

**SOCIO-ECONOMIC DETERMINANTS OF BIRTH PREPAREDNESS AND
COMPLICATION READINESS BEHAVIOUR AMONG PREGNANT
WOMEN IN UGHELLI NORTH LOCAL GOVERNMENT AREA
OF DELTA STATE OF NIGERIA**

SEDE, Igbaudumhe Peter

¹Department of Economics and Statistics,
Faculty of Social Sciences,
University of Benin,
p.petersede@gmail.com;
peter.sede@uniben.edu.

And

ROLLE, R. Ahuru

Department of Economics,
Michael and Cecilia Ibru University,
Agbaha-otor,
P.M.B.100, Ughelli,
Delta State
remirolle1986@yahoo.com,

Abstract

In this paper, we investigated the impact of selected socio-cultural factors on birth preparedness practices and complication readiness among pregnant women in Ughelli North Local Government Area of Delta state. A multi-stage sampling technique was utilized, which involved the selection of the community Agbara from among the seven communities in the local government and using convenience sampling to select Agbara-othor. Purposive and probability sampling was used to select 75 women who are either pregnant and close to delivery or have a baby less than one year old. The study built on the Andersen health utilization model. Specifically, we examined the impact of predisposing and enabling factors on birth preparedness. The data analyzed showed that about 38% of the respondents were prepared for birth and complication readiness, while 62% were not. The binomial logit model shows that women with higher educational qualification, women that are employed, those with history of obstetric complications, those with higher number of childbirth, women with knowledge of obstetric complications and those whose husbands are literate are more likely to prepare for child delivery and ready for complications. Women that are divorced and widowed were found to be less likely to prepare for both child delivery and complications. The study recommends among other things that health education for women in the

locality should be expanded. Knowledge of obstetric complications should be integrated into ante natal care for all pregnant women in the locality and in promoting the health of women, the educational status of husbands should be duly considered.

Key words: Birth preparedness, Socio-cultural factors, Binomial logit and Delta state.

1.0 Introduction

Childbearing in Nigeria is associated with grief, pains, ill-health and sometimes death (Oluwatoyin, Folasade & Fagbeminiyi, 2015). Available data from World Health Organization (2015) and UNICEF (2011) put the number of maternal death in Nigeria at 54,000 annually. According to report from UNICEF (2011) every day 145 women die in Nigeria as a result of pregnancy-related complications. Nigeria constitutes 2% of world population yet accounts for 14% of global maternal burden (Idowu, 2013; Nigerian Health Market Study Report, 2015; Onumere, 2010; Ogundipe & Adeniyi, 2011). Currently, the maternal mortality rate is put at 1 mother's death per every hundred deliveries (National Demographic and Health Survey, 2013). The chance of a mother dying during pregnancy, delivery or post-partum period is 1-in-23 compared with 1-in-38,000 for developed countries. Most maternal deaths are due to five obstetric complications: post-partum hemorrhage, obstructed labour, hypertensive disorder, unsafe abortion, malaria and HIV (WHO, 2015; Ibrahim, 2016; Idowu, 2013).

A large number of maternal deaths can be prevented. Increasing access to skilled attendant at delivery and antenatal care services are key interventions that have proved effective for reducing maternal mortality and morbidity (WHO, 2014). Increasing access to skilled attendant at delivery and antenatal care services are key interventions that have proved effective for reducing maternal mortality and morbidity (WHO, 2014; Sayki and Abor, 2011).

Maternal mortality is therefore closely connected to access to professional health care providers and qualitative obstetric care. The WHO (2015) proposed that mothers should have qualitative antenatal care services, which covers education on obstetric complication. Knowledge of obstetric complications and birth preparedness practices are among safe motherhood strategy which has the objective of promoting timely utilization of maternal and neonatal care during child bearing and emergencies complications thereby reducing delays in seeking, reaching and receiving care (WHO, 2002 & 2006). Birth preparedness is an act of planning on the detailed steps of actions to be undertaken if complications result during child-bearing or the post -partum period (JHPIEGO, 2001).

Every pregnant woman faces the risk of pregnancy-related complications. It is therefore pertinent that all pregnant women must have laid down plans for handling unanticipated complications both during pregnancy and post-partum period (Kaye et al, 2003; UNDP, 2010). Tilahun and Senega 2016) remark that birth preparedness is a comprehensive matrix that includes preparing pregnant women, their families, communities, facilities, policy makers in order to reduce the delays that contribute to both

maternal and child deaths and ensure that all pregnant women receive timely preparations and rapid actions.

