



Evaluating the Socio-demographic Predictors of Choice of Place of Birth among Women in the Rural Community of Enugu State, Nigeria

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Authors' contributions

This work was carried out in collaboration between all authors. Authors ROI and ECA designed the study. Author ECA performed the statistical analysis. Authors ROI, CCO and ECA wrote the protocol and the first draft of the manuscript. Authors ROI and CCO managed the literature searches. All authors read and approved the final manuscript.

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ABSTRACT

Introduction: The aim of the study was to ascertain the socio-demographic predictors of choice of place of birth among women in the rural community of Enugu State, Nigeria.

Methods: A cross-sectional descriptive study was done. It was a community based study using cluster sampling technique. Women who had delivery at one time or the other within the past five years and gave consent were included in the study. A pre-tested, semi structured, interviewer administered questionnaire was used. Chi-square test was used to determine associations of socio-demographics and number of children with a choice of place of birth and binary logistic regression used to determine predictors of choice of place of birth.

Results: A total of 142 women were studied. Most of the deliveries occurred in Maternity home

(36.6%) and Traditional Birth Attendants (33.8%). About 45.1% of deliveries were by non-skilled attendants. Major reasons proffered for the choice of the place of birth includes good attention, distance to health facility and cost. Factors that were identified as predictors were; women having at least secondary education (AOR =4.3, 95% CI= 1.9-9.2), husband having at least secondary education (AOR = 2.3, 95% CI= 1.4-12.0), being a civil servant (AOR = 2.5, 95% CI= 1.5-3.9) and husband being a civil servants (AOR = 1.7, 95% CI= 0.8-4.9).

Conclusions: A relatively similar proportion of pregnant women were delivered by both skilled and unskilled birth attendants. Good attention, distance to facility and cost were major reason for the choice of place of delivery. Identified predictors of choice of place of delivery were education and occupation of both woman and man. A proper orientation and health education intervention on the benefits of health facility delivery by pregnant mothers as well as economic empowerment is very necessary.

Keywords: Rural women; choice; place of birth; Nigeria.

1. INTRODUCTION

The survival of the mother and newborn has been a great concern to both men and women right from the primitive days. A mother's death has profound consequences for her family. If the mother dies, the risk of death for her children under age five can increase as much as 50 percent [1]. Maternal, child and neonatal health (MCNH) is to reduce to a minimum the risks of pregnancy and childbirth as well as reduce the maternal and childhood mortality rates [2]. The services included among others ante-natal, delivery and post-natal services [3].

Africa has the highest burden of maternal and neonatal mortality in the world with Sub-Saharan contributing approximately 56 percent and Nigeria is a leading contributor [4]. This is not only because the large population but also because of her high maternal mortality ratio of 576 deaths per 100,000 live births [5]. With an estimated 40,000 maternal deaths, Nigeria which has approximately two percent of the world's population contributes almost 10% of the world's maternal deaths [6]. In sub-Saharan Africa, the lifetime risk of maternal death is 1 in 39, compared with 1 in 3800 for the developed countries [6]. In 2010, 287 000 women died worldwide during and following pregnancy and childbirth [7]. Not only that but also 7-10 million women and girls suffer severe or long lasting illnesses caused by complications in pregnancy and childbirth [7]. Of the world's 7.7 million under 5 deaths, 3.1 million occurred in the neonatal period [8]. Each year in Nigeria, more than a quarter of a million neonates die, which translates to approximately 700 neonates every day [9]. The risk of neonatal death from this is 1 neonate for every 25 neonatal borns. Newborn deaths make up 28% in 2011 and 54 % in 2013

of all deaths of under five years [10]. The use of unskilled personnel including Traditional Birth Attendants (TBAs) is likely to be among the reasons for the high maternal and Infant mortality rate in sub Saharan Africa. The maternal and neonatal health indices are worse in rural areas [11] and this is where the majority of Nigerians reside [12].

Many health problems of women and newborn are related to labor and delivery and most could have been prevented with appropriate antenatal, delivery, and early postnatal care [10]. It is in the first few days following delivery that both mothers and newborns are most vulnerable [13]. Recent analyses suggest that up to 70% of these deaths could be prevented if essential interventions in existing health packages reached all Nigerian women and newborns [11]. The leading causes of death are intra-partum related or birth asphyxia (28%), complications of preterm birth (30%) and severe infections (22%) [13]. National estimate shows that only 66% of pregnant women attend Ante Natal Care (ANC) at least once. About 64% of births occur outside the health facility and 22% of these deliveries are assisted by TBAs [14]. Births without skilled personnel and without access to life-saving drugs are the commonest practice for millions of mothers in the poorest countries [7,15].

