

■ Original Research Article

Male Involvement in Birth Preparedness: A Cross Sectional Study of Clients Attending General Hospitals in Kaduna State, Northern Nigeria

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Abstract

Introduction; Maternal mortality has continued to be a major public health challenge to health systems worldwide. Although there is a substantial decline in maternal deaths and a global progress to in reduction of maternal mortality ratios (MMR), the ratios are still much higher throughout sub-Saharan Africa when compared with other regions. A key strategy that can reduce the number of women dying from such complications is making a birth plan that constitutes birth-preparedness and complication-readiness measures for pregnant women, their spouses and their families. Birth-preparedness and complication-readiness is a comprehensive package aimed at promoting timely access to skilled maternal and neonatal services. Male involvement will enable men to support their spouses to utilize emergency obstetric services early and the couple would adequately prepare for birth and ready themselves for complications. This would lead to a reduction in all three phases of delay and thereby positively impact birth outcomes. **Aim:** To determine the level of involvement of male partners in birth preparedness and complication readiness among clients attending General Hospitals in Kaduna State, Northern Nigeria. **Methodology:** The study was a cross sectional study that collected quantitative data from 334 clients who met the eligibility criteria, between December 2023 to February 2024. This study was an institution-based multi-center cross-sectional study conducted among couples whose wives are booked and delivered in the selected hospitals during the study period. The study population included stable partners who have had at least one child of 18 years and above and women attending postnatal clinic, first and second visit. Men or women who are mentally challenged or women that had stillbirths were excluded as they would not be in a good state of mind to answer the questions. **Result:** All of the 334 participants (84 each from 4 different hospitals) who were approached consented to the study; giving a response-rate of 100%. the data collected, was entered into the statistical software and analyzed using descriptive statistics such as mean, median and mode and inferential statistics such as Chi-square. The results obtained from the Statistical Package for Social Science (SPSS version 20) analysis were summarized and presented in tables and charts. **Conclusion:** In this study, the level of knowledge and awareness of birth preparedness and complication readiness of the respondents and their husbands was seen to be high. Also, male support in the birth preparedness and complication management indicating the proportion of women having support is also fairly high. However, its practice is relatively low and some of the reasons for the suboptimal levels of practice of was majorly their work schedule of the husbands as well as inadequate knowledge of BPCR.

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Keywords: Male involvement, Birth preparedness, Complication readiness.

INTRODUCTION

Maternal mortality has continued to be a major public health challenge to health systems worldwide. Although there is a substantial decline in maternal deaths and a global progress to decrease of maternal mortality ratios (MMR), the ratios are still much higher throughout sub-Saharan Africa when compared with other regions. According to Maternal Mortality Estimation Inter-Agency Group (MMEIG) report of 2013, sub-Saharan Africa had the highest MMR at 510 maternal deaths per 100,000 live births while global MMR is 210 maternal deaths per 100,000 live births. (Worku et al., 2020). The picture is no different in many African countries; According to the National Demographic Health survey 2018, Nigeria has an MMR of 512 maternal deaths per 100,000 (2). (Sodeinde et al., 2020)

The 'Three Delays Model' suggests that maternal deaths are a consequence of delays in: seeking care, reaching medical care and receiving care. Birth Preparedness and Complication Readiness (BPCR) refers to a plan organized during pregnancy in preparation for a normal birth and in case of complications. (Forbes et al., 2021). These deaths arise from pregnancy, childbirth or postpartum complications.

A key strategy that can reduce the number of women dying from such complications is making a birth plan that constitutes birth-preparedness and complication-readiness measures for pregnant women, their spouses and their families. Birth-preparedness and complication-readiness is a comprehensive package aimed at promoting timely access to skilled maternal and neonatal services. The birth-preparedness package promotes active preparation and decision-making for delivery by pregnant women and their families. This stems from the fact that every pregnant woman faces risk of sudden and unpredictable life-threatening complications that could end in death or injury to herself or to her infant. (Kakaire et al., 2011). Male involvement in maternal health care reduces maternal death by avoiding delays through a well-planned birth and complication readiness (Kakaire et al., 2011)

