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Factors affecting the Choice of Place of Delivery among Women of Child Bearing Age in Chukwuemeka Odumegwu Ojukwu University Teaching Hospital, Amaku, Awka

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Abstract: Introduction: About 800 women worldwide die every day during pregnancy and childbirth. Ninety-nine percent of these deaths occur in developing countries, with Sub-Saharan Africa accounting for over 50%. In Nigeria, there is a 1 in 13 chance of a woman dying during pregnancy. Maternal deaths mainly occur during labour, delivery, or within the first 24 hours after birth. In most cases, they are largely due to preventable causes such as haemorrhage, infections, unsafe abortions, eclampsia, and obstructed labour. **Methodology:** A descriptive cross-sectional study was carried out among 124 women. The sample size was determined using the Cochran Formulae for determining minimum sample size. Simple random sampling was used. Data were collected using pre-tested, semi-structured questionnaires and analysed using SPSS (statistical package for social sciences) computer software package version 21. **Results:** The result was presented in text, tables and pie charts. The study found out that 73 (58.87%) of the respondents had previous births, out of which 67 delivered in the hospital (i.e., prevalence of 91.78%) while 6 delivered at home (prevalence of 8.22%). Most 64 (86.49%) of those with previous deliveries attended antenatal clinic during pregnancy. Most 90 (73.17%) had knowledge of pregnancy and birth related complications with bleeding and delayed labour as the most known complications (58.43% and 51.69% respectively). However, all 6 (100%) of the respondents who had delivered at home did so because the baby came too soon and 5 (83.33%) because there was no transport. **Conclusions:** The results of this research shows that there was a high prevalence of hospital delivery and low prevalence of delivery at home 67 (91.78%) and 6 (8.22%) respectively. All 6 (100%) of the respondents who had delivered at home did so because the baby came too soon and 5 (83.33%) because there was no transport. Furthermore, all 6 (100%) of the women who delivered at home had primary school education as their highest level of education.

Keywords: Place of Child Delivery; Maternal Mortality; COOUTH

Introduction

About 800 women worldwide die every day during pregnancy and childbirth[1]. Ninety-nine percent of these deaths occur in developing countries, with Sub-Saharan Africa accounting for over 50%[2]. In Nigeria, there is a 1 in 13 chance of a woman dying during pregnancy[1]. Maternal deaths mainly occur during labour, delivery, or within the first 24 hours after birth. In most cases, they are largely due to preventable causes such as haemorrhage, infections, unsafe abortions, eclampsia, and obstructed labor[3].

It takes a whole family to decide where a pregnant woman should deliver her child. In making that choice, many factors come into play. Availability of skilled health professionals at the point of is the single most important factor in the prevention of maternal deaths[4]. The proportion of skilled health professionals available at the time of delivery is also one of the indicators for monitoring progress towards the Millennium Development Goal of improving maternal health[5]. In many urban areas of developing countries, skilled health professionals at childbirth are provided in the health facility[6]. In sub-Saharan Africa, uptake of skilled delivery services in healthcare facilities is low compared to other parts of the world[1]. In Nigeria, only 35% (25% in rural and 60% in urban areas) of pregnant women use delivery services at healthcare facilities[7].

Evidence from several surveys and studies have shown poor utilization of antenatal care and facility-based delivery by women in Nigeria and other sub-Saharan African regions[8]. Poor maternal and new-born metrics in these regions have been associated with poor use of health facilities[9]. Women are often unable to decide for themselves when, where and from whom to seek care. They often end up being delivered by unskilled persons.

Factors including unavailability of the services, inadequate number of skilled personnel, geographical inaccessibility, and poor quality of care have been identified as a barrier to utilization of health facility for delivey[10]. Low maternal education, unemployment among fathers, first pregnancies at <18 years of age increase the likelihood of home delivery[11].

Distance has also been reported as an important determinant of the place of delivery[12]. One study showed a significant association between caste, education of mothers, education of spouse, occupation of spouse, per capita income, time to reach the nearest health cent er, parity, previous place of delivery, number of antenatal visits, knowledge about place of delivery, planned place of delivery, and place of delivery[13].

