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Factors Influencing Birth Preparedness and Complication Readiness among Post-Natal Women in Selected Primary Health Centers in Ibadan, Nigeria

Damilola E. Adeteye, Chizoma M. Ndikom, Margaret O. Akinwaare, and Taiwo O. Dosumu

ABSTRACT

Background: **Birth preparedness and complication readiness is a strategic intervention to achieve a reduction in the rate of maternal mortality. However, despite the importance and ease of use of this intervention, it has been observed that several factors have hindered the practice. Hence, the need to consider the knowledge, attitude, practice, and factors that influences Birth preparedness and Complication readiness among post-natal women.**

Method: **This descriptive cross-sectional study used a multi-stage sampling technique to select 116 post-natal women in selected primary health centers in Ibadan North Local Government Area, Oyo state. An adapted structured questionnaire was used to assess the knowledge, attitude, practice and factors influencing the practice of birth preparedness and complication readiness. Statistical analysis was done using Statistical Package for the social science (SPSS) version 21.0 software. Descriptive data were presented as frequency and percentages while the chi-square test was used to test the hypotheses at P value < 0.05.**

Result: **The majority of respondents were highly knowledgeable (86.2%). The respondents had a positive attitude towards birth preparedness and complication readiness (75%). The practice level was high among the respondents (71.6%). However, the factors that influenced practice were lack of adequate knowledge (X2=4.578, P =0.032), pre-mature delivery (X2=19.929, P=0.000) and environmental insecurities (X2=6.556, P=0.010).**

Conclusion: **There is a relationship between factors (lack of adequate knowledge, premature delivery and environmental insecurities) and the practice of birth preparedness and complication readiness. Hence, measures should be employed to address the identified factors to improve the practice of birth preparedness and complication readiness.**

Keywords: Birth preparedness, complication readiness, influencing factors, knowledge, post-natal women.

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D. E. Adeteye*
Department of Nursing, College of Medicine, University of Ibadan, Nigeria.
(e-mail: dammyteye1@gmail.com)
C. M. Ndikom
Department of Nursing, College of Medicine, University of Ibadan, Nigeria Nursing Science Programme, College of Health Sciences, Bowen University, Iwo, Nigeria.
(e-mail: cmndikom@gmail.com)
M. O. Akinwaare*
Department of Nursing, College of Medicine, University of Ibadan, Nigeria.
(e-mail: margaretakinwaare@gmail.com)
T. O. Dosumu
Nursing Science Programme, College of Health Sciences, Bowen University, Iwo, Nigeria.
(e-mail: taiwo.dosunmu@bowen.edu.ng)

****Corresponding Author***

I. Introduction

Pregnancy is a very unique and delicate period with a risk of unpredicted complications at any point through the process. Maternal mortality is a major health concern worldwide, especially in developing countries [1]. However, 99% of maternal deaths occur in developing countries (sub-Saharan Africa), of which Nigeria is included [2].

Hence there is a need for strategies to overcome some recognized delays related to the sudden complication. These delays include a lack of knowledge of possible obstetric complications and intervention, financial concerns, lack of accessibility, and availability of health facilities etc [3].

Most of these maternal and neonatal mortalities are caused by pregnancy and childbirth complications. Over time, it has been observed that maternal mortality and morbidity can be linked to preventable and prompt management of the complication that arises if adequate birth preparation has been taken into action. To reduce the rate of maternal mortality, birth preparedness and complication readiness is a strategic intervention to achieve it. It is a major component of the safe motherhood program [4].

According to World Health Organization, birth preparedness and complication readiness is recommended to be integrated into the focused antenatal care of a pregnant woman [4]. Birth preparedness entails a detailed plan that surrounds the delivery of the child. It includes immediate identification of negative signs and symptoms that requires prompt management, a plan of delivery place and midwife, emergency requirement like money, transport schedule and a significant other that can decide in a case of an unforeseen obstetric complication [5].

Birth preparation and complication readiness is made by the health care facilities, health care professionals, the pregnant woman, her significant others, and the society at large. It is a specified, action plan and decision made that

covers the antenatal, intrapartum, and postpartum period of the woman. This plan aids pregnant women to access skilled services during labor and consequently attend promptly to any identified complications. If birth preparedness and complication readiness is planned appropriately, it will contribute significantly to the reduction of maternal and neonatal mortality as the pregnant women and their families are adequately prepared for the birth or any arising complication [1].