In Nigeria, very little has been documented on birth preparedness practices and complication readiness (BPCR). A good number of the studies on safe motherhood are biased in favour of maternal health service utilization (see Babalola & Fatusi 2009; Oruboloye & Ajakaiye, 2002; Ogujuyigbe & Liasu, 2007; Falkingham, 2003; Das Gupta, 1997). This study is therefore initiated to fill important gap by investigating the socio-cultural factors influencing BPCR among pregnant women in Ughelli North LGA of Delta state. This study will contribute to provide evidenced-based knowledge on the current status of BPCR among women in this setting. Findings from the study will provide data for policy makers, development agencies and programmers to design effective birth preparedness and complication readiness intervention programme in order to enhance maternal and child health.

2.1 Empirical Literature

In this section of the study, we present empirical literatures related to our study. We adopt chronological review to x-ray works done in relation to socioeconomic determinants of birth preparedness and complication readiness. The study however reviewed works on birth preparedness and complication readiness such as Fantahun & Hiluf (2008), Debelew, Afework and Yalew (2014) and Tilahun and Sinaga (2015) etc. Findings from reviewed studies guided this research work on identifying areas where attentions are still needed.

For instance, Fantahun & Hiluf (2008) in their study assessed knowledge and practices with respect to birth preparedness and complication readiness and factors associated with their practices among women who gave birth in the last 12 months preceding the survey in Adigrat town, Tigray regional state, Ethiopia. A cross sectional and community-based study was conducted for the period between September and October, 2006. A total of 538 women who gave birth in the last 12 months preceding the survey were randomly selected and data extracted from them using self- structured questionnaire. Considering preparedness practices such as saving money, having transport arrangements and deciding on the place of delivery, 22% of the respondents were considered prepared for birth. The multivariate logistic model revealed that literacy, marital status, parity, knowledge of danger signs and history of complications are all significant predictors of birth preparedness and complication readiness. The study among other things recommended that educational opportunities should be expanded for all women as a way of improving birth preparedness practices and complication readiness. In addition, health workers should seize the opportunities of women attending antenatal care services to educate pregnant women on the need for birth preparedness and complication readiness.

Debelew, Afework and Yalew (2014) investigated the factors that influence birth preparedness practices and complication readiness among 3,612 pregnant women in Jumma zone, south west Ethiopia from June- September, 2012. The researchers obtained the required data through self- structured questionnaire and mixed effects multilevel logistic regression model was used to identify the factors affecting birth preparedness and complication readiness. Summary statistics show that 23.3% of the interviewees were ready for birth and complications. The multinomial logistic regression shows that

geographical location, educational status, husband's occupation and wealth quintile, attitude and frequency of antenatal care visits and knowledge of danger signs during labour are key predictors of birth preparedness and complication readiness. The study concluded that the level of birth preparedness is low in the studied area. The study therefore recommended that efforts should be made to encourage antenatal care visits, emphasis should be placed on complication signs and promotion of community-based health education.

Tilahun and Sinaga (2015) in their study explored the association between knowledge of obstetric danger signs and birth preparedness among pregnant women on the eastern part of Ethiopia. A cross sectional community based study was conducted in Dere Teyara district (Woreda) of rural Harari region in the Eastern Ethiopia from March to May, 2013. A total of 436 pregnant women were selected using simple random sampling technique. The study utilized a self-structured questionnaire in collecting the relevant data. A multinomial logit model was utilized in investigating the predictors of birth preparedness practices and complication readiness. The summary statistics shows that 42.8% of the respondents had good birth preparedness, 40.9% had good knowledge of danger signs during pregnancy, delivery and post-partum. 75.5% had suffered bleeding, 68.8% suffered severe headache, 81.1% suffered severe bleeding and 39.2% prolonged labour. The study revealed that severe vaginal bleeding and swollen hands/face were more frequently reported as obstetric complications during post-partum period. The multinomial logit model showed that female literacy, husband education, and knowledge of danger signs are significant predictors of birth preparedness and complication readiness. The study recommended that there is need for implementation of BPCR and encouragement of early antenatal care visits, especially to illiterate women as a way of reducing maternal mortality.