Statement of the Problem

In sub-Saharan Africa, pregnancy and childbirth continue to be viewed as solely a woman's issue. A male companion at antenatal care is rare and, in many communities, it is unthinkable to find male companions accompanying a woman to the labor room during delivery. However, men have social and economic power, especially in Africa, and have tremendous control over their partners. (Yidana, 2018) They decide the timing and conditions of sexual relations, family size, and whether

their spouse will utilize available health care services or not. Hence this situation makes male partner involvement critical. (Yemata et al., 2023) Improvement in maternal health and reduction of maternal morbidity and mortality needs to be realized. Strategies for involving men in maternal health services should aim at raising their awareness about emergency obstetric conditions, and engaging them in birth preparedness and complication readiness. Male involvement will enable men to support their spouses to utilize emergency obstetric services early and the couple would adequately prepare for birth and ready themselves for complications. This would lead to a reduction in all three phases of delay and thereby positively impact birth outcomes. (Kakaire et al., 2011)

Low level of knowledge of pregnancy danger signs and birth preparedness have been blamed for poor involvement of males in maternal health issues and several studies within and outside Africa have observed low level of knowledge regarding pregnancy danger signs and BPCR among male partners; in Tajikistan a study revealed that women and men have limited knowledge about possible complications during pregnancy, childbirth, and the period after childbirth. (Wiegers et al., 2010) In addition, service providers do not have an adequate professional level of knowledge of perinatal health issues and lacked basic skills to monitor their work. (Forbes et al., 2021) Low levels of knowledge of BPCR were also observed in Bangladesh and Nepal. Some socio-cultural factors also contribute a lot to the negative attitude of men and other influential community members towards pregnancy and birth plans. The role played by other relatives especially females like mothers and mothers-in-law influence the level of male involvement (Forbes et al., 2021) In Kathmandu, Nepal, it was reported in a study that only 40% of male partners accompanied their partners to ante-natal clinic, and 57% helped reduce work load at home (Mekonnen et al., 2020).

In Africa, knowledge of danger signs and birth preparedness has been shown to be low; in Tanzania for example, a study showed that only 43.9% of the men could mention at least one danger sign during delivery and in Ethiopia, a study revealed that 42% of men were aware of danger signs and only 9.4% of them were involved in birth preparedness practice. (Worku et al., 2020). In Eastern Uganda, a study conducted by Byamugisha and others showed that up to 74% of men had low involvement index; only 5% accompanied their partners to the ante-natal clinic (Kakaire et al., 2011) In Rwanda, a study showed that only 29.4% of men attended antenatal clinic (ANC) and 22.3% accompanied their wives to the labor ward (Kalisa & Malande, 2016).

In Nigeria, low level of knowledge of danger signs among men was reported in a study in the south-west. (Dada et al., 2021) A study in Benin City for example, showed that male attendance at ANC was 13.9% out of

which only 3.0% accompanied their wives to ANC always (Erhabor et al., 2021). In Zaria, north-west Nigeria, it was reported that up to 96% of pregnancies were unplanned and only 32.1% of men ever accompanied their spouses for maternity care. There was very little preparation to have skilled assistance during delivery (6.2%) (Ibrahim et al., 2014).

A lot of programmes and interventions have been put in place to promote maternal health and thus reduce maternal mortality. Since maternal health issues have often been seen as feminine or as a “woman thing” most of these interventions have focused on women. These are laudable interventions, but are however, not always associated with increased utilization of maternal health services. This is because in our socio-cultural environment, men still wield a lot of powers in decision-making in the family. Some women’s access to and utilization of maternal health services depend on their male partners. Involving male partners and encouraging joint decision-making will lead to greater utilization of health services and thus better maternal health outcomes. For BPCR to be effective, men, as well as the whole community, must be educated on danger signs, in order take appropriate action when labour starts and/or if an emergency occurs. (Adamu et al., 2020)

Rationale of the Study

Male partners in the society are key influencers of maternal health outcome due to their financial power and cultural endowment that male figure command in the society and this can be achieved by involving them in birth preparedness plus the pregnant mother through open maternity days which forms a forum for health facility/ community dialogue. (Kenyatta University et al., 2022). Thus; this study wants to assess the vital roles of these males in Birth preparedness in the study area.

