

Assessment of Knowledge on Birth Preparedness and Complication Readiness Among Pregnant Women Attending Antenatal Clinic in Ahmad Sani Yariman Bakura Specialist Hospital Gusau North-Western Nigeria.

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ABSTRACT

Background: BPCR emerged as a key component of focused antenatal care (FANC), with the goal of encouraging timely access to skilled maternal and neonatal services. **Aim:** This study aimed to assess the knowledge, influencing factors, and practices related to BPCR among pregnant women attending ANC at YBSH. **Materials and Methods:** A descriptive cross-sectional survey design was conducted to assess knowledge on BPCR among 80 pregnant women presenting consecutively at ANC clinic of YBS Hospital, Gusau, Nigeria. A structured, self-administered questionnaire was used for data collection. Data collection span for 3 weeks, covering every Tuesday and Thursday to ensure adequate coverage. Face-to-face interviews was use. Each participant was asked to provide written informed consent prior to participation. Data was coded and analyzed using SPSS version 22. **Results:** Majority of respondents 21 (42%) are within age range of 36-45 years. Most are Secondary Cert. 20 (40%). Majority of respondents are Hausa/Fulanis 45 (65.2%). Majority 35 (70%) are Hausa-Muslim. Majority are para 1 – 2, 20 (40%). Majority had 2-4 ANC visits, 23 (46%). The Factors Influencing BP considering the grand mean of 3.0 majority agreed that all factors do influence their BPCR except that they do disagree that information and education they received from ANC affect their knowledge and readiness for birth. **Conclusion:** This study highlights the low prevalence of BPCR in the study area and the factors associated with it. Our findings underscore the need for targeted interventions to improve BPCR. Our study noted that there is a need to improve the awareness and utilization of BPCR services among pregnant women, as well as to address the factors that influence their decision-making and behavior regarding BPCR. Thus, consideration should be given to fortifying existing resources, such as frontline workers and PHC, as a strategic approach to augmenting the effectiveness of awareness initiatives.

Keywords: Birth preparedness, Complication readiness, Pregnant women, Post-partum, BPCR. Yariman-Bakura, Hospital.

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I. INTRODUCTION

BPCR is a strategy to promote the timely use of skilled maternal and neonatal care, especially during childbirth, based on the theory that preparing for childbirth and being ready for complications reduces delays in obtaining this care. BPCR is measured by various key elements including arrangement for transportation, saving money for delivery, identifying skilled birth attendant, identifying place of delivery and identifying blood donor in the case of emergency, knowledge regarding danger signs during pregnancy, labour, postpartum and newborn. The health of pregnant women, from conception to the postnatal period, must be treated as a priority. Each stage of the process should be a positive experience, enabling both mother and baby to realize their full potential for health and happiness. Globally during 2020, around 800 women per day, or around one every two minutes, died from pregnancy and childbirth related avoidable causes. Birth preparedness and complication readiness (BPCR) emerged as a key component of focused antenatal care (FANC), with the goal of encouraging timely access to skilled maternal and neonatal services. Globally maternal health has gained significant attention through initiatives such as the Millennium Development Goals (MDGs) and the Sustainable Development Goals (SDGs) particularly SDG 3.1. which aims to reduce the global maternal mortality ratio to less than 70 per 100,000 live births by 2030 (United Nations, 2022) and Guégan J-F, et al., 2018. Despite these global efforts, countries like Nigeria continue to face major challenges in maternal health. The 2021 Nigeria Demographic and Health Survey (NDHS) reported that only 43% of births were attended by skilled health personnel, and a large proportion of pregnant women still delivered at home, particularly in the northern regions (NDHS. 2021).

