

Male Partner Involvement in Maternal Health: Perspective of Female Clients Accessing Care at a Tertiary Health Institution in Nigeria

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Background: The import of gender roles and support in maternal health is fast gaining global recognition. Gender- based power relations, dimensions of health inequalities and overall maternal survival are linked to levels of partner involvement.

Objective: To assess male partner involvement in maternal health from the perspective of: female clients accessing obstetrics care at a federal medical center (FMC) in Nigeria.

Materials and Methods: Multistage sampling technique were used in enrolling 378 female clients at the Obstetrics clinics FMC Owerri Nigeria, into this health facility based cross-sectional descriptive study. Consenting participants completed via exit- interview, a semi- structured questionnaire designed from relevant literatures. Statistical analysis was done using Statistical Package for Social Sciences version 22 with Chi square and Fishers tests at $p < 0.05$.

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Results: Majority, 360 (95.2%) of respondents had good knowledge on role of male partners in maternal health, 311 (82.1%) had good perceived knowledge on role by male partners. while 161 (42.6%) reported good level of partner involvement. There are associations between extent of male involvement and age ($p= 0.000$), marital status ($p= 0.044$) and highest level of educational attainment ($p=0.000$) among male partners

Conclusions: This study reveals that despite apparently good level of knowledge on role of males in maternal health by participants and their male partners, there was poor partner involvement, which had associations with age, marital status and highest level of educational attainment. There is need to sustain adequate knowledge of roles in maternal health and ensuring effective male partner involvement via quality couple- based attitudinal change education on maternal health.

Keywords: Maternal health; male partner support; Owerri Nigeria; tertiary hospital.

1. INTRODUCTION

Maternal health refers to a state of complete physical, mental and social wellbeing in a woman during pregnancy, child delivery and the postpartum [1]. In health systems, maternal health care services constitute a range of preventive and curative health services essential to the health of women aged 18- 49years [1]. Assumptions and inferences suffice that provision of, access to, and usage of quality maternal health care services help in averting maternal deaths and improving maternal health [2-3]. This is achieved by monitoring and ensuring that women remain healthy throughout pregnancy, averting impediments to the progress of labour, delivering safely to healthy babies and recovering fully and timely from the physiological changes that occur therein [2-3].

Beyond the traditional health systems that focus on health equity-producing social policy [4-5] the Primary Health Care (PHC) approach to health is the cornerstone of universal health systems, [6]. Maternal health care is a core component of PHC [6-7]. Post Alma Ata declaration of 1978, the PHC remains a primary focus of care [7-8] as several international agenda (e.g. the Millennium Development Goals (MDG), the Sustainable Development Goals (SDG) have brought further impetus to women's health and the PHC Movements [9,10,11]. For instance, the SDG committee set to reduce global maternal mortality to 70 deaths per 100,000 live births by 2030 [10]. Nonetheless, maternal morbidity and mortality remain abysmally high globally. These poor maternal health indices are linked to inadequacies in accessing maternal health care services [12,13,14,15]. An estimated 800 women die daily from preventable pregnancy related causes, ninety- nine percent of which occurs in developing countries like Nigeria. [1] Also, Nigeria ranks the second highest in maternal

mortality, contributing 14% of maternal deaths worldwide [1,12,13,14].

The involvement of males in maternal health ranges in strategies from education, awareness and knowledge to evidence-based active participation [16] and in two dimensions [17]. males as supportive partners in women's reproductive health needs, choices, and rights as well as male's own reproductive and sexual behaviors. This involvement comprises a gamut of care and support that males offer their partners who are pregnant or experiencing the outcome of pregnancy, to avert or reduce maternal morbidity and or mortality [1,3]. In the study setting there is often strong aversion of involving these key stakeholders. Rather than contribute actively, male partners are often left out, albeit passively engaged in maternal health issues such as policies on women reproduction and child health programs [18].

The United Nations Population Fund recognizes the import of active males' inclusion in maternal health issues [12]. It thus proposes a new role for males, with the slogan- instead of being the "threat" that the empowerment program has to contain with, men should be seen as central players in improving women's health status [17]. In this era of complexities in sexual and reproductive health paradigms such as sexual identities, orientations, connotations and constructs, developing new frameworks implies that attention has to be drawn to the non-inclusiveness of males in previous sexual and reproductive health initiatives and the need for their inclusion as key players in emerging agenda [17] Also, high maternal morbidity and mortality constitute financial burden to the family on one hand and social, economic cum psychological burden to the populace, on the other.

