.001).

Table 4 shows that many of the respondents (urban 43.9%; rural 62.0%; P=<0.001) have had reasons not to participate in birth preparedness and childhood immunization at one time or the other. The commonest reasons for non- participation included prolonged waiting time (60.1% urban; 50.2% rural; P=0.031), respondents busy with other things (36.3% urban; 37.4% rural, P=0.833) and unfriendly hospital settings (43.5%

Table 1: Socio-demographic characteristics of rural and urban men in Ogun State, Nigeria. N=440

Variable	Urban n(%)	Rural n(%)	Test Statistics
Age Group (Years)			
15-24	7(1.6)	11(2.5)	
25-34	172(39.1)	178(40.5)	
35-44	205(46.6)	152(34.5)	
45-54	53(12.0)	69(15.7)	
≥55	3(0.7)	30(6.8)	
Mean	**36.58±6.760**	**37.61±9.788**	**t=-1.819, P=0.069**
Marital Status			
Single	62(14.1)	17(3.9)	
Married	359(81.6)	407(92.5)	
Divorced	6(1.4)	5(1.1)	$\chi2$= 29.775
Separated	13(2.9)	11(2.5)	P= <0.001
Type of Marriage			
Monogamous	357(81.1)	328(74.5)	$\chi2$ = 33.384
Polygamous	83(18.9)	112(25.5)	P= < 0.001
Highest Educational Status			
No Formal Education	37(8.4)	93(21.1)	
Primary	64(14.5)	130(29.5)	
Secondary	127(28.9)	156(35.5)	$\chi2$ =13.069
Tertiary	212(48.2)	61(13.9)	P< 0.001
Occupation			
Trading	115(26.1)	85(19.3)	
Agricultural worker	29(6.6)	220(50.0)	
Unskilled	52(11.8)	13(3.0)	
Semi-Skilled	80(18.2)	52(11.8)	
Professional	29(6.6)	5(1.1)	
Civil Servant	126(28.6)	57(13.0)	$\chi2$= 223.366
Unemployed	9(2.0)	8(1.8)	P< 0.001
Religion			
Christianity	268(60.9)	258(58.6)	
Islam	169(38.4)	167(38.0)	$\chi2$=8.202
Traditional Religion	3(0.7)	15(3.4)	P= 0.017
Ethnicity			
Yoruba	402(91.4)	284(64.5)	
Igbo	28(6.4)	30(6.8)	
Hausa	4(0.9)	103(23.4)	$\chi2$= 121.930
Others	6(1.4)	23(5.2)	P=< 0.001

Mean Age= 37.10±8.423

urban; 22.3% rural; P=<0.001). Other reasons included poor health care providers' attitude (16.1% urban; 38.5% rural, P=<0.001) and lack of confidence in the service (12.4% urban, 34.1% rural, P= <0.001). Not being aware of the services was the reason for non-participation in very few people (4.1% urban; 8.4% rural). This was however not significant (P=0.071).

Table 5 shows there was a statistically significant association between age and male involvement in the rural area ($\chi2$= 5.327, P= 0.021) while the association was not significant in the urban area ($\chi2$= 0.081, P= 0.776). Marital status was statistically significantly associated with male involvement in both urban and rural areas (Urban $\chi2$ = 4.604, P= 0.032; rural $\chi2$ = 6.417, P= 0.011). A larger proportion of those with tertiary education (Urban 66.0%, rural 95.1%) had good involvement as compared to men without tertiary education (urban 40.0%; rural 78.1%). This association was statistically significant in both urban and rural areas (Urban $\chi2$ = 29.080, P= <0.001; rural $\chi2$ = 9.636, P= 0.002). There was no statistically significant association between occupation and male involvement in both urban (P= 0.239) and rural (P=0.612) areas.

Table 6 shows that having tertiary education (AOR= 2.446, 95% C. I = 1.559-3.838),

