



Research

Knowledge and Practice of Birth Preparedness and Complication Readiness among Pregnant Women attending Antenatal Clinic in a Secondary Health Institution in Edo State

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Article history: Received 3 August 2022, Reviewed 9 December 2022, Accepted for publication 14 December 2022

Abstract

Background: Maternal mortality is a universal cause of concern and public health burden in developing countries. Birth preparedness and complication readiness are strong contributors in mitigating maternal and newborn morbidities and mortalities. This study assessed the knowledge and practice of birth preparedness and complication readiness among pregnant women attending antenatal clinic in a tertiary health institution in Benin City, Edo State.

Method: This was a cross-sectional study carried among 263 pregnant women attending antenatal clinic in Central Hospital, Benin City, Edo State. Data was collected with a well-structured researchers developed questionnaire. Data collected was analyzed with SPSS version 21. Descriptive and inferential statistics was used to analyse the data. Level of significance was set at P-value <0.05.

Result: A majority 128(60.4%) had good knowledge while 84(39.6%) had poor knowledge. A majority 129(60.8%) had poor practice while 83(39.2%) had good practice. Hypothesis revealed significant association between preparedness and complication readiness and parity.

Conclusion: Our study findings showed an overall good knowledge of birth preparedness and complication readiness (BPCR) and a poor level of practice of BPCR. There was a significant association between birth preparedness and complication readiness and parity.

Keywords: Birth preparedness, Complication readiness, Pregnant women, Awareness, Practice.

Introduction

Maternal mortality is a universal cause of concern and a public health burden in a developing country like Nigeria. Pregnancy and childbirth are normal physiological processes expected to be uneventful with a fruitful outcome of a healthy mother and baby. Successful delivery heralds joy, happiness, fulfilment, and celebration, not to the mother alone but also to the relations and community. However, every pregnant woman faces the risk of sudden and unpredictable complications that could result to injury or death either to the mother or child, that is the reason for preparing for birth and its complications. Birth preparedness and complication readiness (BP/CR) is the process of planning for normal birth and anticipating the actions needed in care of an emergency¹. The birth plan enables

the pregnant woman and her family to identify place of delivery, arrange for transport to the health facility, save money for services, get a compatible blood donor, and have birth companion ready before birth². It is impossible to know which woman will experience life threatening obstetric complication which leads to maternal mortality as all pregnant women are at risk of unpredictable, acute complication which could lead to death or injury of either or both mother and child³.

Each year about eight million women suffer from pregnancy related complications and more than half a million of them die annually as a result of complications of pregnancy and childbirth⁴.

Maternal mortality ratio (MMR) is about 814 per 100,000 deliveries⁵. Most of the maternal death is due to three phases of delay usually experienced in maternal care



which originate from inadequate or lack of birth and emergency preparedness⁶. In order to improve maternal and child health care, make pregnancies and labour safer, as well as meet up with the current goals of the Sustainable Development Goals (SDGs) of reducing the global maternal mortality to less than 70 per 10,000 live births by the year 2030, pregnant women should be well informed about births and the health of their babies⁷. Knowledge of pregnant women on BP/CR improves recognition of any problem in pregnancy and proper management. In spite of the benefit of BP/CR in the reduction of maternal mortality, several studies which have been done on knowledge and practice of BP/CR in Africa including Nigeria show low level of knowledge and practice^{8, 9, 10}.

A cross-sectional study conducted among pregnant women attending antenatal care in Six Primary Health Care Centre in Eti-Osa Local Government Area of Lagos State revealed that a majority of respondents have heard about birth preparedness and complication readiness, while the remaining respondents have not heard about it. A majority of the respondents have a good knowledge of birth preparedness and complication readiness while a few of the respondents have a poor knowledge of birth preparedness and complication readiness¹¹. Moreso, a study conducted in Uganda showed that respondents had good knowledge of BP/CR though this was higher among the educated respondents and the least knowledge was about transportation as a component⁶. However, a similar study in Cameroon revealed that awareness of BP/CR was found to be low and also the practice of birth BPCR was unsatisfactory as a majority of the women received this information from health workers¹².