Kaphle, Neupane, Kunwar & Acharya (2015) in their study assessed knowledge of danger signs and complication readiness among 310 pregnant women in Leknath municipality, Nepal. The study utilized cluster random sampling techniques in collecting data. The summary statistics revealed that 34.8%, 59% and 39.7% of respondents respectively had knowledge of danger signs during pregnancy, delivery and post-partum. Only 33.2% of women interviewed had knowledge on all five components of Birth preparedness and complication readiness. About same proportion (34.2%) of women were prepared for all five components of BPCR. The multinomial logit model revealed that women's education, antenatal care services and awareness of obstetric danger signs are significant predictor of BPCR. The study recommended that efforts should be made to improved knowledge of danger signs, encouragement of antenatal care usage and education of female folk.

Omari, Afrane and Ouma (2016) in their study examined birth preparedness and complication readiness among women attending antenatal care at health facilities within Bureti sub- country. A total of 149 women were sampled, the summary statistics showed that 70.5% (n= 105) were prepared for birth, while 90.6% (n=135) reported readiness for complications. Majority of the respondents 87.9 % (n =131) had identified a place for delivery, 72.5% (n=108) knew the expected date of delivery, only 4.7% had knowledge of danger signs and vaginal bleeding was the most mentioned signs of complications during

pregnancy, delivery and post-partum period. The study revealed that both knowledge of danger signs and utilization of ANC are significant predictors of BPCR. The authors recommended that the ministry of health should intensify ANC health education on obstetric danger signs to all women utilizing ANC irrespective of their demographic characteristics.

Biswas, Mukhopadhyay, Bhattacharjee, Malik, Nayat & Biswas (2016) in their study investigated awareness and practices of complications readiness among pregnant and recently delivered women in Bankura, west Bengal. A cross sectional and community based study was out among 120 pregnant and 235 recently delivered women. Data for the study was obtained through self- structured questionnaires and the statistical z-test was used for the analysis. The study found out that about 69.3% of the respondents registered for antenatal within the first trimester of their pregnancy. About 74% had four or more antenatal care check- ups and 81.3% had institutional delivery. The birth preparedness and complication readiness index for both pregnant women and recently delivered women are respectively 45.2 and 59 percent, whereas the index for the entire population is 52.1%. Though the rate of birth preparedness is high, the study recommended that health systems should use the opportunity of women utilizing antenatal care to educate them on the importance of birth preparedness and complication readiness.

2.2 Health Models

There are three (3) models here; the model can be regarded as containing sets of interacting variables. They are health belief model, choice making model and the three delay model. The models are presented below and discussed accordingly.

2.2.1 Health belief model

This model was postulated by Rosenstock, Hachbaum and Kegels (1994). This model discusses the individual's action to seek medical care. In short, an individual will seek medical help if he/she perceives that he is vulnerable to disease. An individual's perception of the severity of an ailment is another motivating factor. Due to the rationality of human nature, people will not seek medical help unless they believe that the benefit from such action exceeds its cost. The model also recognizes the impetus to seeking medical care from one's well- wishers; family members etc. Wolinsky (1988b) postulated that the utilization of health care services is contextually dependent.

2.2.2 Maine and Thaddeus (1994) Three Delay Model

Thaddeus and Maine (1994) asserted the Three Delay Model. The three delay model is premised on the orientations that maternal complications are usually unpredictable, most complications occur at home when women refused to use evidence-based maternity services and that maternal deaths can be prevented through tertiary prevention (preventing deaths among women who have been diagnosed with complications). The model presented three delays: (i) the elapsed of time between the onset of complication and recognition of the need to transport the patient to the facility (ii) the time lag between leaving the home and getting to health facility (iii) the time between when a patient gets to health facility and when appropriate treatment is provided.

Each of these delays has its distinctive determinants. For the first delay, it is mostly the inability of pregnant women and their family members to seek qualitative care. Several factors may account for this which include lack of money, poor road network, lack of knowledge of obstetrics complications during pregnancy and absence of complications responses. The third delay is usually as a result of lack of qualitative obstetrics care due to shortage of health manpower, lack of bed space and inadequate health facilities. However, the first delay may influence the third delays. For instance, if the family members of the pregnant women provide their assistance by helping to carry surgical kits for caesarean section and even purchasing most of the needed kits while coming to the hospital the effect of the third delay will be seriously reduced. According to Thaddeus and Maine (1994), the model is attractive because of its simplicity and actions.

2.2.3 Choice making model

This model was proposed by Young in 1981. The model is the outcome of cultural studies of health service utilization in Mexico. It incorporates four important determinants of health care service utilization- (1) perception gravity. It is the perception of the severity of ailment that determines whether the sick will utilize medical services (ii) the knowledge a patient has about the effectiveness of treatment will compel the patient to utilize that treatment before utilizing professional health care system (iii) the faith perception. An individual's perception that if he visits or utilizes medical services he will be healed compels him to do so (iv) the accessibility of treatment. The affordability of health services cost and the availability of health services impinge on the decision of the patient.