The effectiveness of BPCR is dependent on the level of awareness and participation by pregnant women and their families, which is often influenced by education, cultural beliefs, distance to healthcare facilities, and quality of health education received during antenatal visits (Mola M, et al., 2023; Musa A., et al., 2016). A study Umeh U et al. (2022) in northern Nigeria revealed that only 35% of pregnant women could identify at least three components of BPCR and fewer than 30% had made actual preparations for childbirth. Similar studies in rural communities have consistently identified low awareness, poverty, and gender dynamics as barriers to proper birth planning (Margaret O. et al. 2021; Onilude D, et al 2025). These findings emphasize the need for context-specific strategies to increase awareness and encourage proactive birth preparedness among pregnant women, especially in underserved areas like Zamfara State. Despite multiple maternal health initiatives in Nigeria, maternal mortality remains unacceptably high. A critical challenge contributing to this problem is the lack of adequate preparation for childbirth and potential complications. According to WHO (2023), many maternal deaths could be avoided if pregnant women and their families were better informed and prepared for emergencies. In northern Nigeria, including Zamfara State, the situation is compounded by deep-rooted cultural beliefs, low literacy rates among women, and inadequate healthcare infrastructure (Islam S, Perkins J, Siddique MAB et al., 2018). Many pregnant women begin antenatal care late, receive limited health education, and often deliver at home without skilled assistance (NDHS, 2021; Musa et al. 2023). Preliminary observations at Yariman Bakura Specialist Hospital suggest that many women attending antenatal clinics lack essential knowledge on BPCR. Some have not identified where to deliver, saved funds, or arranged emergency transportation. In cases of obstetric emergencies such as unpreparedness leads to critical delays in receiving care, often resulting in maternal and perinatal deaths. Approximately three-quarters [73%] of maternal fatalities over two decades ago are due to direct obstetric causes like severe haemorrhage that typically occur after childbirth, high blood pressure during pregnancy [pre-eclampsia and eclampsia], embolism, unsafe abortion etc. The remaining 27% deaths are due to indirect obstetric causes resulting from previously existing disease like cardiovascular diseases, HIV, severe anaemia, diabetes and hepatitis etc. (Storm F, Agampodi S et al., 2014). Despite these known causes, lowering maternal mortality and morbidity has been proven to be significantly impeded by individual pregnant women's, families', and medical professionals' delay in responding to the initiation of labour and the development of complications. BPCR facilitates the decision to seek care via two distinct approaches. To begin, birth preparedness recommends planning on having a skilled professional present during labour. If this plan is put into action, the woman can get the necessary care before any potential issues arise during the birth. Consequently, the two delays are avoided. **The second step**, complication readiness enhances knowledge about danger signs in families and communities, increasing awareness of the problem and hastening the choice to seek treatment.

II. MATERIALS AND METHODS

Study Design, Population and Area

A descriptive cross-sectional survey design was conducted among 52 pregnant women that attended the ANC Clinic of Ahmad Sani Yariman Bakura Specialist Hospital Gusau, Nigeria. All consenting woman available at the point of data collection were considered eligible for enrollment into the study.

Sample Size Estimation, Sampling Technique and Data Collection

The sample size was determined using Yamane's Formula (1967). $n = 1+N (e)^2$ The sample size was statistically estimated at 52. Eligible participants were selected by a simple random sampling technique. This method ensures that each member of the population has an equal chance of being selected. A list of ANC attendees was obtained from the clinic registry, and participants were randomly selected using the fishbowl method until the desired sample size was obtained. The methods of data collection comprised personal interview and physical assessment. A semi-structured interviewer-administered questionnaire was used to obtain information on the research variables. The instrument used in the study was structured self-administered questionnaire, which was developed by the researcher based on the objectives of the study. The questionnaire consists of 31 items and was divided into four (4) sections: Section A: Personal/Demographic Data (e.g., age, education, parity). Section B: Assessment of Knowledge About Birth Preparedness Section C: Factors Influencing Birth Preparedness Section D: Practices and Actions Taken for Birth Preparedness. All items in Section B will be measured using a 4-point Likert scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Agree, 4 = Strongly Agree.

Face and content validity was used to determine the validity by the three experts (3), one (2) from the O & G department and one (1) from the midwifery department, the initial draft of the questionnaire was given to those experts to access each item on the basis of its relevance, clarity, and appropriateness. The instrument was later modified on the basis of suggestions made by the expert. Test-retest reliability was used to ascertain the internal consistency of the data collection instrument. The researcher identified a similar setting and distributed the questionnaire to 5 respondents in General hospital. Two weeks later, the same instrument was re-administered to the target respondents and two result were analyze to determine the consistency of the instrument. 52

questionnaires were developed and administered; the respondents responded positively to the questionnaire and 50 answered questionnaires retrieved upon which data analysis were made.

Data Analysis

The data collected were analyzed using IBM SPSS version 22 computer statistical software package. Quantitative variables were summarized using mean and standard deviation, while qualitative variables were summarized using frequencies and percentages, a decision rule of means 2.5 was agree and any item with a mean of less than 2.5 was regarded as disagree.

Ethical Consideration

Institutional ethical clearance was obtained from the Research and Ethical Committee of Ahmad Sani Yariman Bakura Specialist Hospital Gusau, Nigeria. Ethical approval was granted and they were assured that all information collected will be treated with utmost confidentiality. Informed consent was also obtained from the participants before questionnaire administration.

