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Birth Preparedness and Complication Readiness: Pregnant Women Perspective in Ondo State, Nigeria

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Abstract: *Globally, maternal mortality and morbidity continue to be major public health issues, particularly in low and middle-income countries including Nigeria where access to skilled birth attendants (SBA) remain major challenge. Increasing the number of pregnancies attended by SBA could aid in lowering maternal morbidity and mortality. This study explores the perception of pregnant women towards Birth Preparedness and Complication Readiness (BPCR) in selected Primary Health care facilities of Ondo State, Nigeria. The study employed a qualitative approach where focus group discussion among twenty-two pregnant women were selected from primary health care. Data was analysed using inductive thematic method. Two thematic categories which include knowledge and Practice of pregnant women on BPCR, and seven subthemes emerged from the data; they included knowledge of danger signs, routine scan, and diet, purchase of baby and hospital items, antenatal registration, and exclusive breastfeeding. Poor perception of BPCR and practice were identified among the participants. Hence, the need for midwives to include all the elements BPCR into the prenatal education in order to reduce maternal health complications and death is recommended as this would lead to positive pregnancy outcome.*

Keywords: Birth preparedness, Complication readiness, Pregnant women, Prenatal education

INTRODUCTION

Maternal mortality is still a major public health problem. Globally, at least one woman dies and some end up with a varying degree of morbidity every minute as a result of pregnancy and childbirth-related problems (Ijang, 2019). Mulegeta, et al. (2015) reported that women in Sub-Saharan Africa, which includes Nigeria, the situation is worse. However, with the right supervision and care, these maternal deaths can be avoided. Among other measures created by the United Nations, birth preparedness and complication readiness (BPCR) has been acknowledged as a crucial element in the decrease of maternal and new-born mortality (Sobageh et al., 2017).

Birth Preparedness and Complication Readiness (BPCR) is a safe motherhood project with the goal of preparing for a routine delivery and foreseeing the steps that will be required in the event of an emergency. The main elements of BPACR included being aware of potential danger

signs, identifying a skilled birth attendant, finding the closest appropriate care facility, planning for transportation to this care facility for deliveries and/or obstetric emergencies, saving money to pay for care and other resources, identifying a potential blood donor, and identifying a decision-maker in case of emergency (Sobageh & Moinuddin et al., 2017). Birth preparedness and complication readiness is a comprehensive package that promotes timely access to skilled maternal health services and has been proven to combat the three delays that are associated with maternal morbidity and mortality. According to Thaddeus and Maine (1994) model, these three delays are; a) delaying the decision to seek care when a problem arises; b) delaying getting to the facility; and c) delaying the start of treatment. This model promotes the timely use of skilled maternal and neonatal care, especially during childbirth, based on the theory that preparing for childbirth reduces delays in obtaining care. Majority of pregnant women and their families do not know how to recognize the danger signs of complications and women who are more educated and knowledgeable of obstetric problems are more equipped to handle birth and any complications that may arise than women who are uneducated (Oyeneyin 2019).

Previous studies reveal that promoting BP/CR has been shown to increase preventative behaviors, mothers' knowledge of danger indications, and treatment seeking during obstetric emergencies in rural Nepal, Burkina Faso, Burkina, and Ethiopia (Bengtsson 2016). With a maternal death rate of 253 per 100,000 live births in Ondo State and paucity of studies on birth preparedness and complication readiness in the state, there is need to examine the perception of pregnant women on knowledge and practice of BPCR utilizing a qualitative approach. Therefore, this study seeks to explore the perception of pregnant women on BPCR in the primary health care facilities of Ondo State.