Pregnancy and child birth complications cannot be predicted, therefore; anticipation and preparedness should be in place to ensure maternal and newborn safety. When men are made aware and positively involved in birth preparedness there will be a major impact in maternal newborn outcome

A pregnant mother’s death with her unborn child or newborn is devastating both to the mother, partner, family, community, health care provider and the nation at large. This is supported by International Convention for Population Development -ICPD 2025, on zero maternal and zero newborn deaths. In the African society, child bearing role is associated as a female role with male only involved in the periphery, coupled by cultural beliefs and practices. This is more intense in the Northern part of our country Nigeria this study therefore aims to assess socio-cultural factors associated with these practices, with the

aim of gathering data for further actions that can change these settings in the study area.

Aim of the Study

To determine the level of involvement of male partners in birth preparedness and complication readiness among clients attending General Hospitals in Kaduna State, Northern Nigeria.

Specific Objectives

1. To determine the knowledge of women of reproductive age regarding BPCR
2. To determine the knowledge of men of reproductive age regarding BPCR
3. To determine the proportion of women benefitting from male partner support in BPCR.
4. To explore the factors that influence male partner support in BPCR.

Research Questions

1. What is the level of knowledge of males and females regarding BPCR?
2. Do males get involved in the birth preparedness and complication readiness in Northern Nigeria?
3. What factors are associated with good knowledge of and good BPCR in the study area?

METHODOLOGY

Study Area

This study was conducted in Kaduna State, which is in the North West zone of Nigeria. The study recruited subjects from four general hospitals in three geo-political zones in the state and they are General hospital Kawo, Yusuf Dantsoho general hospital, Gwamna Awan general hospital and General hospital Kachia.

Study Design

This study was an institution-based multi-center cross-sectional study conducted among couples whose wives are booked and delivered in the selected hospitals during the study period.

Study Population

The study population included couples who have fulfilled the inclusion criteria.

Inclusion Criteria

- Stable partners who have had at least one child
- Men of 18 years and above
- Women attending postnatal clinic, first and second visit.

Exclusion Criteria

- Men or women who are mentally challenged or women that had stillbirths; as they would not be in a good state of mind to answer the questions

Sample Size Calculation

Sample size calculated using fisher's formula for cross sectional studies and survey for categorical qualitative outcome. From the study (Iliyasu et al., 2010) the proportion for male participation was 32.1%

Sample size; $N = Z^2 p(1 - p)/d^2$
N= 334

Sampling Technique

A multi-stage sampling procedure was used to select the 334 for this study.

- *Stage One:* Selection of state for study: Kaduna state was purposely selected for proximity
- *Stage Two:* Selection of Health Facilities: Four out of the fourteen Secondary health facilities in the state were selected using Simple Random sampling by balloting
- *Stage Three:* Selection of study participants: Women and men who met the inclusion criteria and consented to participate in the study were chosen consecutively from each of the health facilities; about 84 participants from each of the hospital's postnatal clinic.

Instrument For Data Collection

A structured interviewer administered questionnaire was used for data collection; it was divided into four sections. The questionnaire was adapted from the Johns Hopkins Program for International Education in Gynecology and Obstetrics (JHPIEGO) maternal and newborn health program's safe motherhood questionnaire for assessing birth preparedness and complication readiness tools and indicators. (Yemata et al., 2023) This was supplemented by variables relevant in this research, which were then modified to

fit the local context and study objectives. Serially numbered copies of interviewer-administered questionnaire will be used.

Data Collection Procedure/Analysis

The data was collected by the researcher with the help of three (3) research assistants who were trained prior to the time of data collection on ethical issues as well as data collection procedures. The questionnaires were printed in English and Hausa Language such that participants who cannot communicate in English can be interviewed. Both the benefits and the possible harms that may arise as a result of participating in the study was explained to the research participants. The informed consent forms were distributed to the potential participants after they had been given adequate information about the study. Then, after the copies of the questionnaire were filled, the researcher checks for completeness and errors.