Table 2: Male Involvement in Birth Preparedness in Ogun State, Nigeria

Variable	Urban n(%)	Rural n(%)	χ2	P-value
Purchase birth kit				
Yes	422(95.9)	408(92.7)		
No	18(4.1)	32(7.3)	4.156	P=0.041
Decided/allowed wife to attend ANC				
Yes	419(95.2)	426(96.8)		
No	21(4.8)	14(3.2)	1.458	P=0.227
Remind wife of ANC appointments				
Yes	252(57.3)	405(92.0)		
No	188(42.7)	35(8.0)	140.603	P=<0.001
Accompanied wife to ANC				
Yes	177(40.2)	286(65.0)		
No	263(59.8)	154(35.0)	54.153	P=<0.001
Frequency of accompanying wife to ANC. n=177				
Always (4 of 4 times)	37(20.9)	72(25.2)		
Frequently (3 of 4 times)	37(20.9)	67(23.4)		
Occasionally (2 of 4 times)	69(39.0)	95(33.2)		
Rarely (1 of 4 times)	34(19.2)	52(18.2)		
Arranged skilled birth attendant				
Yes	193(43.9)	348(79.1)		
No	247(56.1)	92(20.9)	115.279	P=<0.001
Arranged transport for delivery				
Yes	387(88.0)	422(95.9)		
No	53(12.0)	17(3.9)	20.114	P=<0.001
Decided on the place of delivery				
Yes	300(68.2)	397(90.2)		
No	140(31.8)	43(9.8)	64.915	P=<0.001
Gave money for delivery				
Yes	394(89.5)	430(97.7)		
No	46(10.5)	10(2.3)	24.716	P=<0.001
Arranged for blood in case of emergency during delivery				
Yes	137(31.1)	238(54.1)		
No	303(68.9)	202(45.9)	47.403	P=<0.001
Stayed with wife during labour				
Yes	286(65.0)	183(41.6)		
No	154(35.0)	257(58.4)	48.433	P=<0.001
Helped with house chores during pregnancy				
Yes	355(80.7)	362(82.3)		
No	85(19.3)	78(17..0)	0.369	0.544

Table 3: Score of Male Involvement in Birth Preparedness

Variable	Urban	Rural	χ2
Poor Involvement			
≤ 8	208(47.3)	86(19.5)	
Good Involvement			χ2= 76.025
≥ 9	232(52.7)	354(80.5)	P=<0.001
Mean	8.49±2.264	9.84±2.048	

Mean= 9.17±2.261

Table 4: Reasons for not accompanying wife to health facility (N=440)

Variable	Urban n (%)	Rural n (%)	χ2	P-Value
Ever had reasons not to participate in preparing for childbirth				
Yes	193(43.9)	273(62.0)		
No	247(56.1)	167(38.0)		<0.001
Reasons for non-participation	n=193	n=273		
Poor health care providers attitude	31(16.1)	105(38.5)	27.181	<0.001
Not allowed access by facility	38(19.7)	69(25.3)	1.935	0.164
Unfriendly hospital settings	84(43.5)	61(22.3)	23.908	<0.001
Prolonged waiting time	116(60.1)	137(50.2)	4.656	0.031
Lack of confidence in the services	24(12.4)	93(34.1)	27.894	<0.001
Maternal and Child's Health is woman's work	46(23.8)	86(31.5)	3.186	0.074
Religion and culture did not permit me	7(3.6)	40(14.7)	15.060	<0.001
Time constraint/busy with other things	70(36.3)	102(37.4)	0.045	0.833
Financial constraint	38(19.7)	48(17.6)	0.388	0.534
Not aware of services provided	8(4.1)	23(8.4)	3.249	0.071
Poor wife's attitude	14(7.3)	36(13.2)	4.029	0.045

Table 5: Factors associated with Male Involvement in Birth Preparedness among men in urban and rural communities in Ogun State, Nigeria (N=440)

Variable	Urban Involvement		Rural Involvement	
	Poor Involvement	Good Involvement	Poor Involvement	Good Involvement
Age (years)				
< 30	32(45.7)	38(54.3)	11(11.3)	86(88.7)
≥ 30	176(47.6)	194(52.4)	75(21.9)	268(78.1)
	0.081*(0.776)**		**5.327*(0.021)****	
Marital Status				
Not Currently married	47(58.0)	34(42.0)	12(36.4)	21(63.6)
Currently married	161(44.8)	198(55.2)	74(18.2)	333(81.8)
	4.604*(0.032)**		**6.417*(0.011)****	
Education				
No tertiary education	136(59.6)	92(40.0)	83(21.9)	296(78.1)
Tertiary education	72(34.0)	140(66.0)	3(4.9)	58(95.1)
	29.080*(<0.001)**		**9.636*(0.002)****	
Type of marriage				
Polygamous	67(50.4)	66(49.6)	30(24.0)	95(76.0)
Monogamous	141(45.9)	166(54.1)	56(17.8)	259(82.2)
	0.736*(0.391)**		**2.203*(0.138)****	
Occupation				
Unemployed	6(66.7)	3(33.3)	1(12.5)	7(87.5)
Employed	202(46.9)	229(53.1)	85(19.7)	347(80.3)
	1.386*(0.239)**		**0.257*(0.612)****	
Religion				
Non-Christian	83(48.3)	89(51.7)	42(23.1)	140(76.9)
Christian	125(46.6)	143(53.4)	44(17.1)	214(82.9)
	0.109*(0.741)**		**2.462*(0.117)****	
Ethnicity				
Non –Yoruba	20(52.6)	18(47.4)	23(14.7)	133(85.3)
Yoruba	188(46.8)	214(53.2)	63(22.2)	221(77.8)
	0.479*(0.489)**		**3.544*(0.060)****	