MATERIALS AND METHODS

This qualitative study with inductive thematic content analysis was conducted from August 2022 to November 2022 in Odigbo/ panapana and Oke Alaafia Ile Oluji/Oke Igbo primary health centres, both in South Senatorial Districts of Ondo State respectively Nigeria. The participants were pregnant women attending the antenatal clinic at Panapana and Oke Alafia primary health centre. This study used the purposive sampling technique to select pregnant women from various ethnic groups, levels of education, parity, and modes of child delivery. Inclusion criteria included: registered pregnant women in the selected health centres, living in the community, with an estimated gestational age of 24-26 weeks, and are willing to participate in the study. Exclusive criteria were pregnant critically ill or on admission, not willing to participate in the study, and are health professionals. The sample size for this study was determined by the principle of data saturation where twenty-two pregnant women participated. Data were collected using a semi-structured focused group discussion guide developed by the research team. Some of the questions in the interview guide included “What is your perception of BPCR?” and “what is your perception in the practice of BPCR?” Oral and written informed consent obtained and FGDs was conducted in a quiet environment audiotaped. Data analysis was conducted using the NVIVO 12 software. Verbatim transcription of the audio files was done. After that, the transcripts were checked to ensure nothing was left out. Data were analyzed using content analysis. The first step was decontextualization, which entailed familiarization with the data, after which the identified meaning units were labelled with a code. The next stage was recontexualization where the original text was re-read while going through

the final list of meaning units. The next stage was categorization where the themes and sub-themes were identified. The last stage was the compilation where the final themes and subthemes were compiled after a final check was done and the report was produced (World Medical Association, 2013).

Rigor was ensured in this study using various techniques. To ensure credibility, review of each transcript for similarities was done while dependability and transferability was ensured via audit trail. For conformability, team members reviewed the participants' quotes, themes, and sub-themes to validate the findings. Ethical approval was sought and obtained from the ethics and research committee of Ministry of Health, Ondo State. The unwillingness to participate in the study was respected without any change in participants' care process, and confidentiality was ensured. The ethical principles according to the Helsinki Declaration, alongside national and international research ethics guidelines, were adhered to in conducting this study.

RESULTS

Table 1: The sub-themes and themes generated from the interviews

S/N	Theme	Sub-themes
1	*Knowledge of pregnant women on BPCR*	Knowledge of danger signs
		Repeated scan
		Diet during pregnancy
		Antenatal registration
		Breastfeeding practices
2	*Practice of pregnant women on Birth Preparedness and Complication Readiness.*	Identification of health facilities in case of emergency
		Preparing essential hospital items for delivery
		Preparing and buying of baby items
		Identification of health facilities in case of emergency

In this study, two major themes were generated: (i) Understanding of pregnant women on BPCR and (ii) Practice of pregnant women on Birth Preparedness and Complication Readiness. The summary of the themes and corresponding subthemes are as stated in table 1. Exploring the opinion of pregnant women required ascertaining the understanding of pregnant women about their birth preparedness and complication readiness.

Theme 1: Understanding of BPCR

Sub-theme 1: Knowledge of Danger Signs

As a construct, the participants described their understanding of BPCR as reporting signs of discomfort and problem experienced in the course of pregnancy. According to the literature, knowledge of danger sign is one of the most important things to learn when having children especially for pregnant women. This is said to assist women to know when they are in danger.

The FGD Participants reported that vaginal bleeding experienced before due date, swollen legs and persistent headache during pregnancy are considered as danger signs and these sign must be reported to the nearest facilities. In the words of one of the pregnant women, midwives often inform them to report any discomfort such as lower abdomen or headache to the skilled birth attendant in health care facilities closer to them. Therefore, the common form of danger sign mentioned is evidence of any form of bleeding followed by swollen feet and headache.

> *"If one is feeling pain in the lower abdomen or headache and then they told us at the clinic that if there are signs that we are seeing that is bad and we are not supposed to be seeing at one or two months we should come and complain* (28 years old respondents)"
> *"One is supposed to come to the hospital if there is swollen legs, seeing blood, some people their pregnancy won't be more than two months their legs would have swollen, like malaria, cough etc various things that are not supposed to happen we will come to clinic to complain (24 years old respondents)"*
> *"Some signs and symptoms that may be dangerous to the baby, if someone is seeing water or blood the person must come for check up in the hospital to know what to do and the things well need (21 years old respondents)"*
> *"When one has contractions, or saw blood or there is side or back pain (31 years old respondent)'*

The excerpts demonstrated an emphasis on the training given to women as knowledge of birth preparedness and complication readiness. However, in summary below is the word cloud for the most mentioned danger signs known by women in the study areas.