3.1 Conceptual Framework

This study adopts as its conceptual framework the health utilization model by Anderson (1968). The model trichotomized the determinants of health care utilization. Among these determinants are: predisposing characteristics of the individual. This includes, among other things, the individual's position within the social structure, demographics and beliefs of the benefit from health care services. The second one is the enabling characteristics. This explains the community and family resources at the disposal of the individual while the third one is the need based characteristics. It talks about the perception of the need for health services. Patients will always evaluate their need for medical help. This is informed by their knowledge of danger signs.

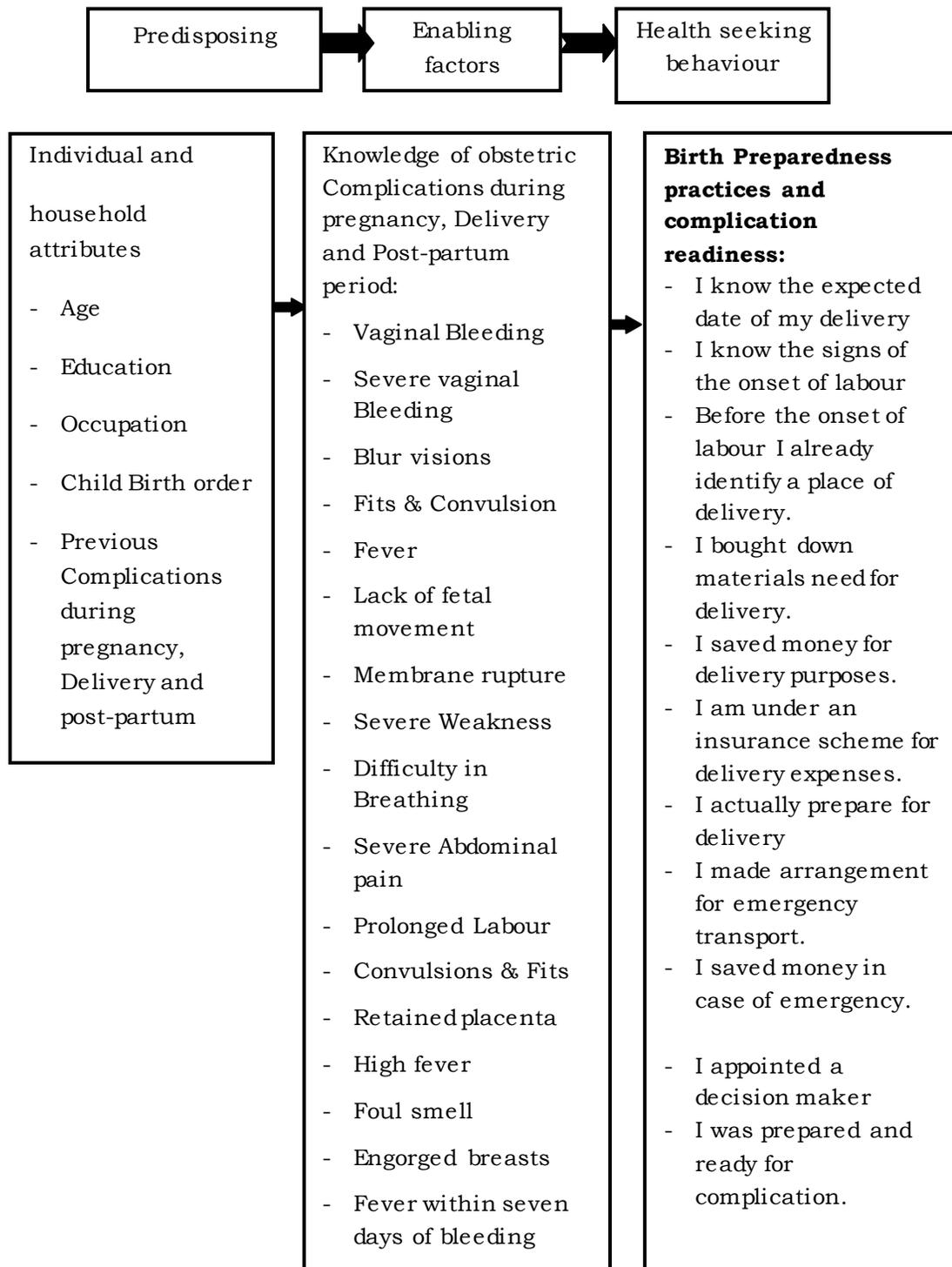


Fig 1: ANDERSEN'S Behavioral Models of Health Services Utilization

In the figure above, predisposing factors are the combination of demographic characteristics, social structure and health beliefs. The predisposing factors include age, gender, education, occupation, birth order, experience of complications in previous pregnancies and marital status, number of previous pregnancies and marital status. Enabling factors are those factors that enable an individual to purchase health services and include income, insurance, travel time and availability of health care providers. In this study, enabling factors are knowledge of danger signs during pregnancy, delivery and post-partum period. Need factor is the most important determinant of health service use. The need factor is one's perception of his/her status and the possible benefit from treatment. Health service uptake in the study comprises of birth preparedness practices and complication readiness. For the purpose of this study, we only consider the predisposing and enabling factors.

3.3 Research Methodology

3.3.1 Description of Study Location

The study location is Ughelli in Delta state. Ughelli North is one of the twenty one Local Government Areas in Delta state. Ughelli North lies between $9^{\circ} 45'N$ and $8^{\circ} 43'E$. It has an area of 818 square km and the population census of 2006 puts the population figure at 321,028, with a population density of 460.1 people per square km. While female constitutes 49.9% of the population, people within the age bracket 15-64 years constitute 57.6%, hence the population is both feminine and youthful by nature. There are seven communities and about 106 villages that make up Ughelli North. Among the villages that make up Ughelli North, Aghara-Othor was randomly selected. The selection of this particular village was entirely the researcher's choice and it is based on convenience and proximity. This village happens to be close to the researcher's place of work making it easier for the researcher to administer the questionnaire, since it is within the same community.

3.3.2 Data Collection Procedure