In the Public Health domain, few issues are as hotly discussed as maternal health. Current research into its underpinnings frequently focuses on the role of various stakeholders. Also, information on male involvement in maternal health in Nigeria is backed by little published literature. Where studies are done, they centered on maternal health in general or on the role of male partners, with little or no considerations on the views of their female partners [19,20,21]. It has particularly become apt and key to our trajectory to document the perceptions of females on the aforesaid role in our study area. This will lead to a better understanding of the role of males, indicate the degree of its worth and act as a step in determining its effectiveness. Expectedly, appropriate practical public health intervention strategies based on the study findings will be valuable investments towards improving maternal health. The findings of the index study will help bridge knowledge gaps, guide recommendations and set an adaptive agenda for health policy formulations. This study thus set out to assess male involvement in maternal health from the perspective of: female clients accessing obstetrics care at the tertiary level of the health care system in Nigeria

2. MATERIALS AND METHODS

Study design: This was a health facility based cross-sectional descriptive study, conducted from June to December 2017.

Study setting: The study area was Owerri, comprising three local government areas (LGA), one of which (Owerri municipal) hosts the Capital of Imo state and the study site - Federal Medical Center Owerri. The Area had a projected population of 127,213 persons and a land area of 58 square kilometres [22,23]. The residents were mainly civil servants, traders, farmers, artisans and students [22,23].

The Hospital was 700 bedded, offered comprehensive and specialist health care to the communities within its catchment and was a referral center to and from secondary and primary health institutions [24]. It served as a centre for the training of post-graduate students of medicine and allied sciences and undergraduates in medicine (Madonna University Nigeria and Imo State University) on some Medical Postings; The Obstetrics clinic ran daily from 8am to 4pm with an average attendance of 120 clients per clinic day and an average of 3,000 per month [24].

Data collection employed a questionnaire designed from relevant literature [15-21]. This consisted of four sections a) Socio-demographics of respondents and male partners of respondents, - e.g. age, marital status, highest level of education, occupation, b) Knowledge of role of male partners and perceived level of knowledge of role of male partners in maternal health among respondents, c) Perceived extent of involvement of male partners in maternal health among respondents, d) Factors affecting perceived extent of involvement of male partners in maternal health among respondents.

Study participants: The target population consisted of registered clients accessing care at the Obstetrics clinic of the FMC Owerri.

Inclusion criteria: All Clients who were [18- 39] years of age, had at least one child, registered at the Obstetrics clinic of the FMC for at least six months prior to this survey, had accessed care for at least two times at the clinic (This allowed adequate time for issues related to male involvement, if any, to have manifested). Clients who had male partners that directly or indirectly influences their decisions on maternal health care.

Exclusion criteria: Such clients, as above, whose conditions may have affected their responses. E.g. those with challenges with hearing or speaking. Also, those limited by pregnancy associated factors, e.g. vomiting and excessive tiredness. Clients who declined full informed consent to participating in the study

2.1 Variables

The dependent outcome variable for this study was male involvement (knowledge and extent), while the independent variables were: Socio-demographics - age, marital status, ethnicity, religion, highest level of education and occupation

2.2 Data Sources/Measurement

Frequencies, percentages and rates of the variables.

Bias: The questions were sensitive and could lead to reporting bias. Assuring clients of strict confidentiality of their responses and the anonymity of study tools reduced these effects. Data were collected on alternate week days i.e. Monday, Wednesday, Friday on first week,

Tuesday, Thursday on the second week, until the minimum sample size calculated was attained. This was to reduce the bias for day-specific clinic attendance.

2.3 Study Size

Sample size determination: The sample size was determined based on the estimate population of 3,000 registered clients accessing obstetrics care at the setting per month, using the sample size formula for cross-sectional studies in populations greater than 10,000 stated thus [25]: $n = Z^2 pq / d^2$, where n = minimum sample size; Z = Standard normal deviate set at 1.96 (95% confidence interval); p = prevalence of male involvement in maternal health set at 50 per 100 clients, since no such study from documentation has been done in the setting [25], while $q = 1 - p$, i.e. $p = 0.5$ and $q = 0.5$, with d = Maximum allowable error (5% = 0.05). the total sample size calculated was 384 clients. Since the sample size estimated was more than 5% of the population, which was in turn less than 10,000, Then the sample size was adjusted using the formula [25]: $(nf) = n / 1 + (n/N)$, where N = target population, $(nf) = 300$. However, 378 questionnaires were administered.