Though these services (comprehensive birth plan and complication preparedness) are available, they are not being utilized maximally. In a study in Cross River State in Nigeria, it was observed that a majority still delivered at home. This was seen to influence the high maternal mortality rate in the state [6].

Lack of proper birth preparedness and complication readiness is noted to contribute to the delay in receiving skilled obstetric services [4].

According to previous studies, several factors were found to influence birth preparedness and complication readiness including socio-demographic factors (age, educational achievements), past obstetric health history, cultural factors, and socioeconomic factors [5]. With this disparity, the factors hindering the practice of birth preparedness and complication readiness must be examined closely [7].

II. Methodology

A. Study Area

The study was carried out in Ibadan North Local Government Area, Ibadan, Oyo state. Ibadan North covers a large expanse of land with an area of 420sqm. The headquarters of Ibadan North Local Government Area is located at Agodi. The primary health centers are located in the following areas: Agbowo Mokola, Obasa, Oke-Are, Oke-Itunu, Sabo, Samonda and Sango., Ago Tapa, Barika, Basorun, Bodija, Idera, Idiogungun,

B. Study Design

The research design was a descriptive cross-sectional study which is aimed at identifying factors that influences birth preparedness and complication readiness among the post-natal women attending the selected primary health care centers in Ibadan North LGA, Oyo state.

C. Sample Size Determination

The study sample size was calculated using Yaro Yamane formula:

$$n = \frac{N}{1 + N(e)^2}$$

Where
n = Sample size
N = finite population size =160
e = degree of error tolerance (0.05)
Solving the formula

$$n = \frac{160}{1 + 160(0.05)^2}$$

$$n = \frac{160}{1 + 0.4}$$

$$n = 114.28$$

$$n = 114$$

Hence, the sample size for the study was 114.

D. Sampling Techniques

Ibadan North local government area was chosen through purposive sampling. Study participants whom the researcher came across and were willing to participate were selected. A multi-stage sampling technique was used. Using Simple random sampling, four of the Primary health centers were chosen from the fourteen primary health centers in Ibadan North local government by balloting. Using simple random sampling, 2 random clinic days out of 4 clinic days in a month were selected by balloting. The post-natal women will be selected through a random sampling method.

E. Data Collection Instruments

An adapted structured questionnaire which was self-administered was used after a vast literature review and within the objectives of the study. The adapted questionnaire includes sections covering the socio-demographic characteristics of participants, the awareness, knowledge and practice of birth preparedness and complication readiness among participants and the factors affecting the practice of birth preparedness and complication readiness.

F. Method of Data Collection

Ethical approval was obtained from the UI/UCH Ethical review committee with ethical registration number: NHREC/05/01/2008a and assigned number: UI/EC/21/0424 to conduct the study. A letter of introduction was addressed to the coordinator of Ibadan North Local Government Primary Health centers. The letter was duly signed and permission to get questionnaires distributed were given by the coordinator and charge matron of each center.

The Charge matron was first informed about the research study and the essence of the research. On approval, the researcher then proceeded to the selected participants to inform them and obtain their consent before the questionnaires were administered in print. Each participant spent 10-15 minutes responding adequately to the questionnaires.

The Charge matron was first informed about the research study and the essence of the research. On approval, the researcher then proceeded to participants selected to administer questionnaires in print within 10-15 minutes.

G. Data Analysis

Data obtained were screened for errors and then analyzed. The data collected from the questionnaire were coded prior to entry. The collected information was analyzed using SPSS 21 version software. Chi-Square test were used to analyze the association between the variables (practices and influencing factors) and P-value less than or equal to 0.05 was taken as statistically significant.

III. Results

A. Tables

A total of one hundred and sixteen (116) nursing mothers who attended immunization clinic at the selected primary

health centers in Ibadan North L.G.A., Oyo state giving a respondent rate of 100%.

Table I shows the distribution of the respondents based on age, tribe, education, marital status, religion and number of previous birth. It shows specifically that 30.2% were between age 19 – 25 years, 55.2% were between age 26 – 32 years, 12.1% were between age 33-39 years and 2.6% were 40 years and above. The distribution shows that 74.1% were Yoruba, 11.2% were Hausa, 13.8% were Igbo, and 0.9% was from other tribes. It also shows that 3.4% had a non-formal education, 7.8% had primary education, 36.2% had a secondary education and 52.6% were tertiary school graduate. It shows 9.5% were single while 90.5% were married. Majority, 68.1% practice Islam while 31.9% practice Christianity as a religion. 43.1% has had one (1) previous delivery, making them first time mums. About 24.1% had two (2) previous births, 22.4% had about three (3) births while minority 10.3% had four (4) previous births.