Understanding the determinants of delivery in a facility is important for program and policy planning.

Problem Statement

Institutional deliveries attended to by skilled and trained health workers are a measure toward reducing maternal mortality[14]. Low uptake of skilled delivery services can lead to high maternal and infant mortalities, which are some of the problems the MDGs were created to address[15]. Although many maternal deaths and injuries are preventable, many women fail to access and use quality maternal health care services.

A survey of 6,882 Nigerian women established that 26% have received antenatal care, and only 13% delivered at institutions with skilled birth attendants, while 86% gave birth at home under unskilled care[15]. A similar study involving 124 northern Nigerian women reported that over 70% of the respondents confirmed culture as a major obstacle to institutional delivery[15]. Home deliveries contribute immensely to high rate of infant and maternal mortality, (Vesico-Vaginal Fistula, Recto-Vaginal Fistula), sepsis, post-partum haemorrhage and fetal asphyxia[15]. In 2015, maternal mortality ratio (MMR) in Nigeria was 814 per 100,000 live births, the highest rate in Africa and twice the rate in most developing countries[16]. This rate is disheartening and it is sad to note that most of these maternal mortality cases are preventable.

Justification

Nigeria has continued to witness a high maternal mortality ratio, with substantial variation across its region[17]. Nearly all maternal deaths in developing countries occur among the vulnerable and disadvantaged population groups and they can be avoided[18]. It is anticipated that the findings from this study will be used to develop recommendations for interventions aimed at increasing women's utilization of health services for delivery. These together with identification of the existing opportunities for community involvement in reproductive health will help to address many maternal health challenges in Nigeria. This will be done by sharing the findings with local and regional health policy-makers, regional development partners like UNICEF (UNITED NATIONS CHILDREN'S FUND) and USAID (UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT), stakeholders and health management teams responsible for implementing primary healthcare programs in COOUTH and lobbying for the implementation of the study recommendations.

Methodology

Study Area

Chukwuemeka Odumegwu Ojukwu University Teaching Hospital, Amaku, Awka, is in the South Eastern part of Nigeria. It is located at latitude (60 121 3611) N and longitude 70 41 2611) E. It is well known for its medical and academic activities. According to the 2006 Nigeria population of about 189,654 (NPC 2006). The people of Awka are well known for blacksmithing.

The teaching hospital was founded in 2010 and since then, has produced a lot of medical doctors. It also has a lot of clinics where women of child bearing age are specially taken care of like the Antenatal clinic, family planning clinic, immunization, etc.

The teaching hospital has a lot of departments like Paediatrics, Obstetrics and Gynaecology, internal medicine, surgery, radiology and the rest. It provides professional health care services to a lot of people in Awka and its environs.

Study Design

This is a descriptive, cross-sectional study of women of child bearing age in COOUTH. The aim was to investigate the factors that influence choice of place for child delivery among these women.

Study Population

The study population comprised of women of child bearing age in COOUTH.

Inclusion Criteria: Women of child bearing age (15-49) from the study population who had given birth before and who consented to the study.

Exclusion Criteria: Women who are younger than 15 years of age, nulliparous, postmenopausal women and those whom do not consent to the study.

Sample Size Determination

The sample size will be determined using Cochran's Formula.

$N = Z^2 (PQ)/D^2$

Where,

N = minimum sample size

Z = confidence interval at 95% level of significance given at 1.96

P = referenced prevalence which is 82.3% prevalence from previous studies (Got from study conducted by Gebregziabher, N.K., Zeray, A.Y., Abtew, Y.T. et al. Factors determining choice of place of delivery: analytical cross-sectional study of mothers in Akordet town, Eritrea)