Sampling technique: This survey employed systematic random sampling technique. Complete enumeration method was adopted with the clinic register as the sampling frame. A sampling fraction was determined by dividing the number of clients booked for appointment on each data collection day by the minimum number of clients interviewed. Then, every n^{th} (5^{th}) eligible consenting client presenting for care was enrolled into this study and interviewed consecutively at the exit point after she had received maternal health care services, until the target sample size was attained.

2.4 Data Collection

Data were collected using pre-tested, client- exit interviewer-administered semi-structured questionnaire. To ensure data quality, training of data collection team, field monitoring and day end reviews were done

2.5 Data Management and Analysis

Score Grading: A 10- item scale for knowledge of and extent of male involvement was used. Questions in sections b-d, had dichotomous options, 'Yes' or 'No'. The answers were mixed

up, to avoid leading the respondents. The scoring was adapted with modification from the work by Memon and others [26]. In each category, Correct Response to any question was scored one [1] and Incorrect Response was scored zero. Raw score was calculated and transformed to a scale of zero (0) to 10. A total score of, zero (0)- four (4) was considered poor, five (5) – seven (7) was considered fair and eight (8)-10 was considered good,

Statistical methods: The data were reviewed, entered into the computer and cleaned via range and consistency checks. Descriptive and analytical statistics of the data were carried out using statistical package for social sciences (SPSS) Windows version 22.0 [27]. Quantitative data were analysed by computing frequency tables, presented as simple frequencies and percentages. Bivariate analysis using chi-square and, fishers' tests were used to determine associations between variables, with level of significance set at < 0.05 .

2.6 Pre-test

Pre-test was conducted on 20 clients who were not enrolled in this study. Reliability of the research tool was ensured using test-retest method and the outcome, used to modify the tool

3. RESULTS

Table 1. Presents the socio- demographic characteristics of respondents and male partners of respondents. The response rate is 100%. The study reveals the mean, median, mode and standard deviation for age are 29, 27, 26, and 5.16 years respectively. The reported mean, median, mode and standard deviation for age is 35, 35, 30, and 5.69 years respectively. Majority of respondents 350 (92.6%) are currently married, 298 (78.8%), have tertiary level of education, and 286 (75.7%) resides outside the municipality. Majority of male partners 303 (80.2%), attained tertiary level of education, while 265 (70.1%) resides outside the municipality.

Table 2. Highlights the knowledge of role of male partners and perceived level of knowledge of role of male partners in maternal health among respondents. Majority, 360 (95.2%) of respondent had good knowledge on role of male partners in General maternal health. On the perceived levels of knowledge on role in various components of maternal health by male

partners, 350 (92.6%) had good knowledge on antenatal care, 334 (88.4%) on delivery Services, 284 (75.1%) on postpartum Care and 311 (82.1%) on maternal health generally.

among respondents. Perceived levels of involvement in the components of maternal health by male partners were reported thus 181 (47.9%) had good level of involvement in antenatal care, 176 (46.5%) during delivery 172 (45.5%) postpartum and 161(42.6%) in maternal health. generally.

Table 3. Shows the perceived extent of involvement of male partners in maternal health

Table 1. Socio- demographic characteristics of clients and male partners of clients accessing obstetric care at a tertiary health facility in Imo state Nigeria from June to December 2017

Characteristics	Frequency (N=378)	Percentage (%)
Age of clients (years)		
18-19	106	28
20-29	226	59.8
30-39	45	11.9
40-49	1	0.3
Mean	29	
Median	27	
Mode	26	
Standard Deviation	+ 5.16	
Age of clients' male partners (years)		
<25	1	0.3
26-35	216	57.1
36-45	146	38.5
>46	15	4
Mean	35	
Median	35	
Mode	30	
Standard Deviation	+ 5.69	
Marital status		
Never married	5	1.3
Separated	5	1.3
Divorced	1	0.3
Widowed	0	0
Co-habiting	17	4.5
Not Currently married	28	7.4
Currently married	350	92.5
Religion of clients		
Christianity	361	95.5
Islam	17	4.5
Religion of male partners of clients		
Christianity	352	93.1
Islam	14	3.7
Traditionalist	3	0.6
Highest level of education attained by clients		
Nil formal	10	2.6
Primary	10	2.6
Secondary	60	15.9
Tertiary	298	78.5
Formal	368	97.4
Highest level of education attained by male partners of clients		