Sub theme 2: Routine Scan

The participants shared a consensus on the mandatory routine scan that must be done every trimester as prescribed by the skilled attendant. Almost all the participant mentioned that they have to do the scan three times before delivery date, the first scan must be done at three months of pregnancy, the second one must be done at the sixth month while the third must be done at the ninth month for proper monitoring of both mother and baby's health. So as part of the knowledge of BPCR mentioned adoption and routine check-up using scan is very important thing to do as trained and informed by the health workers. Below are some relevant excerpts for the information.

> *"We were told to do 3 scans, the first will be between 1st to 3rd months, the second is at 7 months and the 3rd one will be before the 9th month (26yeears old respondent)"*
> *"How I understand it is that when we get pregnant we must register for antenatal and follow all necessary things we are told so that we know the position of the baby and to do scan like 4 to 6 times before delivery so that their won't be any danger (21 years old respondent)"*

"They told us to do scan 3 different times to know the position of the baby if the baby is best positioned or not to avoid danger (46 years old respondent)

Subtheme 3: Healthy Diet in Pregnancy

Midwives also emphasized the need to eat healthy diet in pregnancy is an important aspect of BPCR which must be consistent throughout the period of pregnancy and this is also assumed as part of their planning towards BPCR. Nutritious diet is said to be linked with good brain development and a healthy birth baby weight and can also reduce the risk of many birth defect. In the words of one of the participants, midwives were so emphatic on the issue of diet, as they were taught to eat adequate food.

"They do tell us to eat good food, we are to eat food that is healthy for us and the baby to prepare for birth and danger (24 years old respondent)"
"We should eat more fruits and vitamins so that the baby can form well we should be using our drugs regularly (27 years old respondent F2)"
"The health practitioners' here tells us it is whatever we eat that our babies will eat whatever we drink is what our babies we drink (19 years old respondent F2)"

Subtheme 4: Exercise

Exercise is classified as one of the normal daily routine a woman is expected to work on or do during pregnancy, as difficult as it may seem it yields positive result during labour. The respondents described routine exercise as part of their understanding about BPCR and using of routine drugs (Vitamins), this is said to help in keeping the baby healthy. Most of the respondents espoused that sleeping hours should be reduced while one must engage in regular exercise.

"What they taught us is that when we are pregnant we need engage in regular exercises (42 years respondent)"
"When you're pregnant you should do exercise, you take your drug everyday then you should not be sleeping throughout the day (45 years respondent)'

Subtheme 5: Antenatal registration

As opined by many of the respondents, antenatal registration was conceived as another germane aspect of BPCR. Early registration was usually done by those who are getting pregnant for the first time as many of them registered at second trimester claiming they already have an idea of what they are expected to do in pregnancy. As regards birth preparedness training received, some were quick to mention that midwives often admonish them to register early as recorded from excerpt from the respondents.

"My understanding of birth planning and ….. is that when someone is pregnant, she should register early and come to clinic and she will

be informed on what she's supposed to do (35 years old respondent)"
"How I understand it is that when we get pregnant we must register for antenatal to prepare for .birth and follow all necessary things we are told to prevent emergency (23 years old respondent)"
"How I understand it that when someone knows that she's pregnant she'll come for ante natal also they can put that kind of person through what she's supposed to do to avoid danger (26 years old respondent*)"*

Diet, early antenatal registration, and routine scan were considered as BPCR by the pregnant women. As mentioned earlier that BPCR entails come components such as deciding on the place of birth, birth attendant, knowing the location of the nearest facility for the birth or if complication arise, preparing funds for expenses and any supplies or materials to take the facility, identifying support person to care for other children, arranging transportation to facility or in case of complications, and identification of blood donor. One could conclusively say that the only components known are identifying place of birth and purchasing of baby and hospital materials. Excerpts from the respondent's shows that they don't have adequate knowledge of BPCR.