III. RESULTS

Socio-demographic characteristics of participants

Table 4.1 Socio Demographic Data of the Respondents (n=50)

S/N	Variable	Frequency	Percentage
1.	Age in years	10	20%
	15-25 years	15	30%
	26-35 years	21	42%
	36-45years	6	12%
	46 and above		
2.	Educational level	10	20%
	non-formal	10	20%
	Primary Cert.	20	40%
	Secondary Cert.	10	20%
	Post – Secondary		
3.	Ethnicity	35	70%
	Hausa/Fulani	5	10%
	Yoruba	8	16%
	Igbo	2	4%
	Others		
4.	Religion	35	70%
	Islam	15	30%
	Christianity	0	0%
	Other		
5.	Occupation	10	20%
	Civil servant	15	30%
	Business	7	14%
	House wife	15	30%
	Student	3	6%
	Others		
6.	Number of Children (Parity)	10	20%
	None	20	40%
	1 – 2	10	20%
	3 – 4	10	10%
	5		
7.	Number of ANC visit so far	17	34%
	1	23	46%
	2 – 4	10	10%
	4	0	0%
	Above		
	Total	50	100

Table 4.1: Showing the socio demographic data of the respondents, based on the age of the respondent's majority of the respondents are 21 (42%) are within the age range of 36-45 years. Based on the Educational level of the respondents, majority are Secondary Cert. 20 (40%). Based on the Ethnicity of the respondents, majority are Hausa/Fulani 45 (65.2%). Based on the Tribe and Religion majority 35 (70%) has Hausa and Islam. Based on the Occupation of the respondents, majority are Business and House wife 15 (30%). Based on the Number of Children (Parity) of the respondents, majority are 1 – 2, 20 (40%) and Based on the Number of ANC visit so far of the respondents, majority had 2-4, 23 (46%).

Table 4.2: Knowledge about Birth Preparedness (n=50)

S/N	Statements	Frequency	Percentage
8.	Birth preparedness and complication readiness (BPCR) is primarily aimed at: Correct Incorrect	32 18	64% 36%
9.	Which of the following is NOT a component of birth preparedness? Correct Incorrect	30 20	60% 40%
10.	One major danger sign in pregnancy that requires immediate attention is: Correct Incorrect	35 15	70% 30%
11.	A key aspect of complication readiness is: Correct Incorrect	35 15	70% 30%
12.	Which of the following stakeholders should be involved in a woman's birth preparedness plan? Correct Incorrect	37 13	74% 16%
13.	In case of obstetric emergencies, pregnant women are advised to: Correct Incorrect	37 13	74% 16%
14.	According to WHO (2022), effective BPCR can reduce maternal deaths by: Correct Incorrect	35 15	70% 30%
15.	The recommended minimum number of antenatal visits for a pregnant woman, as per WHO guidelines, is: Correct Incorrect	37 13	74% 16%
16.	Which of the following best describes complication readiness? Correct Incorrect	35 15	70% 30%
17.	Knowledge of BPCR among pregnant women is important because: Correct Incorrect	37 13	74% 16%
	Decision Rule – 2.5	50	100%

Table 4.2: Shows that the respondents demonstrate good Knowledge about Birth Preparedness.

Table 4.3: Factors Influencing Birth Preparedness (n=50)

S/N	Statements	SA	A	D	SD	X	Remark
18.	Financial constraints limit my ability to make adequate preparation for childbirth and possible complications	25	15	0	5	3.2	Agreed
19.	Support from my husband/partner influences how well I prepare for childbirth	30	15	0	5	3.5	Agreed
20.	Cultural and traditional beliefs affect my level of preparation for delivery	25	15	5	5	3.1	Agreed
21.	The information and education I received from antenatal clinics affect my knowledge and readiness for birth	20	25	5	5	2.3	Disagreed
22.	Accessibility of health facilities influence how i plan for delivery and emergency	25	15	10	0	2.8	Agreed
23.	Past pregnancy and childbirth experiences determine how prepared I am for future deliveries	25	15	10	5	3.3	Agreed

Grand mean 3.0

Decision Rule – 2.5

Table 4.3 Shows that, the respondents agreed with the Factors Influencing Birth Preparedness considering the grand mean of 3.0 the majority of respondents agreed with all the items mentioned above. And also, the information and education I received from antenatal clinics affect my knowledge and readiness for birth Disagreed with (Item 54)

Table 4.4: Practices and Actions Taken for Birth Preparedness (n=50)