A study conducted on the awareness of obstetrics danger signs during pregnancy was good among rural and urban hospitals in Lagos but awareness of danger signs during labour and after delivery identified by the women was low in both settings, though relatively higher in urban area¹³. Another study which was conducted in Lagos, Nigeria to assess the awareness of obstetric danger signs and practice of birth preparedness among pregnant women showed that a majority of the respondents had a good knowledge of obstetric danger signs, knew their expected date of delivery and most of them reported that it is possible for labour to start before due date. Most of the respondents reported that they have identified the facility where they will give birth and reported that they have already arranged for a blood donor and have been saving money in case of emergency during delivery¹⁴. Similar studies conducted in Ethiopia^{15, 16} among

pregnant women revealed that a majority of the women were prepared for birth and its complications and less than half of the respondents had a poor knowledge and practice in birth preparedness and complication. However, BP/CR knowledge and practice were found to be satisfactory in a study carried out among pregnant women in a cottage Hospital in Nigeria. The study noted that pregnant women rely so much on information provided by health care providers during antenatal period². A similar study conducted in India, among pregnant women attending urban tertiary care hospital revealed that a majority of the pregnant women were more birth prepared. However, respondents have poor emergency readiness, poor knowledge of danger signs in pregnancy and had knowledge of at least 3 danger signs of pregnancy, labour and severe illness in newborn³.

Another study conducted in Northwest Ethiopia on BP/CR among pregnant women, revealed that a few respondents were prepared for delivery and obstetric emergency by practicing at least three elements of BP/CR (identify place of delivery, save money, prepare essential items for clean and safe delivery, identify skilled provider, be aware of key danger signs and act on immediately, designate decision maker, identify source of support in case of emergency, arrange transport, blood donor, and emergency fund¹⁷).

A cross-sectional study conducted in Rapti Municipality of Chitwan, Nepal showed that a respondents had better birth preparedness, institutional delivery, antenatal care (ANC) visit as per protocol and respondents had received counseling during ANC. Age, religion, family types, education, age at marriage, parity, number of children, knowledge on birth preparedness, knowledge on danger sign, place for ANC and delivery, and decision-makers were found to be statistically significant (P value < 0.05) with birth preparedness practice. It was concluded that better knowledge on birth preparedness led to a better preparedness status¹⁸.

A similar cross-sectional study conducted in Kenya among pregnant women attending public ANC clinics in Migori County established that respondents' parity was significantly associated with birth preparedness and complication readiness¹⁹.

All pregnant women must have access to high quality obstetric monitoring throughout their pregnancies, during and immediately after childbirth, when most emergency complications do arise; creating the need to introduce women to birth preparedness and complication readiness is paramount.

This study, therefore, aims to assess the knowledge, awareness and practice of Birth Preparedness and



Complication Readiness among pregnant women attending Antenatal Clinic in Central hospital Benin City, Edo State

Research hypothesis: Ho: There is no significant relationship between practice of birth preparedness/ complication readiness and the parity of pregnant women attending antenatal clinic in Central Hospital Benin City.

Methodology

Research design: A cross-sectional design was used in the study

Research settings: The study was done in Central Hospital situated along Sapele Road, Benin City, Edo State, Nigeria. The hospital is a government owned hospital. The Central Hospital was established in 1902 by the British colonial government long before independence 1960. Benin City was in the defunct Western Region with headquarters at Ibadan. In 1963, the Midwest State was created out of the Western Region with its headquarters in Benin City. In 1970, under the military regime of the then Col. Samuel Osaigbovo Ogbemudia, the Ministry of Health established the Hospital Management Board, (the very first in Nigeria) by an edict of Ministry, under Ogbemudia's regime. The Edo State Hospitals Management Board was the first to be established in Nigeria. Central Hospital started with the name General hospital in the early seventies and was changed to Specialist Hospital which now metamorphosed to Central Hospital in the eighties. It is made up of various departments that render specialized care to patients with varied problems. It is in-charge of curative health care and training of personnel. It has a staff strength of about seven hundred and forty working in twenty-six departments. There are thirty-two units with four hundred and forty bed spaces.

Target population: The target population of the study comprised pregnant women in their second and third trimester who registered in antenatal clinic, the Central Hospital from March and May 2021. The total number of pregnant women who registered at the clinic from March to May was 592²⁰

Inclusion and exclusion criteria: Pregnant women who were in their second and third trimester (28 weeks' gestation and above). Those women who have attended clinic more than 2 times. While exclusive criteria are those who were sick at time of administering

questionnaire and pregnant women in their first trimester.

Sample, Sampling technique and Sample Size Determination: The sampling technique used was purposeful sampling method meaning pregnant women who did fit into the inclusive criteria. The sample size for the study was determined using Taro Yamane, a formula²¹ which was found to be 263.

Data collection: Data was collected using researcher's structured questionnaire. A close ended set of questions was used. The questionnaire comprised three sections. Section A deals with biodata of the respondents. Section B contains questions on awareness and knowledge corresponding to birth preparedness and complication readiness and danger signs of pregnancy. Section C contains questions on practice of birth preparedness and complication readiness.