TABLE I: SOCIODEMOGRAPHIC CHARACTERISTICS

Response Category	Frequency	Percentage
Age	35	30.2
19-25	64	55.2
26-32	14	12.1
33-39	3	2.6
40 and above		
Ethnic group		
Hausa	13	11.2
Igbo	16	13.8
Yoruba	86	74.1
Others	1	0.9
Educational level		
Non-formal	4	
Primary	9	3.4
Secondary	42	7.8
Tertiary	61	36.2
Marital status		52.6
Single	11	9.5
Married	105	90.5
Religion	79	68.1
Islam	37	31.9
Christianity		
No of previous birth		
1	50	43.1
2	28	24.1
3	26	22.4
4	12	10.3

TABLE II: AWARENESS OF BIRTH PREPAREDNESS AND COMPLICATION READINESS

Response Category	Frequency	Percentage
Heard about birth planning and complication Readiness		
Yes	113	97.4
No	3	2.6
Source of information about Birth planning and complication readiness		
Family	-	-
Friends	6	5.2
Mass media	12	10.3
Community Health workers	34	29.3
Health Facility	34	29.3
Campaign awareness	9	7.8
Others	1	0.9

Table II below shows the various sources of information about birth preparedness and complication readiness. 97.4% of the total participants reported that they have heard about birth preparedness and complication readiness previously while 2.6% state otherwise. Common source of information was community health workers and health facility which accounts for 29.3% and 29.3% of the respondents respectively. 10.3% reported that they gained information from mass media, 5.2% from friends, 7.8% from campaign awareness, and 0.9% from other resources.

TABLE III: KNOWLEDGE OF BIRTH PREPAREDNESS AND COMPLICATION READINESS

Knowledge Items	Yes (%)	No (%)
Dangers signs during Pregnancy	75 (64.7)	41 (35.3)
Anaemia*	76 (65.5)	40 (34.5)
Morning sickness	93 (80.2)	23 (19.8)
Dizziness and Blurred vision*	92 (79.3)	24 (20.7)
Severe headache*	45 (38.8)	71 (61.2)
Frequent urination	31 (26.7)	85 (73.3)
Excessive eating	63 (54.3)	53 (45.7)
Swelling of hands, legs, face, and entire body*	86 (74.1)	30 (25.9)
Convulsion*	98 (84.5)	18 (15.5)
High fever*		
Danger signs during or after childbirth	97 (83.6)	19 (16.4)
Heavy vaginal bleeding*	81 (69.8)	35 (30.2)
Delayed or retained placenta*	65 (56.0)	51 (44.0)
Ruptured membrane outside delivery place	74 (63.8)	42 (36.2)
Cord presenting before baby*	91 (78.4)	25 (21.6)
Still birth*		
Activities involved with birth preparedness and complication readiness		
Having mother around	73 (62.9)	43 (37.1)
Identifying appropriate health facility	99 (85.3)	17 (14.7)
Saving money to be used during emergency	90 (77.6)	26 (22.4)
Making plans for communication means	85 (73.3)	31 (26.7)
Making a plan for transportation means	82 (70.7)	34 (29.3)
Choosing a beautiful and young provider	41 (35.3)	75 (64.7)
Allowing the husband to be at the delivery	62 (53.4)	54 (46.6)
Choosing a skilled provider	65 (56.0)	51 (44.0)
Preparing essential items for clean and safe delivery	113 (97.4)	3 (2.6)
Importance of seeking care without delay when complication occur	93 (80.2)	23 (19.8)
Identify the sign of an obstetric emergency	78 (67.2)	38 (32.8)
Plan to respond to emergency without delays	76 (65.5)	40 (34.5)
Know the location of the nearest health centre	98 (84.5)	18 (15.5)
Arrangement for blood donors in case of an emergency	32 (27.6)	84 (72.4)

*Indicates correct response

Table III shows that majority of the participants could adequately identify the danger signs that could happen during pregnancy. 100(86.2%) of the study participants', had a knowledge score above the mean value while 16 (113.8%) scored below the mean value.