Characteristics	Frequency (N=378)	Percentage (%)
Nil formal	6	1.6
Primary	6	1.6
Secondary	63	16.7
Tertiary	303	80.2
Formal	372	98.4
Occupation of clients	58	15.3
Unemployed		
Civil service	123	32.5
Trading	67	17.7
Teaching	42	11.1
Nursing	39	10.3
Schooling	27	8.5
Artisanship	22	5.6
Employed	320	83.8
Occupation of male partners of clients		
Civil service	159	42.1
Trading	146	38.6
Artisanship	63	16.7
Ethnicity of clients and male partners of clients		
Hausa.	11	2.9
Ibo	319	84.4
Yoruba.	48	12.7
Residence of clients		
Within the municipality	92	24.3
Outside the municipality	286	75.7
Residence of male partners of clients		
Within the municipality	113	29.9
Outside the municipality	265	70.1

Table 2. Knowledge of role of male partners and perceived level of knowledge of role of male partners in maternal health among clients accessing obstetric care at a tertiary health facility in Imo state Nigeria from June to December 2017

Variables	Frequency (N= 378)	Percentage (%)
Clients' knowledge of role of male partners in General Maternal Health		
Good	360	95.2
Fair	14	3.7
Poor	4	1.1
Perceived knowledge of role in Antenatal care By male partner		
Good	350	92.6
Fair	20	5.3
Poor	2	2.1
Perceived knowledge of role in Delivery Services male partner		
Good	334	88.4
Fair	32	8.7
Poor	12	3.2
Perceived knowledge of role in Postpartum Care male partner		

Variables	Frequency (N= 378)	Percentage (%)
Good	284	75.1
Fair	73	19.3
Poor	21	5.6

Table 3. Perceived extent of involvement of male partners in maternal health among clients accessing obstetric care at a tertiary health facility in Imo state Nigeria from June to December 2017

Variables	Frequency (N= 378)	Percentage (%)
Perceived extent of involvement of male partners in Antenatal care		
Good	181	47.9
Fair	67	17.7
Poor	130	34.4
Perceived extent of involvement of male partners in Delivery services		
Good	176	46.5
Fair	79	20.9
Poor	123	32.6
Perceived extent of involvement of male partners in Postpartum care		
Good	172	45.5
Fair	52	18.7
Poor	154	40.7
Perceived extent of involvement of male partners in General Maternal Health		
Good	161	42.6
Fair	74	19.6
Poor	143	37.8

Table 4. The factors affecting perceived extent of involvement of male partners in maternal health among clients accessing obstetric care at a tertiary health facility in Imo state Nigeria from June to December 2017

Characteristics	Perceived extent of involvement in maternal health by of male partners of clients Test statistic				p value
	Frequency (N= 378)		Percentage (%)		
	Poor (%)	Fair (%)	Good (%)	Total (%)	
Age(years)					
>35	116 (30.7)	62 (16.4)	62 (16.4)	217 (57.4)	$\chi^2=123.34$ 0.000*
>36	27 (7.1)	142 (37.6)	142 (37.6)	161 (42.6)	
Total	143 (37.8)	74 (19.5)	161(42.6)	378 (100)	
Marital status					
Not Currently married**	8 (2.1)	3 (1)	17 (4.4)	28 (7.4)	f= 4.0507 0.044*
Currently married	135 (35.7)	135 (35.7)	144 (38.1)	350 (92.6)	
Total	143 (37.8)	74 (19.5)	161(42.6)	378 (100)	
Religion					
Christianity	136 (36)	72 (19)	206 (54.5)	352 (93.1)	f= 0.0286 0.871
Others ***	7 (1.9)	2 (1)	9 (2.4)	16 (4.2)	
Total	143 (37.8)	74 (19.5)	161(42.6)	378 (100)	
Highest level of educational					