Validity of the instrument: Face and content validity of the instrument was ascertained by the statistician and maternal and child health expert.

Reliability of instrument: A pilot test was done using 10% of the sample size. Twenty-seven respondents from ANC section of the University of Benin Teaching Hospital, Benin- city was used. The reliability of the instrument was confirmed using the Cronbach's alpha test to obtain coefficient of 0.91.

Ethical considerations: A written permission was obtained from the Central Hospital Ethical Research Committee. Approval number is A732/T/1. The purpose of the study was explained to the respondents. Written informed consent was obtained from the participants before administration of questionnaires. Choice of respondents to participate was respected as well as confidentiality.

Method of data collection: Data collection was done with the assistance of research assistants trained for this purpose, objectives, and administration of questionnaire. Two hundred and sixty-three (263) well-structured questionnaires were distributed to the pregnant women who came for antenatal clinic. Respondents were given time to complete copies of the questionnaire which were collected after completion. Data was collected for the period of three weeks.



Method of data analysis: Data was analyzed using descriptive statistics such as frequency distribution, table and percentage and chart. Hypothesis was tested using inferential statistics such as Chi-square and Person's correlation was used for level of significance which was set at $P < 0.05$.

Results

Demographic data of the respondents

Table 4.1 shows demographic variables of respondents. Forty-eight (22.6%) were within the age group of 18-22 years, 83 (39.2%) were within 23-27 years, 45 (21.2%) were within 28-32 years, 36 (16.9%) were 33 years and above. A majority 166 (78.3%) were married while 46 (21.7%) were single. A majority 72 (33.9%) had tertiary education. A majority 164 (77.4%) were Christians while 48 (22.6%) were Muslims. A majority 87 (41.0%) were civil servants. Fifty-three (25.0%) had no children, 89 (41.9%) had one child, 33 (15.6%) had two children, 37 (17.5%) had three children and above.

Table 1: Demographic data of the respondents

Variable	Freq.	Percent (%)
Age group		
18 – 22 years	48	22.6
23 – 27 years	83	39.2
28 – 32 years	45	21.2
33 and above	36	16.9
Marital status		
Married	166	78.3
Single	46	21.7
Divorced	0	0.0
Educational status		
No formal education	42	19.8
Primary	61	28.8
Secondary	37	17.5
Tertiary	72	33.9

Religion

Christianity	164	77.4
Islam	48	22.6
Others	0	0.0

Occupation

Business	79	37.3
Civil servant	87	41.0
Housewife	46	21.7

Number of children

0	53	25.0
1	89	41.9
2	33	15.6
3 and above	37	17.5

Awareness and Knowledge of birth preparedness and complication readiness

Table 2 shows awareness and knowledge of birth preparedness and complication readiness. A majority 88 (41.5%) have heard of birth preparedness and complication readiness. A majority 64 (72.7%) reported that they heard from nurse/midwife. A majority 83 (39.2%) reported it was the process of planning for a normal birth and taking needed action in case of emergency. It was reported that 174(82.1%) that birth preparedness and complication readiness component is identify place of delivery, 105(49.5%) as save money, 124(58.5%) as identify means of transportation, 184(86.8%) as arranging for funds, 189(89.2%) as arranging for birth companion, 182(85.8%) as arranging for a blood donor, 193(91.0%) as identify skilled provider, while 109(51.4%) as good personal hygiene. On the knowledge danger signs, 192 (90.8%) knows bleeding to be danger sign, 101 (47.6%) selected liquor drainage before term, 78 (36.8%) opted for abdominal pain before term, fits 58 (27.4%), foul smelling vaginal discharge 192 (90.5%) and about 198 (93.4%) went for severe headache as a danger sign.

Table 2: Awareness and Knowledge of birth preparedness and complication readiness

Variable	Frequency	Percentage (%)
Have you heard of birth preparedness and complication readiness before?		
Yes	88	41.5
No	60	28.3
I don't know.	64	30.2
What was the source of information if 'yes'? (n=88)		
Media	8	9.1
Nurse/Midwife	64	72.7
Doctor	16	18.2
What is birth preparedness and complication readiness?		
The process of delivering a baby	44	20.8