P = 82.3/100 = 0.823

Q = 1 – P, where P = 0.823; Q = 0.177

D = maximum sampling error allowed = 0.05

Therefore, $N = Z^2 (PQ)/D^2$

$$N = \frac{1.96^2 \times 0.823 \times 0.17}{0.05}$$

$$N = \frac{0.5224576}{0.0025}$$

N = 208.9 ~ 209

Then, a conversion is made using the formula for calculation of minimum sample size for population less than 10,000

(nf) = The desired sample size when population is less than 10,000

n = The desired sample size when population is greater than 10,000 = 209

N = The estimate of the population size = 250 (estimated number of women who attend antenatal care monthly)

$$Nf = \frac{209}{1 + (209/250)}$$
$$= 114$$

Using a non-respondent rate of 10% = 11.4

The minimum sample size = 114 + 11.4 = **125**

Sampling Technique

The respondents were selected by means of simple random sampling every day from the antenatal clinic, GOPD (General Out-Patient Department), SOPD (Surgical Out-Patient Department), MOPD (Medical Out-Patient Department), ART clinic (Antiretroviral therapy), family planning clinic until the sample size is achieved.

Research Instrument

Data collection in this study was done using a pre-tested, semi-structured questionnaire. The questionnaire was designed in English language. The instrument was designed in such a way that all relevant information relating to the participant's knowledge on the choice of place of delivery were well captured.

The questionnaire comprised of four sections (A-D) to obtain data on

(a) The socio-demographic data of participants

(b) Participant's knowledge of home delivery

(c) Participant's knowledge of hospital delivery

(d) Factors affecting the choice of place of delivery

The semi-structured questionnaires were distributed to the patients within a period of three weeks on the antenatal clinic days, and was done strictly after seeking individual's consent. All completed questionnaire was collected and appropriately stored.

Data Collection

A structured questionnaire was prepared by the researchers. No translator was recruited because the researchers were conversant with the local language. The questionnaires have both closed and open-ended questions. In the multiple-response and open-ended questions, participants were asked to tick all the choices provided which applied to them and add information they wished to add in the section provided for in the questionnaire labelled "Others (Specify)". Literate participants filled the questionnaires for themselves while the illiterate participants were assisted by the researchers in all the sections of the questionnaires. The researchers' clarified possible queries from the respondents and make sure respondents answered all the questions.

Data Analyses

Questionnaires were checked for data errors and omissions at the end of each day. Quantitative data was analyzed using SPSS (Statistical Package of Social Science) version 21. The analysed data was presented in forms of tables and pie charts.

4. Results

Table 4.1: Socio-demographic characteristics of respondents
The sample size for the study was 125, with 124 respondents giving a response rate of 99.2 %. The mean age of respondents was 30.28 (SD = 5.74) years.

Variables	***Frequency***	***Percent (%)***
Age at last birthday		
20-30	72	58.06
31-40	46	37.10
41-50	6	4.84
Mean = 30.28 *SD = 5.74*		
Religion		
Christian	124	99.19
Muslim	1	0.81
Marital status		
Married	114	91.94
Single	5	4.03
Divorced	3	2.42
Widowed	2	1.61
What is the highest level of education		
College and above	76	61.29
Secondary school	32	25.81
None	8	6.45
Primary school	7	5.65
Islamic school	1	0.81
Occupation		
Business	59	47.58
Salaried worker	43	34.68
Housewife	20	16.13
Others	2	1.61

Estimated family income in a month		
Between N80,000-N130,000	40	32.26
Between N30,000-N80,000	34	27.42
Between N130,000-N180,000	24	19.35
N180,000 and above	14	11.29
Below N30,000	12	9.68

Majority of the respondents 72 (58.06%) were within age 20-30 years, with 114(91.94%) of them married. Most 76(61.29%) has completed tertiary education and the modal salary per month 40(32.26) was between 80,000-130,000 naira.