Serial numbers were written on each copy of the questionnaire for easy entry and recall. A coding guide was developed along with the data collection tool in order to facilitate its analysis. Completed copies of the questionnaire were also reviewed to ensure consistency and completeness. Using the coding guide, the data collected, was entered into the statistical software and analyzed using descriptive statistics such as mean, median and mode and inferential statistics such as Chi-square. The results obtained from the Statistical Package for Social Science (SPSS version 20) analysis were summarized and presented in tables and charts below (A knowledge score of 50% and above is scored good while less than 50% is scored poor). Variables of the study; Dependent variable was husband participation in birth preparedness and complication readiness.

Independent variables; Socio-demographic factors: age of spouse, religion, occupational status, educational status. Respondent's wife Obstetric history: Antenatal care visit, labor, maternal status, Parity, and planning status of pregnancy. Respondents' behavioral factors: Knowledge of pregnancy danger signs, Knowledge of birth preparedness and complication readiness components, Discussion with wife about pregnancy, husband's perception of pregnancy as a woman's issue.

Scoring of Variables

Knowledge was scored as Good or Poor based on the study subject getting a score of at least 50% correctly.

Ethical Consideration

Ethical approval was obtained from the Kaduna State Ministry of Health Research Ethics Committee before going to the field for data collection to ensure the study meets all the principles and National guidelines in research involving human participants. Each participant also gave written informed consent and was free to opt out of the research at

any point in time without losing out on any benefits due to them.

RESULTS

The study was a cross-sectional study that collected quantitative data from 334 clients who met the eligibility criteria, between December 2023 to February 2024. All of the 334 participants (84 each from 4 different hospitals) who were approached consented to the study; giving a response-rate of 100%.

Table 1: Socio-demographic Characteristics of Women

Variable	Frequency	Percentage
Age group		
11-20	30	9
21-30	201	60.2
31-40	97	29
41-50	6	1.8
Occupation		
House wife	0	0
Skilled worker	33	9.9
Student	217	65
Professional	84	25.1
Educational status		
Koranic	0	0
Primary	33	9.9
Secondary	217	65
Tertiary	84	25.1
Income		
Above 200,000	4	1.2
151-200,000	30	9
101-150,000	43	12.9
51-100,000	156	46.7
0-50,000	101	30.2

Table 2: Socio-demographic Characteristics of Spouses (Men)

Variable	Freq.	%
Age group		
11-20	30	9
21-30	201	60.2
31-40	97	29
41-50	6	1.8
Occupation		
Trader		
Skilled worker		
Student		
Professional		
Educational status		
Koranic	0	0
Primary	33	9.9
Secondary	217	65
Tertiary	84	25.1

Majority of the female respondents were within the age range of 21 to 30 (60.2%), 65% were students of secondary school level. Majority of the male respondents were within the age range of 21 to 30 (60.2%), 65% were students of secondary school level.

4.2: Knowledge of BPCR among women

Table 3: Knowledge of components of BPCR of respondents

Age Group	No. of Respondent	knowledge on birth preparedness (%)	Danger signs knowledge (%)	Labor signs knowledge (%)
11-20	32	24 (75)	22 (69)	18
21-30	205	181 (88)	167 (82)	97
31-40	101	96 (95)	91 (90)	45
41-50	6	6 (100)	6 (100)	3 (50)

Majority of the women had a good level of knowledge about components of BPCR. However, with regards to age groupings, the older women (aged 41-50years) had the highest level of knowledge while the younger age group (11-20 years, had the least.

4.3: Level of involvement of Spouses in Practice of BPCR

Across the age-groups, most spouses had good Birth preparedness practices although the older ones had a slightly proportion of good practice than the other age groups. Majority of the women within all age group had levels of knowledge of BPCR between 66.88 to 85.56% while the level of practice of BPCR ranged between of 70.21 to 75.56 %.

