



## Obstetric Correlates of Birth Preparedness and Complication Readiness Among Pregnant Women Attending Antenatal Clinics in South-East Senatorial District, Rivers State

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### Abstract

This study investigated the obstetric correlates of birth preparedness and complication readiness among pregnant women in the South-East Senatorial District, Rivers State. A descriptive correlational research design was adopted with a population consisting of 1,965 women attending antenatal clinic in the South East senatorial district of Rivers State. The sample size was 983, which was selected using a multi-stage sampling procedure. Data was collected using a structured questionnaire with a reliability coefficient of 0.81. Data collected were analysed with the aid of the Statistical Product for Service Solution (SPSS V-23) using the Pearson Correlation at a 0.05 level of significance. The finding of this study revealed that there was a significant relationship between birth preparedness and complication readiness and obstetric variables such as previous mode of delivery ( $n = 969$ ;  $r = 0.59$ ;  $p < 0.05$ ); previous history of hemorrhage ( $n = 969$ ;  $r = 0.47$ ;  $p < 0.05$ ); availability of skilled birth attendants ( $n = 969$ ;  $r = 0.28$ ;  $p < 0.05$ ); and antenatal care services utilization ( $n = 969$ ;  $r = 0.67$ ;  $p < 0.05$ ). These findings underscore the importance of previous delivery experiences, history of obstetric complications, access to skilled birth attendants, and antenatal care utilisation in ensuring maternal and neonatal well-being. The study concluded that adequate birth preparedness and complication readiness among pregnant women in the South-East Senatorial District, Rivers State, requires a holistic approach that combines spousal involvement and knowledge of obstetric emergencies. It was recommended that healthcare workers particularly nurses, midwives and obstetricians should direct their focus to public health interventions to improve antenatal education, enhance access to skilled birth attendants, and address barriers to quality maternal healthcare services as this will contribute to better birth preparedness, reduce complications and improve the overall maternal and neonatal health outcomes.

**Keywords:** Childbirth, Complication, Obstetrics, Pregnant Women.

### Introduction

Birth preparedness and complication readiness are pivotal aspects of maternal health which aid the successful management of potential pregnancy and childbirth complications. It encompasses a proactive approach to ensure that any unexpected challenges that may arise during the maternal journey are met with swift and effective interventions, ultimately (World Health Organisation, 2015). Negligence in such can heighten maternal morbidity and mortality during the intrapartum and postpartum period. The World Health Organisation (2018) reported that, globally, approximately 830 women die every day from pregnancy and childbirth-related causes; which are preventable (Olonade et al., 2019). In developing countries, 80% of maternal deaths occur as a result of obstetric complications such as haemorrhage, infection, obstructed labour, unsafe abortion and high blood pressure (Mgbekem et al., 2020). In Sub-Saharan Africa, 1 out of 31 women dies during childbirth (Frederick & Chimaraoke, 2018). The report from the United Nations Economic Commission for Africa stated that one in seven global maternal deaths occurs in Nigeria, and this means more than 50,000 women die per year in Nigeria (Meh et al., 2019). The delay in deciding whether to seek medical attention or not may be born out of ignorance of the risks associated with pregnancy and childbirth or other socioeconomic factors such as lack of funds to pay the hospital bill.

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Birth preparedness and complication readiness involves a set of actions that must be taken to ensure successful delivery. According to the World Health Organisation (2020), birth preparedness involves a set of actions taken by expectant mothers, their families, and communities to ensure that they are well-prepared for the various aspects of childbirth, including medical care, transportation, finances, and emotional support. Birth preparedness aims to reduce maternal and neonatal mortality and improve maternal and child health outcomes by ensuring that pregnant women have access to timely and appropriate care during pregnancy, labour, and the postpartum period. Olowokere et al. (2020) opined that identification of a place of delivery is a key component of birth preparedness.