The process of caring for a baby after birth	36	17.0
The process of planning for a normal birth and taking needed action in case of emergency	83	39.2
The process of planning for emergency in pregnancy	49	23.1
Identify a health facility for emergency	72	34.0
Components of Birth preparedness and complication readiness		
Identify Place of delivery	174	82.1
Save money	105	49.5
Identify means of transportation	124	58.5
Arranging for funds	184	86.8
Arranging for birth companion	189	89.2
Arranging for a blood donor	182	85.8
Identify a health facility for emergency	193	91.0
Identify skilled Provider	195	92.0
Good personal hygiene	109	51.4
Danger signs of pregnancy		
Bleeding	192	90.5
Liquor drainage before term	101	47.6
Abdominal pain before term	78	36.8
Fits (seizures)	58	27.4
Foul smelling vaginal discharge	192	90.5
Severe headache	198	93.4

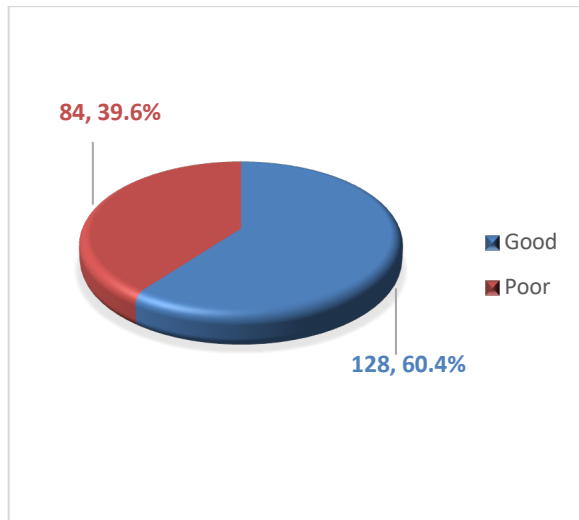


Figure 1: Level of knowledge of the birth preparedness and complication readiness

Figure 1 shows the overall level of knowledge of birth preparedness and complication readiness. It was reported that 128(60.4%) have good level of knowledge while 84(39.6%) have poor level of knowledge.

Practice of birth preparedness and Complications readiness

Table .3 shows practice of birth preparedness and complication readiness. A majority 169 (79.7%) knew

their expected date of delivery. It was reported by a majority 179 (84.4%) that they have identified the facility where they will give birth. A majority 108 (50.9%) reported that they are making adequate financial arrangement for the birth of their baby. A majority 116 (54.7%) reported that they haven't. A majority 200 (94.3%) reported they have not made arrangement for blood donor. A majority 188 (88.7%) reported they have not identified a decision maker. It was reported by 94 (44.3%) that they have not arranged for birth companion.

Table 3: Practice of birth preparedness and Complications readiness

Variable	Freq.	Percent (%)
Do you know your expected date of delivery?		
Yes	169	79.7
No	43	20.3
I don't know	0	0.0
Have you identified the facility where you will give birth in?		
Yes	179	84.4
No	33	15.6
I don't know	0	0.0
Have you saved money towards delivery?		

Variable	Freq.	Percent (%)
Yes	108	50.9
No	104	49.1
I don't know	0	0.0
Have you made plans for effective and timely transportation to the hospital when labour starts?		
Yes	96	45.3
No	116	54.7
I don't know	0	0.0
Have you made arrangement for a blood donor?		
Yes	12	5.7
No	200	94.3
I don't know	0	0.0
Have you identified a decision maker in time of need?		
Yes	24	11.3
No	188	88.7
I don't know	0	0.0
Have you arranged for birth companion?		
Yes	94	44.3
No	76	35.8
I don't know	42	19.8

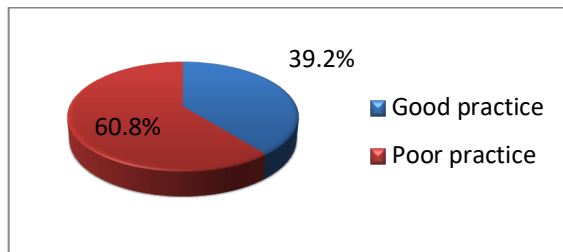


Figure 2: Level of Practice of birth preparedness and complication readiness

Figure 2 shows level of practice of birth preparedness and complication readiness, a majority 129 (60.8%) had poor practice, 83 (39.2%) had good practice.

Hypothesis: There is no significant relationship between practice of birth preparedness/complication readiness and the parity of pregnant women attending antenatal clinic in Central Hospital, Benin City, Edo State.

Association between practice of birth preparedness/complication readiness and parity

Table 4 shows association between practice of birth preparedness/complication readiness and parity.