S/N	Statements	Frequency	Percentage
24.	Have you identified a skilled birth attendant to assist during your delivery?		
	Yes	35	70%
	No	15	30%
25.	Have you saved money in preparation for delivery and possible emergencies?		
	Yes	37	74%
	No	13	16%
26.	Have you arranged transportation to a health facility for the time of delivery?		
	Yes	35	70%
	No	15	30%
27.	Have you identified a health facility where you will deliver your baby?		
	Yes	35	70%
	No	15	30%
28.	Have you arranged for a blood donor in case of emergency during delivery?		
	Yes	35	70%
	No	15	30%
29.	Have you prepared essential materials (e.g., baby clothes, sanitary pads, delivery kits) for childbirth?		
	Yes	37	74%
	No	13	16%
		50	100%

Decision Rule – 2.5

Table 4.4: Shows that the respondents demonstrate knowledge about Practices and Actions Taken for Birth Preparedness.

IV. DISCUSSION

this study assessed the knowledge on birth preparedness and complication readiness among pregnant women attending antenatal clinic in Ahmad Sani Yariman Bakura specialist hospital Gusau north-western Nigeria. The study revealed that Majority of the respondents 21 (42%) are within the age range of 36-45 years. Most are Secondary Cert. 20 (40%). Based on the Ethnicity of the respondents, majority are Hausa/Fulani 45 (65.2%). Majority 35 (70%) are Hausa-Muslim. Based on parity majority are para 1 – 2, 20 (40%). Based on the Number of ANC visit so far of the respondents, majority had 2-4, visits 23 (46%).

In Nigeria, Onoh et al. (2013) reported that only 38% of pregnant women in Abakaliki had made concrete birth preparations such as saving money, arranging transport, or identifying blood donors. Ibrahim MS, et al. (2014) and Emmanuel I.O et al. (2022) found that in Kano, 35% of women had saved money, and only 28% had identified transport arrangements. In this our study 74%,70%,70%,70% had made concrete birth preparations such as saving money, arranging transport, arranged for blood donor and identified a health facility where to deliver respectively which was higher than what was reported in Abakaliki and Kano.

Most of the participants in the present study also expressed that getting personal support from the home in the last trimester of pregnancy and blood donors in case of emergency will improve pregnancy outcomes. This finding is supported by a study in Nigeria (Onayade et al., 2010) and Egypt (Aziz et al., 2020) in which participants arranged for blood donors and a transport method in readiness for birth.

Findings from Ethiopia confirm this gap between knowledge and practice. Asresie M.B and Worku Dagnew G (2021) noted that while 68% of women were aware of BPCR, which was similar to what we found in this study however only 31% had identified a health facility for delivery, and fewer than 20% had arranged transport or blood donors which was lower to our findings in this study. Tesfaye et al. (2023) reported even lower preparedness levels, with only 27% of rural women being adequately prepared for childbirth.

In Ghana, Nachinab G. TI, Yakong V. N, Joshua Dindiok Dubik JD, et al., (2023) revealed that although 61% of women had good knowledge, somewhat similar to our findings of having good knowledge of BPCR however only 37% had identified a skilled birth attendant, and 25% had arranged for transportation which was

similar to Tesfaye et al (2023) reported. The study further showed that women with partner support were more likely to engage in practical preparations than those without such support.

Globally, Alamrew, A., Sisay, A., Ayele, M. et al. (2024) in their multi-country study highlighted that although 72% of urban women and 49% of rural women were knowledgeable, only 34% across the three countries (Nigeria, Kenya, Tanzania) had identified blood donors, and just 41% had arranged emergency transport. Similarly, Sharma et al. (2019) in India reported that 36% of women made adequate preparations despite higher knowledge levels. India and some African country like Nigeria had shared some socio-economic and demographic factors. **The second step**, complication readiness enhances knowledge about danger signs in families and communities, increasing awareness of the problem and hastening the choice to seek treatment. The participants indicated that knowledge of danger signs helps in the early identification and treatment of obstetric emergencies. Knowledge about the danger signs enables her to seek help from the skilled birth attendant early. Most of the respondents knew at least one danger sign that could occur during pregnancy.

V. Conclusion

This study's findings indicate that BPCR is a concept that has received some attention. Pregnant women who attend antenatal clinics have a general awareness of BPCR and its benefits. The barriers identified by the study show the need to involve other stakeholders such as husbands, family members, and the community as a whole. These stakeholders should be educated on BPCR through mass media, religious bodies, and community engagement. Their involvement will enable them to understand the need for them to support pregnant women with BPCR.

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