"The nurses told us, we have to be prepared for delivery by buying baby load and getting hospital things ready, so that they will have what to use for my delivery, when I give birth, everything, (25 years old respondents)"
"They always tell us to buy baby things like cloth, shawl, socks and pampers and they use to give us delivery package list so their won't be problem on delivery day (20 years old respondent)"
"They also told us to always come to hospital whenever we see any sign of delivery with our baby things and list of hospital materials or delivery (20 years old respondents)"

Theme 2: Practice of Birth preparedness and complication readiness
In exploring the opinion of pregnant women's practice of BPCR. Excerpts from the participants indicated that only two components were mostly and obviously practiced among the women in the study location and these are identification of place of birth and preparing funds for baby expenses and materials for the facility. However, practices in this context are actually limited as it focuses on previous pregnancy(ies)

Sub-theme 1: Identification of health facilities in case of emergency
Identification of health facilities in case of emergency is a key component of BPCR. Opinion of participants differs from one individual to another, of the participants acknowledged the fact that antenatal registration is one of the important things to do, majority claimed they often register in second trimester because they have been exposed to prenatal education in the previous pregnancy. Some respondents were of the opinion that they often identified health facility in case of complication doesn't necessarily mean they will deliver in the hospital as they also register in churches / mission homes. Below are some of the excepts

"When I was two month I was going to register but people said it was too early that I should wait till 4 or 5 month but before I registered I had malaria and I was treated so when I was 6 month I registered for antenatal in the centre where l want to deliver, then I go to church to pray also. (29 years old respondent)"
"I don't register on time I just registered at 6 months in an identified facility for delivery (24 years old respondent)"
"When I was pregnant with my first child then... You know we have not given birth to one before so I came immediately I was pregnant for registration and to identify the place but when I had my second pregnancy my baby was already 5months before I came for registration and this pregnancy is already five months before I registered (30 years old respondent)"

Sub-theme 2: Preparing and buying of baby items

Preparing buying of baby items is one of the major components of BPCR as this is often practiced by our participants. According to our respondents, purchasing of materials were made compulsory at the antenatal clinic as a comprehensive list of baby items are usually given to pregnant women at booking. This requirement from the hospital made the women to strive to purchase their baby things and get them ready for delivery.

"I've gotten everything ready the baby things even the house has been set, the money for hospital everything is ready so just for the baby to come and we come to the hospital (27 years old respondent)'
"We have been given a list for of things to buy and those that has bought them before us already gave us the estimate and it's not a huge amount of money God should provide for every one of us I'm buying my baby things in bits it's not until you get a big amount of money that you can buy its gradually the little amount of money I see I'll go to market and get those things I have a place I buy them in the market where I buy them and as I come to the hospital I also go to church one can't stay in a place to pray for the day of delivery (45 years old respondent)"

"Haaaa... I just know that am so happy about this my pregnancy and am preparing to buy the things that I want my baby to use because am happy to have this child and all the things they say we should buy also am already buying it gradually and am getting ready and I know that God will do it for me. (25 years old respondent)"
"OK now I have bought some things and ready for delivery both hospital and baby things am ready for delivery but am just praying that God Will help me. (35 years old respondents)"

Sub-theme 3: Preparing essential hospital items for delivery

Preparing essential hospital items for facilities is an important component of BPCR as this is often practiced by our participants. One of the respondents claimed to have bought all materials needed in the hospital and only waiting for the delivery date. According to our respondents, purchasing of materials were made compulsory at the antenatal clinic as a comprehensive list of hospital requirement for delivery are usually given to pregnant women at booking. The content of the hospital delivery package includes gloves, sanitary pad, baby cloths, and mackintosh among others.

> *"We have been given list for of things to buy and those that has bought it before us already gave us the estimate and it's not a huge amount of money God should provide for every one of (29 years old respondent)'*
> *"Haaaa... I just know that am so happy about this my pregnancy and am preparing to buy all the things they say we should buy in the hospital. (25 years old respondent)"*
> *"OK , now I have bought Some things and ready for delivery both hospital and baby things am ready for delivery but am just praying that God will help me. (35 years old respondent1)"*

DISCUSSION

This qualitative study was conducted among the pregnant women of child bearing age and most of the participants are married which was expected as they were women of reproductive age. The findings are in support to the submission of Abioye et al. (2024), Moshi, et al. (2021) and Ejioye and Gbenga-Epebinu (2021) that most women of child bearing age are married. The age of the pregnant women ranges from 20-49 years as the participants had given birth to minimum of one child. Gbenga-Epebinu and Ogunrinde (2020) and Abita and Shikur (2020) also documented that woman in this category are expected to have been married, given birth and gained experience through previous pregnancy (ies).