The past obstetric history of the woman, such as the mode of previous delivery, plays a role in deciding birth preparedness. The previous mode of delivery gives women the opportunity to learn from experience. Women with a history of previous mode of delivery, whether vaginal or cesarean, bring valuable experiential knowledge to their current pregnancy. According to Dodds et al. (2010) women who have previously experienced a cesarean section or vaginal delivery often draw upon their past childbirth experiences to inform their birth preparedness strategies and enhance their readiness for potential complications. Their previous childbirth experiences serve as a foundation upon which they build their birth preparedness plans. These women have a unique insight into the challenges and demands of labour, delivery, and postpartum recovery based on their past encounters (Lundgren et al., 2015). For women who previously underwent a cesarean section, their birth preparedness often includes discussions with healthcare providers about the potential for a vaginal birth after cesarean (VBAC) and the associated risks and benefits. Such discussions reflect a proactive approach to exploring options and making informed decisions that align with the woman's preferences and health status (Brown et al., 2015). The experience of a previous mode of delivery empowers women to engage in informed decision-making regarding the management of the current pregnancy and childbirth.

Previous history of haemorrhage can significantly influence birth preparedness, shaping an expectant mother's approach to the current pregnancy and childbirth (Elmir et al., 2010). According to Soma-Pillay et al. (2016), A history of haemorrhage during a previous pregnancy or childbirth creates a heightened awareness of the risks associated with excessive bleeding. Women who have faced haemorrhage firsthand have a unique understanding of the urgency and severity of the condition. This learned awareness prompts proactive measures in birth preparedness to mitigate the risk of haemorrhage recurrence. Women who have previously experienced a hemorrhagic event during childbirth or pregnancy often draw upon these past experiences to inform their birth preparedness strategies and enhance their readiness for potential complications (Litorp et al., 2017). Previous history of haemorrhage fuels a proactive approach to emergency preparedness. Expectant mothers, in collaboration with their healthcare providers, develop comprehensive birth preparedness plans that specifically address the risk of haemorrhage. These plans may include arrangements for rapid transportation to a healthcare facility, discussions about the availability of blood products, and communication strategies for alerting healthcare providers. (Soma-Pillay et al., 2016).

The availability of skilled birth attendants is a crucial correlate of birth preparedness, playing a pivotal role in ensuring safe and successful childbirth experiences for expectant mothers. Skilled birth attendants encompass a range of healthcare professionals, including midwives, doctors, and trained health workers, who possess the expertise to provide comprehensive maternal and newborn care throughout the childbirth process (WHO, 2018). Access to quality care is essential for birth preparedness. Skilled birth attendants play a crucial role in providing comprehensive care to expectant mothers during pregnancy, labour, and childbirth. They are equipped with the knowledge and expertise to conduct timely antenatal check-ups and provide essential medical interventions, ensuring that any potential complications are addressed early in the process. This access to skilled care enhances birth preparedness by equipping expectant mothers with the necessary information and support to manage their pregnancy. Availability of skilled birth attendants enhances timely recognition of complications. The utilisation of antenatal care services is a pivotal correlate of birth preparedness and complication readiness. Antenatal care encompasses a series of healthcare visits that expectant mothers undergo during pregnancy to monitor their health and the well-being of the developing fetus (WHO, 2016). They equip expectant mothers with knowledge about recognising warning signs, seeking timely care, and making informed decisions. By offering tailored guidance based on individual needs, antenatal care services empower expectant mothers to actively engage in their birth preparedness journey (Sialubanje et al., 2017). Moreover, antenatal care services provide an opportunity for healthcare providers to educate expectant mothers about birth preparedness. Furthermore, antenatal care services offer a platform for early screening and management of complications that may arise during pregnancy.

Women's unpreparedness for childbirth and complications during the intrapartum period are responsible for poor management of obstetric emergencies, which have contributed in no small measure to delivery-related maternal mortality and morbidity. Pregnancy and delivery complications have continued to pose a huge health problem, especially in developing countries of the world, including Nigeria, particularly in rural areas. In Rivers South East Senatorial District, where the study was carried out, most of the Local Government Areas that make up the District have a rural setting, where resources from the government are inadequate to cater for all pregnant women. As such, women are expected to prepare for their childbirth as well as complications, but this is not the case as the majority of them are scarcely seen during antenatal only to be rushed due to emergencies. More worrisome is the fact that they come with nothing, that is, no childbirth pack. This is attributed to the fact that the majority of the rural women do not know the factors associated with pregnancy and childbirth because they don't attend antenatal care clinics where such lifesaving information is made available to them. This ignited the quest for this study to explore the factors which influenced their birth preparedness. Hence, this study investigated the correlates of birth preparedness/complication readiness among pregnant women in the South-East Senatorial District, Rivers State. The following research questions guided the study:

1. What is the relationship between the previous mode of delivery and birth preparedness/complication readiness among pregnant women attending antenatal care in the South-East Senatorial District, Rivers State?
2. What is the relationship between the previous history of haemorrhage and birth preparedness/complication readiness among pregnant women attending antenatal care in South-East Senatorial District, Rivers State?
3. What is the relationship between the availability of skilled birth attendants and birth preparedness/complication readiness among pregnant women attending antenatal care in the South-East Senatorial District, Rivers State?
4. What is the relationship between antenatal care services utilisation and birth preparedness/complication readiness among pregnant women attending antenatal care in South-East Senatorial District, Rivers State?

### Hypotheses

The following null hypotheses were formulated to guide the study:

1. There is no significant relationship between previous mode of delivery and birth preparedness/complication readiness among pregnant women attending antenatal care in the South-East Senatorial District, Rivers State.
2. There is no significant relationship between previous history of haemorrhage and birth preparedness/complication readiness among pregnant women attending antenatal care in South-East Senatorial District, Rivers State.
3. There is no significant relationship between availability of skilled birth attendants and birth preparedness/complication readiness among pregnant women attending antenatal care in the South-East Senatorial District, Rivers State.
4. There is no significant relationship between antenatal care services utilisation and birth preparedness/complication readiness among pregnant women attending antenatal care in the South-East Senatorial District, Rivers State.

### Methodology

This study adopted a descriptive correlational research design. The population of this study consisted of 1,965 women attending a natal clinic in the South East senatorial district of Rivers State (Primary HealthCare Board, 2023). The sample size for this study is 983, which is 50% of the entire population (1,965) because, when the population is a thousand or a few thousand, 50% of the population can be used as the sample size. The data collection instrument was a structured questionnaire titled 'Correlates of Birth Preparedness Questionnaire (BPQ).' The instrument was adapted from the Johns Hopkins Initiative for International Education in Gynaecology and Obstetrics (JHPIEGO) monitoring questionnaire for birth preparedness (2004). The reliability coefficient of the instrument was 0.81, which certifies the instrument to be reliable for use. Data collected were analysed with the aid of the Statistical Product for Service Solution (SPSS V-23). Using Pearson Correlation at a 0.05 level of significance. The guide for answering the research questions is as follows: 0.00-0.19 is very low, 0.20-0.39 is low, 0.40-0.59 is moderate, 0.60-0.79 is high, and 0.80 above is very high.

## Results

**Table 1: Pearson Correlation showing a significant relationship between the previous mode of delivery and BP/CR among pregnant women attending ANC in the South-East Senatorial District**

Variables		BP/CR	Mode of delivery	Decision
BP/CR	Pearson Correlation	1	0.59	H <sub>0</sub> rejected
	Sig.	.	0.00*	
	N	969	969	
Mode of delivery	Pearson Correlation Sig.	0.59	1	
		0.00*	.	
	N	969	969	

\*Significant;  $p < 0.05$ .

Table 1 presents the Pearson Correlation analysis on the significant relationship between the previous mode of delivery and BP/CR among pregnant women attending ANC in the South-East Senatorial District. The result revealed that there was a significant moderate relationship between previous mode of delivery and BP/CR as  $p < 0.05$  ( $n = 969$ ;  $r = 0.59$ ;  $p = 0.00$ ). Thus, the null hypothesis, which stated that there is no significant relationship between previous mode of delivery and BP/CR among pregnant women attending ANC in the South-East Senatorial District, was rejected.

**Table 2: Pearson Correlation showing a significant relationship between previous history of haemorrhage and BP/CR among pregnant women attending ANC in South-East Senatorial District**

Variables		BP/CR	Hemorrhage	Decision
BP/CR	Pearson Correlation	1	0.47	H <sub>0</sub> rejected
	Sig.	.	0.00*	
	N	969	969	
History of haemorrhage	Pearson Correlation Sig.	0.47	1	
		0.00*	.	
	N	969	969	

\*Significant;  $p < 0.05$ .