Perceived extent of involvement in maternal health by of male partners of clients Test statistic					
Characteristics	Frequency (N= 378)		Percentage (%)		p value
	Poor (%)	Fair (%)	Good (%)	Total (%)	
attainment					
Nil Tertiary****	25 (6.6)	23 (6.1)	17 (98.3)	75 (19.8)	
Tertiary	118 (31.2)	51 (13.5)	144 (38.1)	303 (80.2)	$\chi^2=14.193$ 0.0001*
Total	143 (37.8)	74 (19.5)	161(42.6)	378 (100)	
Ethnicity					
Ibo	96(25.4)	63(16.7)	159 (42.1)	319 (84.4)	
Non- Ibo	47 (12.4)	11 (3)	58 (15.3)	59 (15.6)	$\chi^2=0.0255$ 0.978
Total	143 (37.8)	74 (19.5)	161(42.6)	378 (100)	
Residence					
Within the municipality	50 (13.2)	31 (8.2)	71 (18.8)	113 (29.9)	$\chi^2=0.6362$ 0.200
Outside the municipality	93 (24.6)	33 (8.7)	146 (38.6)	265 (70.1)	
Total	143 (37.8)	74 (19.5)	161(42.6)	378 (100)	

* Statistically significant association = $p \leq 0.05$, f= Fisher's exact, χ^2 = Chi square, ** Not Currently married- (Never married, Separated, Divorced, Widowed, Co-habiting).

*** Others - (Islam and Traditionalists). **** Nil Tertiary - (Nil formal, Primary, Secondary)

Table 4. summarizes the factors affecting perceived extent of involvement of male partners in maternal health among respondents. There are statistically significant associations between extent of involvement in maternal health among male partners of respondents and age ($\chi^2 = 123.34$, $p = 0.000$), marital status ($\chi^2 = 4.0507$, $p = 0.044$) and highest level of educational attainment ($\chi^2 = 0.0255$, $p = 0.000$).

4. DISCUSSION

This cross-sectional descriptive study determines male involvement in maternal health from the perspective of: female clients accessing obstetrics care in a tertiary health facility in Nigeria. Though there are a few outliers, this study reveals that findings on socio-demographics such as mean ages of participants and male partners respectively, proportion of the currently married, those that have tertiary level of education and resides outside the study setting are in concert with submissions of related studies [1,16,17,19,21]. For instance, data elsewhere suggest that an appreciably higher proportion of the participants in the reference studies were married during the period.

The current research determines the knowledge on role of male partners in maternal health.

Among participants as well as their perceived level of knowledge on these roles by their male partners. This finding draws comparative differences from reports of studies in Kaduna northwest Nigeria, [28] where only 1.2% of women had good knowledge of maternal health and in Nnewi southeast, Nigeria [29] where 68.25% of women had good knowledge of maternal health. These variations in reports could be explained in the light of significant differences in methodologies such as study settings, study subjects, sampling and data collection techniques. It is imperative that sustenance of these high levels of knowledge among respondents and their male partners, as shown in the index study be ensured.

The present study did not consider knowledge of women with respect to specific components of maternal health (antenatal care, delivery services and postpartum care). This has obvious limitations that should be considered while interpreting the findings of this study. However, findings of studies in Ethiopia [15], Pakistan, [30] and Ilorin-east LGA southwest Nigeria [31], where antenatal care is the most reported, are still at variance deductively [15,30,31]. On delivery services, 62.1% of women studied in Ethiopia has above average knowledge and noted that the reason women attend the clinic is to access skilled attendant [15].

The findings of the present research on the perceived level of knowledge on roles of male partners generally and specifically on components of maternal health within the scope of this study (antenatal care, delivery services and postpartum care). These findings are consistent with the findings in Osogbo southwest Nigeria, where 98.9% of male partners reported awareness of the need of maternal health generally, while 81.4% of them comprehend the role of male support [32]. A qualitative study in Ghana, suggested that many men understand the relevance of male involvement and skilled care pre-, peri- and post- partum [33]. Since most reports are on antenatal care and general maternal health, with apparently no report in literature to corroborate or negate this finding, it is key that these citations on the components of maternal health, need to be validated.