Survey research design was used for this study. According to Babbie (1986) survey research is used for descriptive, exploratory and explanatory purposes. This research approach entails seeking information from a group or selected individuals otherwise known as sample about issues, events and relationship concerning a larger group known as population to the extent that the responses provided by the sample should stand as the responses of the population. This makes the design appropriate and suitable for the study. The study adopts use of primary data to enhance originality of the quality of the work. Besides incomplete and outright dearth of time series data on some of the variables creates the necessity of primary data and hence the need for survey research method.

3.3.3 Research Instrument

Self-structured questionnaire was used for the study. According to Busha and Harter (1980) copies of questionnaire are used for survey research as instrument for primary data collection. The copies of questionnaire were structured in a detailed manner that captures the objectives of the study. The questions were structured close-ended in which the respondents were provided with multiple options. The questionnaire was designed to generate information on both the socioeconomic characteristics of respondents and other

core areas like experience with previous complications and birth preparedness practices. The questionnaire is structured into eight sections. Section A focuses on the personal data of the respondents, Section B on husband's personal data, section C reproductive history of the respondents, Section D utilization of antenatal care, section E on knowledge of obstetric complications during pregnancy, Section F on knowledge of obstetric complications during delivery, Section G on knowledge of complications during postpartum period and finally Section H on Birth Preparedness Characteristics. The researcher administered the questionnaire by himself to the respondents. To overcome language barrier, an assistant who understands Urhobo very well was hired. Urhobo is the mother tongue of the people in Ughelli North L.G.A. of Delta State.

3.3.4 Population and Sample

The study population comprises of all women of the reproductive age (15-49 years). Available data from Delta state strategic plan (2011-2015) puts the number of women of reproductive age in Delta state at 901,646. This figure shows an average of 38065 women within the reproductive age in each local government area. In a household survey framework, sample sizes usually vary depending on the purpose and size of the population. In national household survey, it is usual to have sample to population ratio of 1:500 or even 1: 1000 (Deaton, 1998). Using this ratio, a sample size of 75 is selected as the appropriate representative sample size of women within the reproductive age in Agbara-Othor.

3.3.5 Empirical Model

Logit model was used to analyze the effects of socio-cultural factors on Birth Preparedness Practices. The choice of the logit is appropriate for this study because the dependent variable is dummy or categorical in nature. Thus the logit model adapted from Hague et al (2009) is such that:

$$\mathbf{BPP} = \mathbf{B}_0 + \mathbf{B}_1\mathbf{AGE} + \mathbf{B}_2 \mathbf{EDU} + \mathbf{B}_3\mathbf{OCCUP} + \mathbf{B}_4\mathbf{PRECOMPL} + \mathbf{B}_5 \mathbf{Overallknowl} + \mathbf{B}_6 \mathbf{HusEdu} + \mathbf{uit} \text{-----(3.1)}$$

Where: **BPP**= Birth preparedness practice,

Age = Age

Edu=Educational status

Occup= occupation

Precompl = previous complication during delivery

Overall knowl= Overall knowledge of Danger signs.