The World Health Organization (WHO) has estimated that about 700,000 midwives are needed worldwide to ensure universal coverage of maternity care and that currently there is a shortfall of 50% [7]. These shortfalls are felt more in the rural areas as it has been recorded that for every region of the world, the presence of skilled birth attendant is lower in the rural than the urban areas [7]. In Nigeria, women in the urban areas are more than twice as likely to deliver in a health

facility as their rural counterparts and women in urban areas are most likely to be assisted by a skilled birth attendant in 40% of cases while women in rural areas have a 25% chance of being assisted by a traditional birth attendant [11].

Clearly, focusing and relying on health facility based efforts alone for MCNH services will only benefit a limited number of women. The role of TBAs in the provision of care for pregnant women particularly in the rural area in Nigeria is significant and cannot be ignored. TBAs over the years have filled the huge unmet need of access to care for pregnant women who cannot or will not access formal health facilities. TBAs can help to break socio-cultural barriers to intervention on reproductive health programmes [16]. Lack of knowledge about symptoms which require medical care and attention can lead to delays in recognition and treatment of severe complications contributing to maternal death. A study on TBAs found that only 58% expressed adequate knowledge on symptoms and signs of pregnancy complications while 71.2% admitted attending to pregnant women with complications [17].

This shows that their ability to refer to emergencies is questionable. They do not know the actual or appropriate places to refer cases too. They are not supervised making them to be lord of their own and they do not know their limits so they make every attempt whether they will succeed or not. Due to the lack of education among some TBAs, the way many attended the delivery is risky for women and their babies, leading to poor health outcomes and even death. These TBAs should be trained on safe delivery methods and referral of the patients at risk immediately to health facility. There should be integration and collaboration with the formal health sector to supervise and monitor their activities [18].

Most obstetric complications occur around the time of delivery and cannot be predicted [1,2]. Therefore the choice of persons and place of delivery may contribute to controlling or aggravating the predicaments of mothers and children. The most frequently stated barriers for giving birth in a health facility were not having enough time to go (75%), and lack of transport (29%) [19]. Others include; absence of properly staffed health facility within an international recommended distance, cost of seeking such assistance from a private hospital, distance to

effective health facilities, poor transport system, lack of birth preparedness by expectant mothers.

The choice of place of birth just like that for general health services is a complex behavioral phenomenon. Previous studies of preventive and curative services have often found that the use of health services is related to the organization of the health delivery system and the availability, quality and cost of services, as well as social structure, health beliefs and personal characteristics of the users. While the number of healthcare facilities is increasing in the country, poor services, lack of demand, and a lack of accessibility characterize the health sector. For safe delivery, the place and person involved is very crucial. This informed this study which aims to ascertain what informs the choice of place of delivery of expectant mothers.

2. METHODS

2.1 Setting

The study was carried out in a selected rural community of Aninri Local Government Area (LGA) in Enugu State, Nigeria. The population of The LGA was 136,221 according to 2006 census. It is composed of five major villages namely: Ndeaboh, Mpu, Okpanku, Oduma and Nenwe. Economically, Aninri people are predominantly farmers and petty traders. The inhabitants are mostly of Igbo ethnic nationality and are predominantly Christians. A total of sixteen Primary Health facilities and two cottage hospitals exist in the area. There are eight private hospitals/health facilities in the entire Local Government. Of these eight, only three are headed and managed by a medical doctor, one is owned and ran by a registered nurse/midwife; two are run by Community Health Extension Workers, one is run by auxiliary nurses who claim they are under a doctor that seldom visits the facility and one is a faith –based facility owned by the Anglican Church.

2.2 Study Design and Participants

The descriptive cross sectional study using interviewer administered questionnaire was employed. It was a community based study using cluster sampling technique. The participants were women who had delivery at one time or the other within the past five years and gave consent to participate in the study. A total of 142 women were studied. They were visited individually in their houses.

2.3 Study Instruments

A pre-tested, semi structured, interviewer administered questionnaire was used. This was used to obtain information on variables such as: socio-demographics, number of children, knowledge of places to seek care and qualifications of persons in those places, monthly income of the family, previous birth experiences.

2.4 Data Analysis

Data were analyzed using Statistical Packages for Social Sciences (SPSS) version 20. Frequency and contingency tables were used to show the distribution of data. Chi-square was used in the bivariate analysis to determine associations of socio-demographics and number of children with a choice of birthplace. The level of significance was at < 0.05 . Multivariate analysis using binary logistic regression was used to determine predictors of choice of place of birth. Variables with $p < 0.2$ in bivariate analysis were entered into the logistic regression model to determine the predictors of choice of place of birth.

2.5 Ethical Approval

Ethical clearance was obtained from the ethical committee of Enugu State Ministry of Health, Enugu. Permission was also obtained from the traditional ruler of the community. Furthermore, verbal informed consent was obtained from each mother before questions were administered to her. There was no form of coercion; participation in the study was completely voluntary. Confidentiality was assured and maintained throughout the study.