The inductive thematic analysis also explored the opinion of pregnant women regarding birth preparedness and complication readiness. Most of the women expressed their perspectives on BPCR based on the information received during antenatal contact stating that danger signs such as bleeding during pregnancy, labour and puerperium as an important aspect of BPCR was widely taught by midwives during antenatal contact. This is in accordance with findings from studies where pregnant women reported bleeding as a major discussion during antenatal session which was classified as an emergency sign encountered mostly during pregnancy, childbirth, and postpartum and should be reported to the health care facility (Pervin et al., 2018 & Akter et al. (2022). Similarly, findings from this study were in support of a study where pregnant women were only able to identify severe vaginal bleeding as a danger sign during pregnancy, labour and after births (Mekonnen et al. (2018). Given that pregnant women across all study fields received adequate information in prompt identification of danger signs such as bleeding during pregnancy, labour and postpartum.

In this study, finding shows that pregnant women had a wide range of information during prenatal education that was devoid of the complication readiness elements which include, saving of money, getting a companion during labour, making preparation for blood donor. Robust antenatal sessions must include all the information that will ensure positive pregnancy outcome thereby reducing maternal mortality ratio.

When considering the antenatal education received by pregnant women in this study on birth preparedness elements, the most mentioned elements during antenatal was planning to give birth with a skilled provider, followed by planning to identify a mode of transportation to the place of childbirth, planning to buy baby clothing's and preparing essential hospital items for delivery. Similar findings was reported in a study in India where majority of the participants identified a skilled provider for delivery and had made arrangements of preparing essential hospital items form delivery (Kiataphiwasu & Kaewkiattikun, 2018).

Moreover, this study also found planning to get a blood donor, saving of fund, getting a companion to accompany to hospital during labour and the person that will stay with the other children's at home were not discussed during antenatal session, as SBA gave priority to other positive pregnancy outcome such as routine scan, diet during pregnancy, exercise and breastfeeding thereby neglecting complication readiness elements. SBA should make ANC sessions worthwhile and emphasis should be made on both birth preparedness and complication readiness elements.

Akinwaare and Oluwatosin (2022) found same pattern of inadequate understanding in a study conducted in Ibadan where the result showed that pregnant women have poor knowledge on BPCR. However, another study from Nigeria among registered pregnant women in Ikene, Ogun state showed a poor perception of BPCR elements (Okueso, 2018). This is in contrast to the study conducted in Abakaliki, Nigeria, which revealed adequate coverage of birth preparedness and complication readiness elements and other positive pregnancy outcome during antenatal session (Onoh et al., 2020). Similarly, in a study conducted in Enugu, Nigeria more than half of the respondent understood the elements of birth preparedness and complication readiness from information received during antenatal sessions. This is to show that midwives needs to review the information given to pregnant women during ANC session which must comprise of all the BPCR elements and other positive pregnancy outcome information. The continuous education department in each facilities in conjunction hospital stakeholders and the government should organise a training programme to sensitize midwives and SBA on BPCR.

CONCLUSION

In this study women's prenatal education lacks information on birth preparedness and complication readiness elements. There is need for healthcare providers to give detailed information on all element of birth preparedness and complication readiness thereby making ANC session worthwhile.

Recommendations

It is recommended that Hospital managers should ensure regular continuous training and re-training of midwives on the latest trend in midwifery practice and midwives should ensure that pregnant women receive adequate prenatal education on elements of birth preparedness and complication. Policy makers need to employ more midwives in primary health facilities as this will enable the midwives to deliver adequate antenatal care and education to all pregnant women.

Nursing Implication of the study

The study gives insight on the level of education received by pregnant women in primary health care facilities. It implies that nurses and midwives still need to teach the pregnant women on all the elements of BPCR and other positive pregnancy outcome strategies. This is to enable the pregnant women to understand how to prepare for birth and guide against complications.
Further studies could be conducted in other secondary health facilities to determine the level of pregnant women preparedness towards complications and birth since this study was limited to primary health facility so as to establish the kind of prenatal education provided during antenatal classes across the state.

Conflict of interest

There are no conflicts of interest

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