Used=Husband education

Given that BPP is a dummy variable, it can be stated as such:

If ρ = probability that BPP = 1, $1 - \rho$ = probability that BPP = 0,

Then, the probability function can be defined as:

$$P=E(Y=1/x)=\frac{1}{1 + e^{-(b_1 age + b_2 Edu + b_3 Marstat + b_4 Occup + b_5 prevcompl + b_6 birth order + b_7 hus Edu)}} \dots\dots\dots(3.2)$$

Introducing natural logarithms on both sides give:

$$Li= \ln(\pi/ 1- \rho)= z_i \dots\dots\dots(3.3).$$

Where $z_i = (B_0+B_1age + B_2Edu+ B_3Marstat+ B_4OCcup+ B_5Prevcompl+ B_6 Birth order+ B_7HusEdu)$

3.3.6 Measurement of Variables

In order to estimate the effects of socioeconomic factors on Birth Preparedness Practices and Complication Readiness, nine predictors were utilized based on conceptual framework and prior empirical studies. The variables were defined as follows:

Birth Preparedness Practices (BPP): There are eleven questions testing how prepared a woman is for delivery and complications. For every one of these attitude the woman gets right she is scored 1 and eventually the percentage of her score is taken. The women is categorized as one prepared for both delivery and complication if she scores up to 20%, on the other hand if her score is less than 20% she is categorized as not prepared. Birth preparedness is discrete variable assuming 1 for women that are prepared for delivery and 0 for those not prepared.

AGE (age): This is the woman’s reproductive age categorized into 20-24, 25-29, 30-34 and 35 and above. The baseline category is the age bracket 20-24.

Education (Edu): This refers to the highest level of education of the woman. In the survey, women were classified into four levels of education: no formal education, primary education, secondary education and post- secondary education. The reference category is no formal education.

Marital Status: It is categorical. In this survey, we classify it in to four: married, single, widow and divorced.

Husband Education (Hus Edu): same with woman’s education. However, it is categorized into no formal education, primary and secondary. Because of the fewness of respondents with post-secondary education, we lump secondary and post- secondary as secondary education. The baseline category is no formal education.

Birth Order (Birth order): It investigates the number of previous delivery the woman had. It is categorized into 1 and above 1 child. The baseline category is 1 child.

Occupation (Occup): This focuses on whether the woman is working or a full house wife. It is categorical so that working women are assigned the value of 1 and full house wives are assigned the value of zero.

Previous complication (PREVCOMPL): This questions the woman's reproductive history whether she once gave birth through caesarian section or have a fetal loss. It is categorical variable assigning 1 to women with previous complications and zero to women without previous complications.

Overall knowledge of pregnancy-related complications (overknowl): The questions here are categorized into three: Knowledge of Obstetric Complication during pregnancy, Knowledge of Obstetrics Complications during Birth and Knowledge of Obstetrics Complications in post-partum period. For the three categories, there are altogether twenty questions. Each correct answer carries one mark. The percentage of correct answers for each woman is obtained. For women whose knowledge of complication index is at least 20 % she is rated as having overall knowledge of pregnancy- related complications, while below 20 % is rated lack of knowledge. Overall knowledge of obstetric complication is categorical alternating between 1 and 0.

3.3.6 Estimation Techniques

The estimation technique for this study is binomial logit model, which is estimated using the maximum likelihood estimation technique. This technique is most appropriate since the dependent variable which is birth preparedness practices is binary and discreet alternating between zero and one. For each of the independent variables, a choice variable will be chosen, as the reference category or the baseline category against which other variables will be compared. The choice of the reference category is arbitrary as any of the categories will be chosen. According to Green (2003) and Gujarati and Porter (2009), maximum likelihood estimation techniques give parameters that are asymptotically efficient, consistent and normal and the analogue of the regression test can be applied (Wooldridge, 2006).

3.3.7 Software for Data Analysis

The statistical package for the social science (SPSS) as well as STATA software will be used for the data analysis. In this regard, the preliminary data loading and descriptive statistics was done using SPSS while STATA was used for multinomial logit model analysis.