Table 4: Level of Spousal Practice of BPCR in last Pregnancy

Age Group of spouses	Good Practice Freq (%)	Poor Practice Freq (%)	Total
11- 20	25 (83.34)	5 (16.7)	32
21-30	152 (75.63)	49 (24.37)	204
31-40	74 (76.29)	23 (23.71)	101
41-50	5 (83.34)	1 (16.66)	6

Chi-square (χ^2) $\approx$ 6.239 $df = 3$ $P = 7.815$

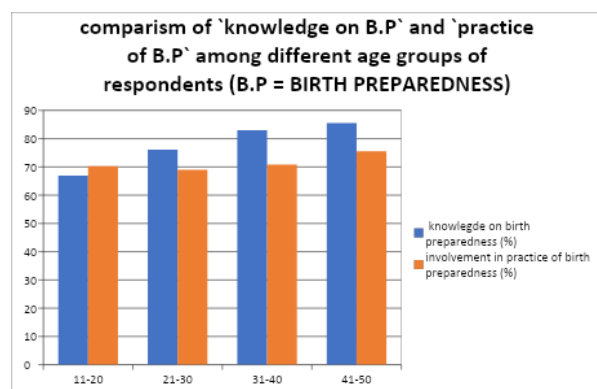


Figure 1: Comparison of Knowledge and practice of BP among respondents

4.4: Factors Associated with Practice of BPCR

Table 5: Association between Income and BPCR Knowledge

Income level	Good Knowledge	Poor Knowledge	Total
	Freq (%)	Freq (%)	
Above 200,000	4 (100)	0 (0)	4
51-100,000	143 (91.70)	13 (8.33)	156
151-200,000	21 (70)	9 (30)	30
101-150,000	33 (76.74)	10 (23.26)	43
0-50,000	98 (97.03)	3 (2.97)	101
Total	299	35	334

Chi-square (χ^2) $\approx$ 18.49 df = 4 P = 9.488

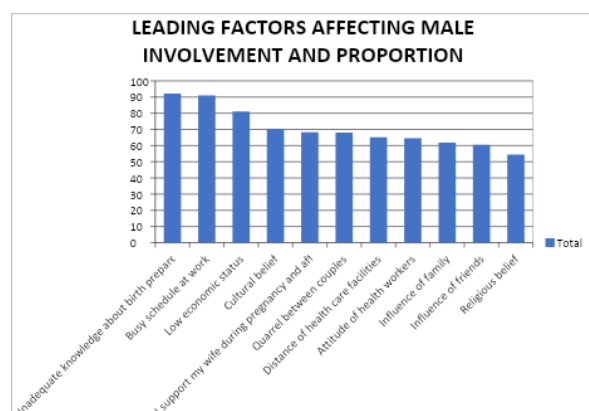


Figure 2: reasons for poor practise of BPCR among spouses

Inadequate knowledge and busy schedule are the two most common reason for male involvement in birth preparedness as shown in the above diagram. While religious believes has less effect in the respondents 54.36%.

Total of 68.31% of male respondents do support their spouses in birth plans and delivery, signifying the proportion of women that benefit from male involvement in their birth plan

Table 6: measure of preparedness based on; knowledge of ('preparedness', labour signs and danger signs), and involvement in practice of b.d

	%	Freq	Number of respondents
knowlegde on birth preparedness	89.5	299	334
danger signs knowledge percentage	83.2	278	334
labour signs knowledge in percentage	47	157	334
involvement in practice of birth preparedness	76.6	256	334

The proportion of men involved in complication management is 76.6%.