Chi-Square: * P-Value:**

Table 6: Predictors of male involvement in Birth Preparedness in Ogun State, Nigeria

Variable	Urban Adjusted Odds Ratio (AOR)	95% Confidence Interval	P-Value	Rural Adjusted Odd Ratio (AOR)	95% Confidence Interval	P Value
Age Group (Years)						
< 30	0.644	0.351-1.181	0.155	0.465	0.223-0.967	0.041
≥ 30	1.00			1.00		
Education						
Tertiary	2.446	1.559-3.838	<0.001	6.241	1.827-21.317	0.003
No Tertiary	1.00			1.00		
Marital Status						
Currently married	1.559	0.825-2.949	0.172	2.230	0.937-5-311	0.070
Not Currently married	1.00			1.00		

remained significant predictors of male involvement in birth preparedness in the urban area of Ogun State. In the rural area, Young paternal age (AOR 0.465, 95% C. I= 0.223-0.967) and having tertiary education (AOR= 6.241, 95% C. I=1.827-21.317) remained significant predictors of male involvement in birth preparedness.

Factors associated with male involvement from focus group discussion

In focus group discussions conducted among men, various factors that could influence male participation in birth preparedness were outlined. Among the urban residents, emphases were placed on health workers' attitudes and time factors. In the rural area, prominent factors raised were health workers' attitudes, wife's attitude, lack of confidence in the health care services, and personal belief. These submissions were similar to what obtained in the quantitative study.

Health workers' attitude

In the course of the qualitative study, health workers' attitude was an important factor raised among respondents that encouraged or discouraged men from participating in birth preparedness, and by extension, other components of maternal health. The following excerpts attest to this

"What discourage men from participating include for instance when we accompany our wives, is the attitude of health workers. Their attitude can be annoying sometimes. It can be the way these health workers behave to our wives in our presence." (51-year old rural participant)

This statement from a rural participant was corroborated by submissions of participants in the urban area as shown below

"Doctors and nurses won't just allow the person accompanying the pregnant women to follow them to labour room." (36-year-old Urban participant)

"They (health workers) are not very friendly. I am discouraged to accompany my wife because of the attitudes of the nurses…. "(28-year old urban artisan)

Lack of confidence in the service

Previous experiences as regards the outcome of health care services may encourage or discourage men from participating According to a 48-year old participant.

Time factor

This was pointed out as the busy schedule of the man and prolonged waiting time in health facilities.

"People wait too long in many of our hospitals. I think it is not the fault of the health workers. It's that they have too many people to attend to" (Urban participant)

Wife's attitude

Apart from health workers preventing men from having access to clinics, wives' attitude was also a factor that was responsible for males' participation

in birth preparedness. This could be in the form of the wife being submissive to the husband or giving him detailed information about her health and activities like ANC. In discussing factors that could encourage male participation, a respondent in the urban area simply said:

"The wife should allow her husband to be informed about the whole process".

This was not too different from the thoughts of rural participants**.** According to participants, wives also prevent their spouses from participating sometimes. A 54-year old man in the rural area submitted;

"There are some wives that won't allow their husbands to follow them into the labour room".

Discussion

Male involvement in birth preparedness was good in both urban and rural areas in this current study. However, the practice was significantly higher among rural participants as compared to the urban participants. Several explanations can be proposed for the higher male involvement in the rural area observed in this study. There is an apparent urban bias in the establishment of health institutions, provision of social amenities and preference of postings by health care providers. The rural area is therefore poorly equipped in the area of providing emergency services. This may warrant men and families in rural settings to be more concerned in the area of providing things that may be needed in case of emergencies. It may also make men in rural areas to be proactive as to constantly and cautiously remind their spouses of ANC appointments.