4.1 Empirical Analysis

Table 4.1: Summary statistics of Respondents

Socioeconomic factors	Frequency (N =73)	Percentage(%)
Age		
20-24	20	27.4
25-29	22	30.1
30-34	25	34.2
>35	6	0.08
Education		
No Education	16	21.9
Primary	28	38.4
Secondary	18	24.7
post- secondary	8	0.08
Marital Status		
Married	51	69.9
Single	5	0.07
Widow	10	0.14
Divorce	7	0.07
Occupation		
Working	53	73
Full housewife	20	27
Birth complication during last delivery		
Yes	44	60.3
No	29	38.7
Overall Knowledge of Danger signs		
Yes	29	38.7
No	44	60.3
Birth Preparedness Characteristics		
Yes	28	38
No	45	62

Source: Authors Computation using Respondents' information.

In table 2 a summary statistics for the respondents is presented. Out of a total of 75 questionnaires administered only 73 were valid. Out of the 73 respondents, 27.4% (n= 20) fall within the age bracket 20-24, 30.1 % (n= 22) within 25-29, 34.2 % (n= 25) within 30-34 and 0.08 % (n= 6) of them at least 35 years old. 21.9% (n=16) had no formal education, 38.4% (n= 28) had basic primary education, 24.7% (n= 28) had secondary education and an anemic 0.08 % (n= 8) had post- secondary education. Concerning marital status, 69.9% (n= 51) are married and living with their husbands, 0.07%(n= 5), 0.14%(n=10) and 0.09 % (n= 7) are respectively single, widow and divorced. 73 % (n= 53) of the respondents are working class while 27 % (n=20) are full housewife. 60.3% (n= 44) of the respondents have complication in their previous delivery, while 38.7% had no previous complications. Finally, 38.7% of respondents have overall knowledge of pregnancy-related complications, while 60.3% had no knowledge of complication signs.

Table 3: Cross Tabulation of socio-cultural factors and complications during delivery

Socio-economic factors	Complication during last delivery	No complication during last delivery	Total
Age			
20-24	11(25)	9(31)	20(27.4)
25-29	13 (29.5)	9(31)	22(30.1)
30-34	15 (34)	10(34.5)	25(24.7)
>35	5(11.4)	1(3.5)	6(.11)
Total	44(60.3)	29(39.7)	73(100)
Education			
No Education	7(16)	9(3.1)	16(21.9)
Primary	20(45.5)	8(27.6)	28(38.6)
Secondary	13(29.5)	8(27.6)	21(28.8)
Post –secondary	4(9.09)	4(13.8)	8(10.9)
Total	44(60.3)	29(39.7)	73(100)
Birth preparedness			
Yes	19(43.2)	8(27.6)	27(36.9)
No	25(56.8)	21(72.4)	46(63.0)
Total	44(60.3)	29(39.7)	
() represents percentage value			

Source: Authors computation using Stata (2017)

In table 3 above, we can see that more of the women that were interviewed had complications during their last delivery. For instance, 60.3 percent of women had complications as against 39.7 percent without complications. The age distribution revealed that more women within the age bracket 30-34 suffered complications in their previous pregnancy. Considering categorization of education, 16 percent of women with no formal education had complications, 45.5 percent of women with primary education and 9.0percent of women with post-secondary education respectively had complications in their last delivery. More women without birth preparedness have complications (56.8 percent) as against 43.2 percent for women with birth preparedness.

Table 4: Cross tabulation of socio-cultural factors and Birth preparedness Practices and complication Readiness (BPPCR)

Socio-economic factors	Birth preparedness	Non-preparedness	Birth	Total
Age				
20-24	10(37)	10(23)		20(27.4)
25-29	8(29.6)	14(31.8)		22(30.1)
30-34	9(33.3)	16(36.4)		25(24.7)
>35	0(0)	6(13.6)		6(0.11)
Total	27(38)	44(62)		73(100)
Education				
No Education	6(22)	10(23)		16(21.9)
Primary	13(48)	15(34)		28(38.6)
Secondary	5(11.4)	16(36.4)		21(28.8)
Post –secondary	3(6.8)	5(11.4)		8(10.9)
Total	27(38)	44(62)		71(100)
() represents percentage value				

Source: Authors computation (2017) using Stata.

In table 4 above, we cross tabulate Birth preparedness practices and complication Readiness with the various socio-cultural factors that enter into our model. A larger number of the women interviewed were not ready for delivery (62% vs38%). A greater number of women with primary education (48 percent) were prepared for delivery.