Table 2 presents the Pearson Correlation analysis on the significant relationship between previous history of haemorrhage and BP/CR among pregnant women attending ANC in the South-East Senatorial District. The result revealed that there was a significant moderate relationship between previous history of hemorrhage and BP/CR as  $p < 0.05$  ( $n = 969$ ;  $r = 0.47$ ;  $p = 0.00$ ). Thus, the null hypothesis which stated that there is no significant relationship between previous history of hemorrhage and BP/CR among pregnant women attending ANC in South-East Senatorial District was rejected.

**Table 3: Pearson Correlation showing significant relationship between availability of skilled birth attendants and BP/CR among pregnant women attending ANC in South-East Senatorial District**

Variables		BP/CR	availability of birth attendant	Decision
BP/CR	Pearson Correlation	1	0.28	H <sub>0</sub> rejected
	Sig.	.	0.00*	
	N	969	969	
Availability of birth attendants	Pearson Correlation Sig.	0.28	1	
		0.00*	.	
	N	969	969	

\*Significant;  $p < 0.05$ .

Table 3 presents the Pearson Correlation analysis on significant relationship between availability of skilled birth attendants and BP/CR among pregnant women attending ANC in South-East Senatorial District. The result revealed that there was a significant low relationship between availability of skilled birth attendants and BP/CR as  $p < 0.05$  ( $n = 969$ ;  $r = 0.28$ ;  $p = 0.00$ ). Thus, the null hypothesis which stated that there is no significant relationship between

availability of skilled birth attendants and BP/CR among pregnant women attending ANC in South-East Senatorial District was rejected.

**Table 4: Pearson Correlation showing significant relationship between antenatal care services utilization and BP/CR among pregnant women attending ANC in South-East Senatorial District**

Variables		BP/CR	antenatal care utilization	Decision
BP/CR	Pearson Correlation	1	0.67	$H_0$ rejected
	Sig.	.	0.02*	
	N	969	969	
Antenatal utilization	Pearson Correlation Sig.	0.67	1	
		0.02*	.	
	N	969	969	

\*Significant;  $p < 0.05$ .

Table 4 presents the Pearson Correlation analysis on significant relationship between antenatal care services utilization and BP/CR among pregnant women attending ANC in South-East Senatorial District. The result revealed that there was a significant high relationship between antenatal care services utilization and BP/CR as  $p < 0.05$  ( $n = 969$ ;  $r = 0.67$ ;  $p = 0.02$ ). Thus, the null hypothesis which stated that there is no significant relationship between antenatal care services utilization and BP/CR among pregnant women attending ANC in South-East Senatorial District was rejected.

### Discussion

The findings of this study showed that there was a significant relationship between previous mode of delivery and birth preparedness/complication readiness ( $n = 969$ ;  $r = 0.59$ ;  $p < 0.05$ ). The finding of this study is expected because previous childbirth experiences serve as a foundation upon which the women build their birth preparedness/complication readiness plans. By implication, previous mode of delivery gives women the opportunity to learn from experience. Women with a history of previous mode of delivery, whether vaginal or cesarean, bring valuable experiential knowledge to their current pregnancy. Consequently, those who delivered through cesarean section previously, may want to prepare more for any eventuality because of their previous experience. The finding of this study also corroborates that of (Jungari, 2020) study on birth preparedness/complication readiness and complications readiness in the 10 urban slums of Pune, which revealed that there is a positive relationship between mode of delivery and birth preparedness/complication readiness. The finding of this study corroborates that of (Gize et al., 2019) study on men's involvement in obstetrics care and birth preparedness/complication readiness in Burayu town administration, Oromia, Ethiopia which showed that there was a significant relationship between previous mode of delivery and birth preparedness/complication readiness. The similarity between the previous studies and the present one might be attributed to the homogeneity of the study population as both studies focused on women of reproductive age.

The result revealed that there was a significant relationship between previous history of hemorrhage and birth preparedness/complication readiness ( $n = 969$ ;  $r = 0.47$ ;  $p < 0.05$ ). This finding may not be argued against as it was anticipated because, women may draw upon their previously experienced hemorrhage during childbirth to inform their birth preparedness/complication readiness strategies and enhance their readiness for potential complications to avoid reoccurrence. The finding of this study corroborates that of (Gize et al., 2019) study on men's involvement in obstetrics care and birth preparedness/complication readiness in Burayu town administration, Oromia, Ethiopia which showed that there was a significant relationship between previous history of hemorrhage and birth preparedness/complication readiness. The finding of this study also corroborates that of (Jungari, 2020) study on birth preparedness/complication readiness and complications readiness in the 10 urban slums of Pune, which revealed that there is a positive relationship between previous history of hemorrhage and birth preparedness/complication readiness. The similarity between the previous studies and the present one might be attributed to the homogeneity of the study population.