Table 4.2: Prevalence of Home and Hospital Delivery

Variables	***Frequency***	***Percent (%)***
Have you given birth before		
Yes	73	58.87
No	51	41.13
If yes, how many children have you given birth to?		
1-2	56	76.71
3-4	11	15.07
Above 4	6	8.22
Where did you deliver your last child two years ago?		
In hospital	67	91.78
At home	6	8.22
If no, where would you like to give birth		
Home	1	1.96
Hospital	50	98.04
If at home, why did you choose to deliver at home? [a]		
Baby came too soon	6	100.00
No transport	5	83.33
If in the hospital, why did you choose to deliver in the hospital? [a]		
Hospital can handle complications better	58	49.57
Was advised by husband	6	5.13
I got problems during previous childbirth so i had to go to the hospital	9	7.69
The house is close to the hospital	14	11.97
The hospital offers good services	42	35.90
The health workers do their work efficiently	20	17.09
It is safer to deliver in the hospital	64	54.70

Who assisted you when you delivered your last child		
Doctor	26	33.33
Nurse	46	58.97
Traditional Birth Attendant	6	7.69
What is your level of satisfaction with delivery services at health units		
Excellent	15	16.48
Very good	30	32.97
Good	28	30.77
Fair	17	18.68
Poor	1	1.10
With your experience during your last delivery, where would you rather deliver your baby again?		
Hospital	81	100.00

a Multiple response question, hence total percent not excepted to be 100%

73 (58.87%) of the respondents have had previous births, out of which 67 (91.78%) delivered in the hospital while 6 (8.22%) delivered at home. Those who had not given birth were 51 (41.13%) and majority of them 50 (98.04%) wished to deliver in the hospital in the future while 1 (1.96%) of them would rather deliver at home.

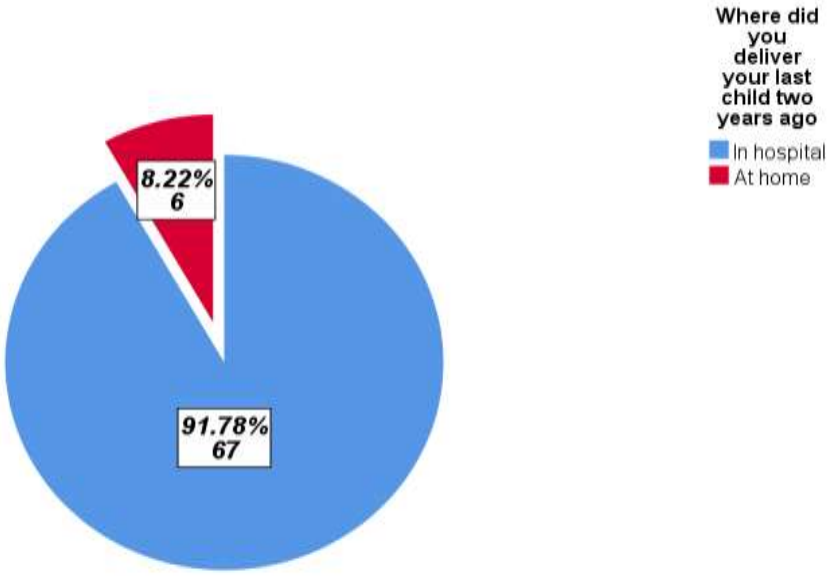

Figure 1: Prevalence of Home and Hospital Delivery among Women of Child Bearing Age in COOUTH

The prevalence of home delivery was 6 (8.22%) while that of hospital delivery was 67 (91.78%) among women of child bearing age in COOUTH.

Table 4.3: Factors affecting the choice of a Place of Delivery

Variables	*Frequency*	*Percent (%)*
How long do you take to reach the nearest health facility		
Less than 30 minutes	63	50.81
1-2hrs travel	45	36.29
2-3hrs travel	11	8.87
More than 3hrs travel	5	4.03
During your last pregnancy did you attend antenatal clinic		
Yes	64	86.49
No	10	13.51
If yes, why?		
I am aware of the importance of antenatal care	41	64.06
To get immunized	21	32.81
To acquire antenatal card to facilitate my admission to the hospital during labour	16	25.00
To know the lie(position) of my baby	14	21.88
I get problems during pregnancy	5	7.81
If no, why?		
No money to pay for services	6	60.00
Got services from traditional birth assistants	4	40.00
Now that you are in the antenatal clinic, where would you prefer to give birth		
Hospital	68	100.00
During your last pregnancy did you get tetanus immunization		
Yes	67	91.78
No	6	8.22
What do you think of delivery services in the government hospital		
Affordable	78	62.90
Expensive	46	37.10
Do you know any pregnancy and birth related complications		
Yes	90	73.17
No	33	26.83
If yes, which ones?		
Bleeding	52	58.43
Delayed labour	46	51.69
Tears	41	46.07
Abnormal baby position	34	38.20