Twenty-seven (50.9%) who had no children have good practice, 28(31.5%) who have one child have good practice, 22(66.7%) who had two children have good practice, 6(16.2%) who have 3 children and above had good practice. Chi-square value was 23.960 and a p-value of 0.00, this indicates that there is a significant relationship between practice of birth preparedness / complication readiness and parity among pregnant women attending antenatal clinic in Central Hospital, Benin City, Edo State, the null hypothesis (H_0) is therefore rejected, and the alternate hypothesis (H_1) accepted.

Table 4: Association between practice of Birth preparedness/Complication readiness and parity

Level of Practice	Level of Practice		χ^2	P
	Good	Poor		
No of children				
0	27(50.9)	26(49.1)	23.960	0.000
1	28(31.5)	61(68.5)		
2	22(66.7)	11(33.3)		
3 and above	6(16.2)	31(83.8)		

Discussion

Birth preparedness is very important in the preparation for childbirth and complication is not predictable thus complication readiness cannot be overlooked or downplayed. Birth preparedness and complication readiness are strong contributors in mitigating maternal and newborn morbidities and mortalities.

Findings revealed that a majority of respondents were aware and have a good knowledge of birth preparedness and complication readiness. This is in line with studies conducted in Uganda⁶, Nigeria^{11,13,14} and Ethiopia¹⁶ This finding is however at variance with the studies conducted in Nigeria^{9,10}, Cameroun¹² and India³ where the women had poor knowledge of emergency readiness and danger signs which are crucial in morbidity and mortality of every pregnant woman. More so, sources of information on birth preparedness and complication readiness as revealed in the study are the Nurses and midwives which is supported by other studies^{11,12}. The good knowledge as shown in the study could be attributed to the majority of respondents having formal education.

Regarding the practice of birth preparedness and complication readiness, the study showed that the practice was poor among respondents. This study



showed that despite respondents' good knowledge on BP/CR, their practice was nevertheless poor, which is a cause for concern. Having the knowledge and not practicing it could increase morbidity and mortality. This finding is supported by the studies conducted in Northeast Ethiopia¹⁶ and Nigeria⁹ where respondents had poor practice. However, the finding is at variance with the studies conducted in Nigeria², Ethiopia¹⁷ and Nepal¹⁸ where Birth preparedness and complication readiness were satisfactory and had both better preparedness and institutional delivery. The findings showed that education and counselling on birth preparedness and complication readiness that resulted in good knowledge did not reflect in their practice as observed. The possible explanation for this might be because most pregnant women do not want to anticipate understandable events in pregnancy and delivery, hence they do not make arrangement for emergencies, hoping and believing that everything will be normal. Among the components, a majority of respondents had not made plans for transportation which is crucial when labor starts. Not making plans for transportation could cause delay to reach, seek and receive care. These delays are avoidable and are crucial in saving life of the mother and newborn. A majority of respondents also indicated that they have not made arrangement for a blood donor. This means that the respondents were not complication ready. Complications in pregnancy, labour and puerperium are not predictable, so making arrangement for blood donor should not be overlooked. A majority of the respondents were not still prepared in the areas of decision making and birth companionship. During labour, the need for decision maker and birth companion is very important in case of complication. There are some decisions for which a third party's advice could be sought, early decision making for treatment and receiving care would avert morbidities and mortalities of the mother and newborn.

The result of the test of research hypothesis using chi-square (χ^2) revealed the P-value of 0.05 leading to the conclusion that there is significant association between BPCR and parity. This is supported by the study done in Nepal¹⁹. This means that the level of practice decreases with parity.

Implications of findings to Nursing: The result showed that there is still a lot to be done by the Nurses in the area of practice. All health care providers should counsel every pregnant woman who comes to health institution for ANC services on BP components and CR during her first ANC visit and subsequent visits. Promoting

favorable attitude towards BP and CR are recommended to improve practice. Community based interventions such as pregnant women conferences; sensitizations are likely to increase BP and CR practice and awareness. This is because the survival of mother and child is the shared responsibility among the care givers, woman's family, the woman herself, the policy makers and member of the community.

Limitations of study: The possibility of recall bias may exist.

Conclusion

The findings of the study revealed that awareness and knowledge of birth preparedness and complication were good, while the level of practice was generally poor. The hypothesis revealed that there is a significant association between BPCR and parity.

Author's Contribution: CAE conceived the idea of the study and wrote the first draft of the paper. OAG and CAE participated in data collection, data analysis and interpretation of data, as well as critical revision of the draft of the paper. We all read, corrected, and accepted responsibility for the final manuscripts.

Competing Interest: We declare no conflict of interest.

Acknowledgements: The authors expressed their appreciation to the study respondents, the research assistants, healthcare providers and management of the Central Hospital, Benin City, Edo State, Nigeria.

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