4.2 Socioeconomic Determinants of Birth Preparedness and Complication Readiness

In this section of the study, the result of the multinomial logit analysis carried out with the data gathered from field survey is presented and analyzed. This section examines the socio-economic determinants of birth preparedness and complication readiness. Additionally, the summary statistics of the various respondents are also presented. The essence of these statistics is to help place the research result in context for greater understanding. The binomial logit model was estimated and the results are presented in Table 5 below.

Table5: - Multivariate Logistic Regression Model Predicting Birth Preparedness Practices and Complication Readiness

Variables	ODD Ratio	95%
Confidence interval		
Age		
20-24		1
(0.1856- 5.0631)		
25-29	0.9693	
30-34	1.0345**	
>35	1.1148**	
Educational Status		
No formal Education		1
(1.0292-5.5852)		
Primary	1.2608***	
Secondary	1.2765**	
Post –secondary	1.5919**	
Marital Status		
Married		1
(1.9256-323.78)		
Single	12.935**	
Divorce	0.1076**	
Widow	0.7297	
Occupation		
Full housewife		1
(0.4117-6.4588)		
Working	1.6307**	
Previous complication		
No		1
(0.2956-4.3093)		
Yes	1.1287***	
Overall Knowledge of Danger signs		
No		1
(0.2762-3.9269)		
Yes	1.0414	
Birth Order		
1		1
(0.8722- 2.7569)		
>1	1.5507*	
Husband Education		
No formal education		1
(0.0716-19.5224)		
Primary	1.1609**	
Secondary	1.1821***	

Source: Authors Compilation using Stata (2017)

*, **, and *** are respectively significant @ 1%,5% and '10% .1'' represents a baseline category.

The multinomial logit model presented above examines the impact of selected socio-cultural factors on birth preparedness practices and complication readiness. Instructively, Birth preparedness improves with age. Older women were found to be more likely to prepare for child delivery and complication readiness than younger women. For instance, while women within the age bracket 25- 29 are 0.9693 times less ready for child delivery and complication readiness compared with women within the age bracket 20-24, Women within the age brackets 30-34 and > 35 are respectively 1.0345 and 1.1148 times more ready for delivery than women within the age bracket 20-24. The fact that older women are more apt to preparing for delivery shows that most women acquire knowledge on most of the components of birth preparedness later in life due to pregnancy experience. Again, both husband and wife educational status quo significantly impact on birth preparedness practices. In reference to no formal education, higher educational level has positive and significant impact on birth preparedness practices. This is not surprising given that education is a marker for various resources which enables household to purchase higher level of health care services. In addition to this study, Tilahun and Sinaga (2016) and Kaphle et al (2015) found positive association between education and birth preparedness practices in their studies. In the literature, it is accepted that education is a social resource which influence health seeking behaviour. Hence, there is need for the integration of educational opportunities in school curricula in most rural areas as an alternative strategy for enhancing maternal health and driving down maternal mortality.

Occupation has both positive and significant odd ratios. In reference to full house wife, women who are fully employed are 1.6307 times more likely to prepare for birth and complication. This is because most working class women are simultaneously educated and have the resources to patronize maternal health services. A woman status is therefore a significant predictor in her health seeking behaviour. History of previous complications significantly and positively influences birth preparedness and complication readiness. Women with history of obstetric complications are 1.1287 times more likely to prepare for delivery and complications compared with women that had no previous complications. This is not any source of shock since the experience that goes with complications provides a warning signal that equips women with attitude of complication readiness. Knowledge of danger signs has no significant impact on birth preparedness practices. While this finding contradicts findings from Tilahun and Sinaga (2016) and Kaphle et al (2015), it only shows that knowledge of complication signs is poor among the sampled group.

5.1 Conclusion

In this study, we investigated the impact of selected socio-cultural factors on birth preparedness and complication readiness among 75 women who were randomly selected from Agbara-otor in Ughelli North local government area. Summary statistics show that only 38% of the women were ready for delivery and possible complications. The binomial logit model shows that women's age, educational status, husband's education, occupation, complication history and knowledge of danger signs are significant predictors of birth preparedness and complication readiness.

5.2 Recommendations

Based on this finding, it is pertinent that educational opportunities be expanded for rural women. Health information should be integrated into school curriculum. Efforts should be made to attract more women to utilize antenatal care services and health care workers should seize this opportunity to educate women on the importance of birth preparedness. Finally, men should be integrated into reproductive health. Information on the reasons why women should prepare for delivery should be made known to all men.

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