The present study also assesses the perceived extent of male partner involvement in maternal health among study participants. It reports apparently poor perceived levels of involvement in slightly less than half of male partners in antenatal care. These findings are consistent with findings of studies in Accra Ghana, Kano northwest Nigeria and in Osun southwestern Nigeria respectively [16,17,32]. On the contrary, Ibrahim *et al.*, in Maiduguri north-eastern Nigeria reported that a higher proportion (65.4%) of male partners attended antenatal care [19]. Though there is dearth of studies on extent of male partners involvement in maternal health generally, information relatively abound on male involvement in antenatal care. Such scenarios were encouraged by health promotion activities incorporated in ANC by ensuring male partners involvement, via the gift of free insecticide treated bed nets (ITNs) in prevention of malaria in pregnancy services in India [34] provision of free ITNs during HIV testing in Rwanda [35] provision of free iron-folic acid (IFA) to encourage adherence to maternal IFA supplementation during pregnancy in Indonesia [36], provision of free intermittent preventive treatment (IPTp) with sulphadoxine - pyrimethamine (SP) to encourage adherence to IPTp- SP in Uganda [37] and provision of free IPTp- SP at health facilities operating under the cost-recovery model in Mali [38].

The findings of the current study on the perceived extent of involvement of male partners in delivery services, postpartum care and general maternal health respectively among study participants, reports apparently poor

perceived levels in slightly less than half of male partners. Findings elsewhere on male partners involvement during labour and delivery ranged from 27.1% in Nigeria [16] to 36.6% in Ghana [33], while male partners involvement in postpartum care ranged from less than a quarter of male participants in Ghana [33] to 29% in Nigeria [16]. Another study in Osun Nigeria by Olugbenga [32], corroborated these findings.

In the current study, the bivariate analysis reveals statistically significant association between extent of male partners involvement in maternal health among study participants and age, marital status and highest level of educational attainment respectively. This finding is in concert with findings of previous documentations elsewhere indicating supportive evidence on association between these variables. In similar inferences, use of maternal health care services such as free ITNs in prevention of malaria by women in India [34] and Pakistan [39] were positively influenced by their husband's highest level of educational attainment. Olugbenga *et al.* In Osun southwestern, Nigeria concluded that comparatively, couples that attained tertiary level of education and the currently married, had good levels of male partners 'involvement in maternal health [32]. We suggest that relevant stakeholders ensure careful considerations of these determinants and deterrents in the provision of quality support systems in maternal health care.

5. CONCLUSIONS

The index study reveals apparently good level of knowledge on role of male partners in maternal health by participants and their partners (in components and in general), and poor level of male partner involvement (in components and in general). It also shows considerable evidence of associations among extent of male partner involvement in maternal health, with age, marital status and highest level of educational attainment. The researchers suggest that efforts be intensified to sustain the high level of knowledge of roles in maternal health by participants and their male partners via comprehensive positive attitudinal change education in Maternal Health. There is need for improving and ensuring effective male partner involvement in Maternal Health via quality couple- based cross-sectoral approach cum collaboration among relevant stakeholders to intensify the effect of behavioral change

interventions that target socio- demographic differences in enhancing levels of male partners involvement in maternal health.

6. STRENGTHS AND LIMITATIONS OF THE STUDY

The strengths of this study include: the 100% response rate obtained, pre-testing of study instrument to standardise it. Studies based on self-reports reflect only short-term or average occurrences, may often overestimate it and may not match actual behaviors. However, our sample was made up exclusively of participants who were already engaged in Obstetric care, who may have been more likely than those not engaged in medical care to report correct involvement of their male partners. The present research assessed male involvement in maternal health from the perspective of: female clients accessing obstetrics care, a fact that should be considered while interpreting the findings of this study. However, these findings could help gauge and understand outcome variations. The researchers thus suggest that further studies are warranted.

DISCLAIMER

The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

CONSENT

As per international standard or university standard, the participants' written full informed consent for the conduct and publication of this study has been collected and preserved. Study participants were assured of confidentiality and that they were free to refuse or withdraw from the study at any time without any penalty. The study's aim and objectives were explained to each participant prior to interview