Table IV below revealed that the majority (75%) of the respondents had a positive attitude towards birth preparedness and complication readiness while 25% shows a negative attitude.

In Table V, among the study participants, 71.6% scored above the mean score in the practice of birth preparedness and complication readiness, while 28.4% scored below the mean value.

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TABLE IV: ATTITUDE TO BIRTH PREPAREDNESS AND COMPLICATION READINESS

Attitude Item	Response	Frequency%
It is a lack of faith in God	Strongly Agree	- (-)
	Agree	6 (5.2)
	Undecided	8 (6.9)
	Disagree	24 (20.7)
	Strongly Disagree	78 (67.2)
It helps promote timely access to skilled maternal health service	Strongly Agree	58 (50.0)
	Agree	45 (38.8)
	Undecided	4 (3.4)
	Disagree	3(2.6)
	Strongly Disagree	6 (5.2)
No need to prepare for complications in pregnancy	Strongly Agree	22 (19.0)
	Agree	21 (18.1)
	Undecided	11 (9.5)
	Disagree	42 (36.2)
	Strongly Disagree	20 (17.2)
It aid seek care without delay in obstetric complication and delivery	Strongly Agree	39 (33.6)
	Agree	49 (42.2)
	Undecided	9 (7.8)
	Disagree	14 (12.1)
	Strongly Disagree	5 (4.3)
Help ensure the woman receive professional care	Strongly Agree	50 (43.1)
	Agree	40 (34.5)
	Undecided	19 (16.4)
	Disagree	7 (6.0)
	Strongly Disagree	- (-)
It increases delays in obstetric complications	Strongly Agree	14 (12.1)
	Agree	15 (12.9)
	Undecided	40 (34.5)
	Disagree	25 (21.6)
	Strongly Disagree	22 (19.0)
It ensures readiness and timely usage of maternal and neonatal health care	Strongly Agree	47 (40.5)
	Agree	50 (43.1)
	Undecided	15 (12.9)
	Disagree	2 (1.7)
	Strongly Disagree	2 (1.7)

TABLE V: PRACTICE OF BIRTH PREPAREDNESS AND COMPLICATION READINESS

Practice Item	Response	Frequency%
I practiced all I was taught in antenatal classes	Yes	75 (64.7)
	No	41 (35.3)
I knew all the danger signs of pregnancy and what to do	Yes	75 (64.7)
	No	41 (35.3)
I decided the facilities I had my delivery	Yes	56 (48.3)
	No	60 (51.7)
I had all the baby's clothing and other requirements before the delivery date	Yes	114 (98.3)
	No	2 (1.7)
I had a transportation schedule to my delivery centre prepared for emergency	Yes	86 (74.1)
	No	30 (25.9)
I had a blood donor available at my delivery	Yes	18 (15.5)
	No	98 (84.5)
I made arrangement to care for the home in my delivery absence	Yes	71 (61.2)
	No	45 (38.8)
I attended antenatal clinic at scheduled times	Yes	100 (86.2)
	No	16 (13.8)

TABLE VI: FACTORS INFLUENCING BIRTH PREPAREDNESS AND COMPLICATION READINESS

Factors	Response	Frequency%
Distance of health facility to home	Yes	39 (33.6)
	No	77 (66.4)
Lack of adequate knowledge	Yes	46 (39.7)
	No	70 (60.3)
Lack of blood donor	Yes	24 (20.7)
	No	92 (79.3)
Lack of money	Yes	46 (39.7)
	No	70 (60.3)
Lack of transportation especially at night	Yes	33 (28.4)
	No	83 (71.6)
Lack of support system	Yes	36 (31.0)
	No	80 (69.0)
Pre-mature delivery	Yes	35(30.2)
	No	81 (69.8)
Environmental insecurities	Yes	46 (39.7)
	No	70 (60.3)

Table VI showed that Lack of adequate knowledge, lack of money, and environmental securities were more identified as factors influencing birth preparedness and complication readiness among the respondents with 39.7% each.

Table VII revealed that there is an association between the influencing factors (lack of adequate knowledge, Pre-mature delivery and Environmental insecurities) and the practice of birth preparedness among post-natal women in Ibadan North Local Government Area, Oyo state as the result of the significant value (P-value) is less than 0.05.