The National Demographic Health Survey 2013 (NDHS)[28] reported that 14.4% of urban households possessed means of transportation as against 4.3% rural households. It may, therefore, be rational for more rural households to arrange means of transportation beforehand; moreover, since poor roads and paucity of means of transportation characterizes rural areas in Nigeria. The NDHS 2013[28] also documented that 43.3% of urban residents are in the highest wealth quintile while only about a tenth of this figure (4.6%) of their rural counterparts fell into this category[28]. There may, therefore, be a more deliberate effort among rural men in saving money for eventualities.

Moreover, less urban male participation may be a result of the fact that more urban men are employed, which usually takes them away from home from morning till late in the evening. Some may even travel frequently for official assignments thus spending less time with their families and getting less involved with family and reproductive health. The difference in male involvement between rural and urban areas is statistically significant. However, in contrast to this study, male involvement in birth preparedness is more among urban dwellers in Tanzania[40]. Better male involvement in the rural area reported in this current study is a beneficial finding as it may help improve utilization of maternal health services which is typically low in rural areas as compared to urban areas[28]. This will ultimately improve maternal health outcomes in the rural area[10].

In this current study, the majority of the respondents both in urban and rural areas had some form of formal education like many other similar studies conducted among men in the southern part of Nigeria[34,41,42]. However, there were more educated men in the urban area as compared to the rural area. Similarly, all the focus group discussion participants in the urban area had some form of formal education as compared to the rural area where some of the participants had no formal education. This is consistent with the findings of the Nigerian National Demographic Health Survey, 2013 where more educated men were found in the urban area[28]. Similar findings have also been documented in other parts of the world. A study conducted in Pakistan revealed more educated men in the urban area as compared to the rural area[43].

The predilection of educated men for the urban area could be because of the establishment of more academic institutions in the urban area. It could also be because of the presence of more white-collar jobs in the urban area which many

times, need some level of literacy to secure and therefore lead to the migration of educated men from different parts of the country and even expatriates into the urban area.

In this study, education was found to be a significant predictor of male involvement in birth preparedness in both urban and rural areas. This finding concurs with what was documented in a similar study in Northern Nigeria, which stated that formal education was an independent predictor of male participation in maternity care[11]. These findings may be attributed to the fact that educated men are more likely to have access to information about maternal and health care services[44]. This may, in turn, increase the confidence in the services provided by the various health facilities and therefore increase male participation as opined by participants in the FGDs that male involvement is increased when men have confidence in the health system. Some other studies also revealed that participation in maternal and child health is higher among educated men compared to uneducated men[45,46].

Besides being more common among educated men, birth preparedness was also more popular among younger men in this current study. However, there was a higher proportion of younger men in the rural area that were involved in birth preparedness as compared to their urban counterparts. The observed higher involvement in birth preparedness among younger men with higher education concurs with what obtains in Malawi where young educated couples are known to adopt strategies, which improve male involvement in maternity care[44]. It is also not too different from the situation in Northern Nigeria[11] where younger men with formal education are more involved in maternity care. This may be a result of the modern inclination in developing countries of adopting the civilization and cultural practices of advanced countries, which is more among the younger population as against the older more conservative population. These practices give preferences to women, encourage gender equity and challenge the norm of male dominance. The similarities may also be due to the resemblance of socio-demographic characteristics of participants such as shared African cultural value and age range of respondents. For instance, in our study, mean age of urban participants was 36.6 years while that of rural participants was 37.6 years which was similar to the mean age of 38.8 years for the participants in the Northern Nigeria study[11].

Men are aware of and more concerned with financial responsibilities like purchasing materials for mother and baby or saving money for mothers' health care than accompanying wife and participating in other activities like health talk. This was found in both rural and urban areas of this study and concurs with the findings in several other studies from different climes.[11, 34, 47]Men, therefore, may become ignorant of promotion and preventive health strategies and though they are particular about financial support, they may delay financial commitment until complications arise. Previous study results suggested that the pregnant women and their male partners should be given health education together to improve male awareness as this would result in a greater net impact on maternal health behaviors, compared to educating the women alone[48]. It has also been documented that even most women want their partners to be educated about how to take care of them during pregnancy[59].

There are several established benefits of accompanying wives to health facilities. Men by so doing will have greater access to information on family and reproductive health. They will also experience and appreciate the efforts being made by their spouses in bearing and rearing their children. This may lead to better inter-spousal communication and understanding leading to better performance by men in maternal and child health. However, this current study reveals that a lower proportion of men accompanied their spouses to health facilities in both urban and rural areas when compared to involvement in other components of birth preparedness like saving money and purchasing birth kits. Less popularity attached to accompanying women among men may be due to cultural and religious beliefs as

documented in another Nigerian study[11] or due to engagements in other things as documented in Ghana[50].