ETHICAL APPROVAL

The study has been examined and approved by the Madonna University ethical committee

through the Head Department of Community Medicine. Permission to conduct and publish the study was sought and obtained from the relevant authorities at Federal Medical Centre Owerri. All authors hereby declare that the study has been performed as per University standard, or international ethical standards laid down in the 1964 Declaration of Helsinki.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. World Bank. Maternal and reproductive health services <http://go.worldbank.org/5FKPTFvoko>, accessed 15th August; 2008.
2. Obionu CN. Primary health care for developing countries. Second edition. Institute for Development Studies UNEC. Enugu. 2007;221.
3. Ndie EC, Idam C, Demographic characteristics of women on utilization of maternal health services at Abakaliki urban, International Journal of Nursing and Midwifery. 2013;5(8):139-144
4. Starfield, B "Politics, primary healthcare and health". J Epidemiol Community Health. 2011;65(8):653–655. DOI:10.1136/jech.2009.102780.
5. World Health Organization. Declaration of Alma-Ata. Adopted at the International Conference on Primary Health Care, Alma-Ata, USSR, 6–12 September 1978.
6. White F. Primary health care and public health: foundations of universal health systems. Med Princ Pract 2015;24(2):103-16. doi:10.1159/000370197
7. Cueto M. "The Origins of primary health care and Selective primary health care". Am J Public Health. 2004;22.94(11):1864–1874. DOI:10.2105/ajph.94.11.1864.
8. World Health Organisation (WHO). Maternal health. In: Health topics. Geneva: WHO; 2011.
9. Millennium development goal initiatives from google. Available: www.who.int/topic/millennium-development-goal/maternal-health/en/1003452 Accessed 26/10/2017.
10. World Health Organisation (WHO). Sustainable development goals - World Health . from google.

- Available: <https://www.who.int> > Health topics Accessed 05/07/2021
11. Sai FT. Why should Africa's woman continue crying for life? Second Annual Professor Olikoye Ransome Kuti International Policy Dialogue in Primary Health Care and Reproductive Health. Women's Health and Action Research Centre publishers. Benin. 2007;20-22.
 12. United Nations Population Fund (UNFPA). Sub-saharan Africa's maternal death rate down 41 percent. Available @ <http://africa.unfpa.org/public/cache/offence/news/pid/10767>. Accessed 29 January 2013
 13. World Bank. Trends in maternal mortality: 1990-2010. Estimates developed by the World Health Organisation (WHO), United Nations Children's Fund (UNICEF), United Nations Population Fund (UNFPA) and World Bank. Available online at <http://data.worldbank.org/indicator/SH.STA.MMRT>. Accessed 6th, February 2013
 14. Doctor HV. Intergenerational differences in antenatal care and supervised deliveries in Nigeria. *Health Place*. 2011;17(2):480-9. DOI: 10.1016/j.healthplace.2010.12.003.
 15. Citation: Godefay H, Byass P, Graham WJ, Kinsman J, Mulugeta A. Risk Factors for Maternal Mortality in Rural Tigray, Northern Ethiopia: A Case-Control Study. *PLoS ONE* 2015;10(12): e0144975. DOI:10.1371/journal.pone.0144975
 16. Okeke EC, Oluwo SO, Azil EI. Women's perception of male's involvement in maternal healthcare in Rivers State, Nigeria. *International Journal of Health and Psychology Research*. 2016;4(1):9-21.
 17. Mangeni JN, Mwangi A, Mbugua S, Mukthar VK. Male involvement in maternal healthcare as a determinant of utilization of skilled birth attendants in Kenya. *East African Medical Journal*. 2012;89(11):372-383.
 18. Mathew RD, Marcia CI. Men's influences on women's reproductive health. *Medical Anthropological Perspective of Social Sciences and Medicine*. 2004;59:1379-1395.
 19. Ibrahim MS, Idris SH, Abubakar AA, Gobir AA, Bashir SS, Sabitu K. Determinants of male involvement in birth preparedness among married men in two communities of rural northern Nigeria. *Journal of Community Medicine and Primary Health Care*. 2014;26(1):44-58.
 20. Vikash KKC, Adikhari S. Husband's participation in pregnancy care: the voices of Nepalese men. *Proceedings of the 26th IUSSP International Population Conference*; 2009; Marrakech, Morocco. Available: <http://www.iussp.org/marrakech2009/index.php> accessed Mar 20th, 2010.
 21. Iliyasu Z, Abubakar IS, Galadanci HS, Aliyu MH. Birth preparedness, complication readiness and fathers' participation in maternity care in a northern Nigerian community. *African Journal of Reproductive Health*. 2010;14(1):21-32.
 22. Owerri the free encyclopaedia Available: <http://www.lmostate.gov.ng> Accessed 2nd August, 2016.
 23. Evaluation of environmental sanitation in Owerri Municipal. Available @ www.medicaljournal.com > Accessed 2nd August 2016.
 24. Amala C, Ikede A, Ngwu D, Achekie U. Practice of universal precautions among doctors and nurses of FMC, Owerri, Imo State, Nigeria. Thesis submitted to Madonna University Nigeria. 2015;27.
 25. Araoye MO. Research methodology with statistics for health and social sciences. Nathadex Publications, saw-mill, Ilorin 2nd ed. 2008;115- 122.
 26. Memon MS, Shaikh SA, Shaikh AR, Fahim MF, Mumtaz SN, Ahmed N. An assessment of knowledge, attitude and practices towards diabetes and diabetic retinopathy in a suburban town of Karachi. *Pak J Med Sci*. 2015;31:183-188.
 27. Statistical Package for Social Sciences (IBM SPSS) 22.0 version. Armonk NY: IBM United States. IBM Corp; 2013.
 28. Nuhu NB, Babayo T, Hadiza I, Farouk A, Kelly DT. Knowledge and perception of maternal health in Kaduna state, Northern Nigeria. *African Journal of Reproductive Health*. 2010;14(3):71-76
 29. Nnebue CC, Ebenebe UE, Adinma ED, Iyoke CA, Obionu CN, Ilika AL. Clients' knowledge, perception and satisfaction with quality of maternal health care services at the primary health care level in Nnewi, Nigeria. *Nigerian Journal of Clinical Practice*. 2014;17(5):594-601.
 30. Tanveer S, Seemi F, Rahana R, Shehazadi S. knowledge and awareness regarding antenatal care and delivery among pregnant women, *J Med. Sci*. 2015;23(2):88-91.