Infection	24	26.97
Did you suffer any complications during your last delivery		
No	44	59.46
Yes	30	40.54
If yes, which ones?		
Tears	19	63.33
Bleeding	9	30.00
Delayed labour	5	16.67
Abnormal baby position	4	13.33
According to your opinion how friendly are the midwives in the hospital		
Friendly	97	79.51
Rude and vulgar	25	20.49
Who decides where you go to deliver a baby		
Myself and husband	83	66.94
Myself	24	19.35
Husband	10	8.06
Mother-in-law	7	5.65
Which gender of midwife would you like to assist you when you are giving birth		
Female	64	51.61
I don't mind any	46	37.10
Male	14	11.29

63 (50.82%) of all respondents were less than 30 minutes away from a health facility, most 64 (86.49%) of those with previous deliveries attended antenatal clinic during pregnancy. 78 (62.90%) of the respondents perceived delivery service in government hospitals as affordable and 97 (79.51%) believe that midwives in hospitals are friendly while 25 (20.49%) believed they are rude and vulgar. Most 90 (73.17%) had knowledge of pregnancy and birth related complications with bleeding and delayed labour as the most known complications (58.43% and 51.69% respectively). Majority 83 (66.94%) make decisions of where to deliver with their husbands.

Table 4.4: Relationship between choice of place of delivery and socio-demographic characteristics of respondents.

	Where did you deliver your last child two years ago		***X^2***	***P-Value***
Variables	***In hospital***	***At home***		
Age at last birthday				
20-30	19 (28.36)	6 (100.00)	12.55	0.002
31-40	42 (62.69)	0 (0.00)		
41-50	6 (8.96)	0 (0.00)		
Religion				
Muslim	1 (1.49)	0 (0.00)	0.76	0.783

Christian	66 (98.51)	5 (100.00)		
Marital status				
Married	62 (92.54)	6 (100.00)	0.481	0.786
Divorced	3 (4.48)	0 (0.00)		
Widowed	2 (2.99)	0 (0.00)		
What is the highest level of education				
None	7 (10.45)	0 (0.00)	73	0.001
Primary school	0 (0.00)	6 (100.00)		
Secondary school	17 (25.37)	0 (0.00)		
College and above	42 (62.69)	0 (0.00)		
Islamic school	1 (1.49)	0 (0.00)		
Occupation				
Housewife	11 (16.42)	1 (16.67)	8.38	0.039
Salaried worker	35 (52.24)	0 (0.00)		
Business	19 (28.36)	5 (83.33)		
Others	2 (2.99)	0 (0.00)		
Estimated family income in a month				
Below N30,000	6 (8.96)	0 (0.00)	9.22	0.056
Between N30,000-N80,000	18 (26.87)	1 (16.67)		
Between N80,000-N130,000	17 (25.37)	5 (83.33)		
Between N130,000-N180,000	17 (25.37)	0 (0.00)		
N180,000 and above	9 (13.43)	0 (0.00)		

P-value is significant at <0.05

An independent Chi square test of association was used to assess the relationship between choice of place of delivery and the different socio-demographic characteristics of respondents. The study showed a statistically significant relationship between age range *(X^2 (2) = 12.55, p-value = 0.002)*, level of education *(X^2 (4) = 73, p-value = 0.001)* and occupation *(X^2 (3) = 8.38, p-value = 0.039)* in determining a woman's place of delivery.