TABLE VII: ASSOCIATION BETWEEN INFLUENCING FACTORS AND PRACTICE OF BIRTH PREPAREDNESS AND COMPLICATION READINESS

Influencing Factors	Practice Bad	Practice Good	X2	P-Value
Distance of health facility to home				
YES	24	53	0.833	0.361
NO	9	30		
Lack of adequate knowledge				
YES	25	45	4.578	0.032
NO	8	38		
Lack of blood donor				
YES	24	68	1.218	0.270
NO	9	15		
Lack of money				
YES	22	48	0.770	0.380
NO	11	35		
Lack of transportation especially at night				
YES	26	57	1.186	0.276
NO	7	26		
Lack of support system				
YES	25	55	0.994	0.319
NO	8	28		
Pre-mature delivery				
YES	33	48	19.929	0.000
NO	-	35		
Environmental insecurities				
YES	7	39	6.556	0.010
NO	26	44		

IV. DISCUSSION OF FINDING

Majority of the participants reported that they have heard about birth preparedness and complication readiness previously. The common source of information was community health workers and health facilities which correlates with a study among antenatal clients [8], who stated that over 60% of the respondents were informed about birth preparedness and complication readiness by their health workers.

The study revealed that most of the study participants had a good knowledge of birth preparedness and complication readiness. This result is in slight contradiction to a study by [9] which revealed a very low knowledge of birth preparedness and complication readiness among expectant mothers.

The majority of the participants could adequately identify the danger signs that could happen during pregnancy and after childbirth. This is contrary to [8] and [9] which stated that respondents' knowledge of danger signs in pregnancy and after childbirth was low, and many respondents did not know about birth preparedness and had no plans for emergencies.

The majority identified the following activities as activities involved with birth preparedness and complication readiness:

99 (85.3%) identification of appropriate health facility, 90 (77.6%) Emergency money saving, 82 (70.7%) transportation means, 65 (56.0%) skilled providers among many other activities. However, only a few 43 (37.1%) could identify that having a mother around was not an activity of birth preparedness and complication readiness.

This study showed that the majority of the study participants had practiced birth preparedness and complication readiness. This is similar to the study conducted by [10] who noted that most of the respondents were considered as being prepared for birth and its complications but different from a study by [11] who noted that a minority of the respondents were prepared for birth and its complications.

However, most of the participants practiced all they were taught in antenatal classes and knew all the danger signs of pregnancy and what to do when they occur. This is however different from a study conducted among antenatal women [8] who noted that most women did not have a clear plan of what to do in case of an obstetric emergency. Most of the postpartum women could not decide on the facility where they had their delivery but had the baby's clothing and other requirements packed before the delivery date and transport scheduled to their delivery centre.

It is worthy of note that most respondents did not have a blood donor available at their delivery. The same was observed in a study done by [12] which stated that most of the respondents made no arrangement for a blood donor.

The significant factor affecting the practice of birth preparedness mentioned by study participants is that they had inadequate knowledge about birth preparedness and complication readiness. Pre-mature delivery was also another identified factor of significant value to the study.

Environmental insecurity was another key factor that hindered the practice of birth preparedness and complication readiness. This is similar to a study [13] which identified environmental insecurities in terms of stigma toward unmarried women as a key hindrance to birth preparedness.

V. Conclusion

From the study conducted and the result analyzed, the following were identified as the several factors that influence the practice of birth preparedness and complication readiness among post-natal women. They include; a lack of adequate knowledge, premature delivery, and insecurities about the environment. A high percentage of the nursing mothers who were aware of Birth preparedness and complication readiness in the study got their information from the Community health workers and health facilities. This shows that community health workers can and should help address the factors during antenatal classes. This can be done by effectively educating antenatal women about birth preparedness and complication readiness strategy with premature delivery. Government should implement policies that help address the insecurities in the environment.

Ethical Approval

Ethical approval was obtained from the University of Ibadan/University College Hospital Ethical review committee with ethical registration number: NHREC/05/01/2008a and assigned number: UI/EC/21/0424 before the commencement of the research. Informed consent was signed by all participants with the assurance of anonymity and confidentiality of all information provided by the respondents.

Acknowledgment

We appreciate our respondents for taking the time to participate in the study.

Conflict of Interest

The authors declare that they do not have any conflict of interest.

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