31. Adewoye KR, Musa IO, Atoyebi OA, Babatunde OA. Knowledge and utilization of antenatal care services among women of child bearing age in Ilorin-East LGA, North Central Nigeria. *International Journal of Science and Technology*. 2013;3(3):2224-3577
32. Olugbenga BA, Asekun OE, Adewole AO, Adeomi AA, Olarewaju SO. Perception, attitude and involvement of men in maternal health care in a Nigerian community. *Journal of Public Health and Epidemiology*. 2013;5(6):262-270.
33. Ganle JK, Dery I. 'What men don't know can hurt women's health': a qualitative study of the barriers to and opportunities for men's involvement in maternal health care in Ghana. *Reproductive Health*. 2015;12:93.
DOI: 10.1186/s12978-015-0083-y
34. Tilak R, Tilak VW, Bhalwar R. Insecticide treated bennet strategy in rural settings: can we exploit women's decision-making power? *Indian Journal of Public Health*. 2007;51(3):
Accessed from: <http://www.ijph.in> on June 07, 2016, IP: 105.112.17.84]
35. Pâfs J, Musafili A, Binder-Finnema P, Klingberg-Allvin M, Rulisa S, Essén B 'They would never receive you without a husband': Paradoxical barriers to antenatal care scale-up in Rwanda. *Midwifery*. 2015;3(12):1149-1156.
DOI: <http://dx.doi.org/10.1016/j.midw.2015.09.010>.
36. Ari LA Khusun WH, Achadi EL, Ocviyanti D, Shankar AH. Role of family support and women's knowledge on pregnancy-related risks in adherence to maternal iron-folic acid supplementation in Indonesia. *Public Health Nutrition*. 2016;1-11.
DOI: 10.1017/S1368980016001002
37. Mbonye AK, Yanow S, Birungi J, Magnussen P. A new strategy and its effect on adherence to intermittent preventive treatment of malaria in pregnancy in Uganda. *BMC Pregnancy and Childbirth -BMC series ¿ open, inclusive and trusted*. 2013;13:178.
DOI: 10.1186/1471-2393-13-178
38. Klein MC, Harvey SA, Diarra H, Hurley EA Rao N, Doumbia DS. There is no free here, you have to pay": actual and perceived costs as barriers to intermittent preventive treatment of malaria in pregnancy in Mali. *Malaria Journal*. 2016;15:158.
DOI: 10.1186/s12936-016-1210-0
39. Nisar YB, Aurangzeb B, Dibley MJ, Alam A. Qualitative exploration of facilitating factors and barriers to use of antenatal care services by pregnant women in urban and rural settings in Pakistan. *BMC Pregnancy and Childbirth BMC series – open, inclusive and trusted*. 2016;16:42.
DOI: 10.1186/s12884-016-0829-8

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