Even in the few cases where men accompany their wives to the hospital, they are usually marginalized from many programs relating to family and reproductive health and prevented from participating in the various activities[50]. According to respondents in the qualitative part of this study, men are known to wait outside the clinic on those few occasions that they accompany their wives. The implication of this is poor male knowledge as regards maternity care which may subsequently lead to poor male involvement in their spouses' health care. There is, therefore, a need for interventional programs and policies especially in the areas of involving men in maternal health.

Granting permission by men to spouses before family members can access maternal and child health care is a common practice in male-dominating societies of developing countries[11] as observed in this study with a slightly higher proportion of men giving their consent in the rural area as compared to their counterparts in the urban area. This finding where more rural men permitted wives and children to seek health care, however, contradicts the finding of the NDHS (2013) where more men in the urban area allowed their wives to attend and deliver in health facilities[28]. Generally speaking, 7.2% of urban women in Nigeria and 14.2% of rural women could not access any form of healthcare because of spousal refusal[28]. In Northern Nigeria, less than one-fifth (15.3%) of men permit their wives to join ANC while fewer men allow their wives to visit the health facility alone during delivery (6.2%) or in postnatal periods (6.3%). Even when women are allowed in this part of the country to visit health facilities, they are accompanied by a chaperone, commonly an elderly woman[11]. This practice in this study and other parts of developing countries where spousal consent is required before seeking medical care may be counter-productive as a delay in the decision to seek healthcare is a major contributor to maternal mortality[51].

The most frequently identified factors which discouraged male participation in birth preparedness were prolonged waiting time which was observed in a higher proportion of respondents in the urban area and time constraint or busy with other things which were observed in a higher proportion of men in the rural area. The time factor was also a major hindrance to male involvement according to participants of the FGDs. Men may ascribe this to work commitments since they are usually the breadwinner in many developing communities. Men may, therefore, be unable to spend time in health facilities with their wives and/or children[26,52] Moreover, a larger proportion of men in the urban area were discouraged from participating by prolonged waiting time and this may be because more men in urban settings are involved in salaried jobs which demand their time as compared to the rural area. It has been shown that unemployment is commoner among men in rural areas than their urban counterparts[28,53]. Besides, due to the congestion of urban health facilities as against the rural facilities, those seeking care in these locations may have less timely health care, which may discourage them from utilizing these facilities in subsequent times.

In this study, male involvement in birth preparedness is also better among men who are presently married and who are in monogamous marriages. Men who are presently with their wives may be encouraged by their spouses to participate in birth preparedness for instance as against men who were divorced, separated or widowed after the birth of the index child. Similar to this finding, men in monogamous marriages are also more involved in maternity care in Northern Nigeria[11]. Lastly, men who belonged to Hausa, Igbo and other minority ethnic groups were more likely to be involved in birth preparedness as compared to the indigenous Yoruba ethnic group. Non-indigenous men have been shown to participate more in maternal health[11]. This might be because the majority of their relatives do not live within their vicinity and therefore the only companions are their wives with whom they do things together

including joint decision making without the interference of extended families.

This research used a mixed study method in assessing male involvement in urban and rural areas of Ogun State, Nigeria. This would have ensured more detailed information in describing male involvement and associated factors in maternity care. However, the study does have some limitations. The cross-sectional nature does not allow for precise causal inferences as far as factors that are associated with male involvement in maternity care is concerned. Furthermore, male involvement was essentially assessed through the recall of such roles by the participants during the birth of their last child. There could, therefore, be under or over-reporting of their involvements. Future areas of research may include an association between male involvement in birth preparedness and maternal/newborn health outcomes.

Conclusion

Male involvement in birth preparedness was significantly better among rural respondents than the urban respondents (P<0.001). Having a tertiary education remained significant predictor of male involvement in birth preparedness in urban areas (AOR= 2.446, 95% C. I= 1.559-3.838). In the rural area, Young paternal age (AOR 0.465, 95% C.I= 0.223-0.967) and having tertiary education (AOR= 6.241, 95% C.I=1.827-21.317) remained significant predictors of male involvement in birth preparedness. Since younger men and rural dwellers have better involvement according to this study, different strategies should be targeted towards consolidating this propensity such as youth-friendly initiatives that emphasize family and reproductive health.

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Conflicts of Interest

The authors have declared no conflict of interest.

Authors Contributions

The first and second authors conceived the research idea and wrote the first draft. The first author collected and analyzed the data. All authors drafted, reviewed the manuscript and approved the final submission.

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