The result revealed that there was a significant relationship between availability of skilled birth attendants and birth preparedness/complication readiness ( $n = 969$ ;  $r = 0.28$ ;  $p < 0.05$ ). The finding of this study is not surprising because when skilled birth attendants are availability, expectant mothers can have the opportunity to meet with them and get themselves equipped with necessary information and support to manage their pregnancy. The finding of this study gives credence to that of (Pervin et al., 2018) study on the determinants of birth preparedness/complication readiness

among pregnant women in a rural area in Bangladesh which showed that there was a significant relationship between availability of skilled birth attendants and birth preparedness/complication readiness. The result of this study is in consonance with that of (Ayele et al., 2019) whose study on utilization of skilled birth attendant at birth and associated factors among women who gave birth in the last 24 months preceding the survey in Gura Dhamole Woreda, Bale zone, southeast Ethiopia revealed a significant relationship between availability of skilled birth attendants and birth preparedness/complication readiness. The similarity between the previous studies and the present one might be attributed to the homogeneity of the study population.

The result revealed that there was a significant relationship between antenatal care services utilization and birth preparedness/complication readiness ( $n = 969$ ;  $r = 0.67$ ;  $p < 0.05$ ). The result of this study on the positive correlation between antenatal care services utilization and birth preparedness/complication readiness because it gives the mother the opportunity to monitor her health and well-being as well as that of the fetus, closely and be advised appropriately where necessary to prepare for childbirth. By implication, those who utilized antenatal care services were provided with an opportunity for early screening and management of complications that may arise during pregnancy; and be educate by healthcare providers about birth preparedness/complication readiness. The finding of this study gives credence to that of (Pervin et al., 2018) study on the determinants of birth preparedness/complication readiness among pregnant women in a rural area in Bangladesh which showed that there was a significant relationship between antenatal care services utilization and birth preparedness/complication readiness. The result of this study is in consonance with that of (Ayele et al., 2019) whose study on utilization of skilled birth attendant at birth and associated factors among women who gave birth in the last 24 months preceding the survey in Gura Dhamole Woreda, Bale zone, southeast Ethiopia revealed a significant relationship between antenatal care services utilization and birth preparedness/complication readiness. The finding of this study also corroborates that of (Anikwe et al., 2020) conducted a study on Birth preparedness/complication readiness among Pregnant Women in a Secondary Health Facility in Abakaliki, Ebonyi State, Nigeria which revealed that there is a positive relationship between antenatal care services utilization and birth preparedness/complication readiness. The similarity between the previous studies and the present one might be attributed to the similarity in the study designs as they both adopted the descriptive research design.

### Conclusion

The study concluded that adequate birth preparedness/complication readiness among pregnant women in South-East Senatorial District, Rivers State, requires a holistic approach that combines previous mode of delivery, previous history of hemorrhage, availability of skilled birth attendants, and antenatal care services utilization. By focusing on these areas, healthcare providers and policymakers can significantly improve maternal and neonatal outcomes.

### Recommendations

Based on the findings of the study, the following recommendations were made:

1. Healthcare workers, specifically nurses, midwives and obstetricians should provide targeted educational programmes to empower pregnant women and their families and ensure that they are adequately prepared for any eventuality that may occur during pregnancy, delivery and postpartum.
2. Women should make conscious effort to ensure they utilize antenatal care services to their advantage during childbirth by visiting the antenatal clinics at the scheduled dates.
3. Nurses and midwives should intensify their efforts to educate pregnant women on recognizing danger signs during pregnancy, labor, and postpartum, such as severe abdominal pain, heavy bleeding, preeclampsia, eclampsia, and other hypertensive disorders and encourage them to be adequately prepared by getting necessary supplies ready before the delivery period.
4. The Government should work in synergy with the ministry of health to address the problem of rural-urban disparities by ensuring adequate supply of emergency obstetric care materials and manpower in the rural areas as this will boost the women's childbirth self-efficacy.

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