DISCUSSION

Birth preparedness, a very important labour practice was the focus of this study. One of the strategies employed in implementing safe motherhood programs to prevent maternal death is husband participation in birth preparation and complication readiness. Since the husband is the family's most powerful decision-maker. The purpose of the study was to see how common husband participation in birth preparation and complication readiness was among women. The mean age of respondents was 21 to 40years with the highest proportion (61.37%) within the ages of 21 and 30years. Almost all the women respondents over 85.56% were aware of birth preparedness through several means. A similar study conducted in Southern Nigeria by Dada et al, (2021) also revealed that more than half of the respondents were aware of birth preparedness (91.3%) of the respondents were aware of birth preparedness , but in contrast to this, was the findings from Sokoto in 2020 by Adamu et al, 2020 which showed that only few only 47.8% and 52.21% of respondents in the intervention and control groups respectively had good knowledge of BPCR ($\chi^2 = 0.537$, $p=0.464$). (9.4%) of the married men were aware of birth preparedness. The high awareness in this study may be due to the fact that the study area was an urban centre where there were more educated men, and where there were better opportunities to information through mass media, social media and civilization. More than half of the respondents had good knowledge score on birth preparedness, Male involvement was statistically significantly better in Ogun state rural areas than in urban areas ($P < 0.001$) Sodeinde et al 2020.

In this study male support in the birth preparedness and complication management indicating the proportion of women having support is 68.31% which is similar to the report by Yemata et al in 2023 where he

reported, the magnitude of husband participation in birth preparedness and complication readiness among obstetric referrals as 71.8% and also Worku et al 2020, in Northeastern Ethiopia the study showed that male involvement in birth preparedness and complication readiness to be 51.4%.

However contrary to other studies reporting lower values as men ANC attendance was low 29.4% in Rwanda by, Kalisa et al 2016 and in Ethiopia, Mackonell et al 2020, the pooled estimate of male involvement in birth preparedness and complication readiness was found to be 40.17%.

Husbands and men who earn more are more involved in birth preparedness. Another similar study carried out in Kenya (Mangeni et al, 2012) also reported that women with high socioeconomic status utilize skill birth attendant more than women with low status. In contrast to all these was a study conducted in Northern Nigeria (Ibrahim et al, 2014) which reported that husbands who earn same or less than their wives were likely to be more involved in birth preparedness. This present study however, showed no association between level of income of men and birth preparedness, it has profiled determining factors for male involvement in child preparedness in Northern Nigeria. Majority of the men had good knowledge on birth preparedness (76.6%). Several factors were identified to contribute to lack of male involvement in birth preparedness with inadequate knowledge and busy schedules factor taking the lead.

CONCLUSION

In this study, the level of knowledge and awareness of birth preparedness and complication readiness of the respondents and their husbands was seen to be high. Also, male support in the birth preparedness and complication management indicating the proportion of women having support is also fairly high. However, its practice is relatively low and some of the reasons for the suboptimal levels of practice of was majorly their work schedule of the husbands as well as inadequate knowledge of BPCR.

Recommendations

1. The policy makers should work to promote the awareness of male partners on the danger signs during postnatal period and birth preparedness, and inform the community about the importance of husbands' participation for child and mothers.
2. The health office should also strengthen health education about danger signs of pregnancy and postnatal period to increase the husbands' participation. In addition to this, counseling should be given for mothers by health care providers during antenatal, delivery and immunization period to

convince their husbands about the health risks and the actual maternal health problems which in turns make husbands save money, pay in case emergency arise, identify mode of transportation to health facility, identify blood donor ahead before emergency happen.

3. Apart from these, husband involvement strategy in at least one antenatal visit should be promoted for the readiness of complications in pregnancy, labor and after labor and to inform them by creating a link through their wives from the midwife or any attendant.
4. Also, health education should be provided for community concerning identification of danger signs in postnatal period and the role of husband in birth preparedness and complication readiness. Lastly, we recommend conducting further studies on barriers of husbands' participation in maternal care.

Limitations

This study did not utilize qualitative approach to further explore perception of men regarding their involvement in birth preparedness. Being a cross-sectional study, causal relationship could not be established. In addition, the association between knowledge of pregnancy related care and involvement in pregnancy related care could be a complex one. In as much as knowledge of BPCR can influence men's involvement, men who are more involved may likely have more knowledge as well, giving a plausibly a bidirectional relationship between knowledge of BPCR.

This study explored analysis using knowledge as the explanatory variable and various levels of involvement as the dependent variables. This study was carried out in an urban area; hence findings cannot be generalized for the rural area. Predictors of male involvement could not be explored because only few factors were significant on bivariate analysis.

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