5. Discussion

One of the determining factors of both maternal mortality and infant mortality rates is place of delivery. This study was a cross-sectional descriptive study assessing the prevalence and factors affecting the choice of place of delivery among women of child bearing age in Chukwuemeka Odumegwu Ojukwu University Teaching Hospital Amaku, Awka. There were 124 respondents with mean age of 30.28 (SD = 5.74), 114 (91.94%) of them were married and majority 76 (58.06%) had completed tertiary education.

About 73 (58.87%) of the respondents had previous births, out of which 67 delivered in the hospital (i.e., prevalence of 91.78%) while 6 delivered at home (prevalence of 8.22%). All 6 of those who delivered at home noted that they did so because the baby came earlier than expected and 5 (83.33%) of them added that there was no means of transport to health care facility. Those who had not given birth were 51 (41.13%) and majority of them 50 (98.04%) wish to deliver in the hospital in the future while 1 (1.96%) of them would rather deliver at home. This study is comparable to a study done in Ethiopia among 1426 mothers which showed a high prevalence of hospital deliveries (86.4%)[27]. However, in another qualitative study on prevalence of institutional deliveries among

124 women in northern Nigeria showed a high prevalence of delivering at home[47]. These findings show that there is still room for interventions geared towards encouraging hospital delivery so as to reduce maternal mortality.

About half 63 (50.82%) of all respondents were less than 30 minutes away from a health facility, most 64 (86.49%) of those with previous deliveries attended antenatal clinic during pregnancy. 78 (62.90%) of the respondents perceived delivery service in government hospitals as affordable and 97 (79.51%) believe that midwives in hospitals are friendly while 25 (20.49%) believed they are rude and vulgar. Most 90 (73.17%) had knowledge of pregnancy and birth related complications with bleeding and delayed labor as the most known complications (58.43% and 51.69% respectively). Majority 83 (66.94%) make decisions of where to deliver with their husbands. However, all 6 (100%) of the respondents who had delivered at home did so because the baby came too soon and 5 (83.33%) because there was no transport.

Chi square test of independence was used to assess the relationship between choice of place of delivery and the different socio-demographic characteristics of respondents. The study showed a statistically significant relationship between age range (X^2 (2) = 12.55, p-value = 0.002), level of education (X^2 (4) = 73, p-value = 0.001) and occupation (X^2 (3) = 8.38, p-value = 0.039) in determining a woman's place of delivery.

The relationship between choice of place of delivery and other socio-demographic variables such as religion, marital status and estimated monthly family income were not statistically significant. All 6 (100%) of respondents who delivered at home had primary education as their highest level of education. This can be compared to a study which showed that women with good education were more likely to access and receive healthcare services from a hospital facility than uneducated women during pregnancy[25]. Contrary to our findings, a study carried out in Ethiopia revealed that women prefer home deliveries because TBAs were said to be more kind than health care workers[40]. Another study in Delta state, Nigeria showed that majority (80%) of women chose not to deliver in healthcare facilities because of high cost of health services[37].

6. Conclusion

There was a high prevalence of hospital delivery and low prevalence of delivery at home 67 (91.78%) and 6 (8.22%) respectively. A statistically significant relationship was seen between age range (X^2 (2) = 12.55, p-value = 0.002), level of education (X^2 (4) = 73, p-value = 0.001) and occupation (X^2 (3) = 8.38, p-value = 0.039) and a woman's choice of place of delivery. All 6 (100%) of the respondents who had delivered at home did so because the baby came too soon and 5 (83.33%) because there was no transport. Furthermore, all 6 (100%) of the women who delivered at home had primary school education as their highest level of education.

7. Recommendations

Based on the findings from this study, the following recommendations are made:

1. There is need and room for improvement of female education and women empowerment. This should be community driven and backed by the government.
2. There is need for health talks and seminars by public health physicians to educate women of reproductive age on the importance of antenatal care.
3. Health care facilities should be made more accessible to the people by creating good road and transport systems and establishing primary healthcare clinics in the communities.

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