3. RESULTS

Table 1 shows the socio-demographics of respondents. Majority of the respondents (68.3%) were ≤ 35 years of age with the mean age of 30.7 ± 8.6 . Majority of the women had a secondary education (37.3%), are farmers (44.4%) and had ≤ 3 children (60.6%). Equally, most of their husband had secondary education (44.4%) and are farmers (39.4%).

Table 2 shows the place of birth and reasons for the choice of place. Most of the deliveries occurred in Maternity home (36.6%) and Traditional Birth Attendants (33.8%). While 54.9% delivered with a skilled attendant, 45.1% was with non-skilled attendant. Major reasons

proffered for the choice of the place of birth includes good attention, distance to facility, cost (cheap).

Table 1. Socio-demographics of respondents

Variables	n=142	
	Frequency	Percentage
Age (years)		
35 years and below	97	68.3
> 35 years	45	31.7
Mean \pm SD		30.72 \pm 8.63
Educational level		
No formal education	19	13.4
Primary	49	34.5
Secondary	53	37.3
Tertiary	21	14.8
Occupation		
Farming	65	45.8
Trading	36	25.4
Civil/public servant	26	18.3
Others	15	10.6
Educational level of husband		
No formal education	22	15.5
Primary	34	23.9
Secondary	63	44.4
Tertiary	23	16.2
Occupation husband		
Farming	56	39.4
Trading	33	23.2
Civil/public servant	24	16.9
Others	29	20.4
Number of children		
3 and below	86	60.6
> 3	56	39.4

*Others- single, divorced, separated, widow, widower

Table 3 shows associations between socio-demographics of respondents and choice of place of birth there is no significant relationship between age ($\chi^2 = 0.010$, $p = 0.919$) and the number of children ($\chi^2 = 0.183$, $p = 0.669$) with choice of place of birth. Level of education of women, the occupation of the women, education of husband and occupation of their husbands showed significant association with place of birth ($p < 0.001$). Respondents who had at least secondary education were about 4 times (AOR = 4.3, 95% CI= 1.9-9.2) and those whose

Table 2. Place of delivery and reasons for choice of place of birth

Variable	n=142	
	Frequency	Percentage
Place of delivery of your last baby		
Maternity home*	52	36.6
Hospital/Health centre*	26	18.3
In TBA#	48	33.8
At home#	16	11.3
Cadre of worker that took delivery of your last baby		
Skilled attendant	78	54.9
Non skilled attendant	64	45.1
	Yes	No
	Freq (%)	Freq (%)
Reasons for choice of place of birth		
Cheap	23 (16.2)	119(83.8)
Good Attention	58(40.8)	84(59.2)
Presence of Professionals	15(10.6)	127(89.4)
Near to me(Distance)	29(20.4)	113(79.6)
Others go there(Bandwagon)	4(2.8)	138(97.2)
No reason	15(10.6)	127(89.4)

* Skilled attendant; # non-skilled attendant

Table 3. Associations between socio-demographics of respondents and choice of place of birth

Variable	Bivariate analysis		χ^2 (p-value)	Multivariate analysis AOR (95% CI)
	n=142			
	Non skilled n(%)	Skilled n(%)		
Age (years)				
35 years and below	44(45.4)	53(54.6)	0.01	
> 35 years	20(44.4)	25(55.6)	(0.919)	NA
Educational level				
Primary and below	44(61.2)	24(38.8)	20.32	
Secondary and above	20(35.8)	54(64.2)	(0.000)	4.30(1.91-9.24)
Occupation				
Farming	41(63.1)	24(36.9)		
Trading	10(27.8)	26(72.2)	38.10	1.34(0.58-3.13)
Civil/public servant	1(3.8)	25(96.2)	(0.000)	2.45 (1.53–3.92)
Others	12(80.0)	3(20.0)		1.05(0.55-1.97)
Education of husband				
Primary and below	35(61.8)	21(38.2)	11.35	
Secondary and above	29(42.9)	57(57.1)	(0.000)	2.26(1.37-12.01)
Husband Occupation				
Farming	33(58.9)	23(41.1)		
Trading	12(36.4)	21(63.6)	16.83	1.34(0.58-3.13)
Civil/public servant S	3(12.5)	21(87.5)	(0.001)	1.68 (0.80–4.87)
Others	16(55.2)	13(44.8)		1.05(0.55-1.97)
Number of children				
3 and below	40(46.5)	46(53.5)	0.18	
> 3	24(42.9)	32(57.1)	(0.669)	NA

husband had at least secondary education were about 2 times (AOR = 2.3, 95% CI= 1.4-12.0) more likely to be attended to by skilled attendant than those that had primary education and

below. Respondents who were civil servants were about 3 times (AOR = 2.5, 95% CI= 1.5-3.9) and those whose husband were civil servants were about 2 times (AOR = 1.7, 95%

CI= 0.8-4.9) more likely to be attended to by skilled attendant than those that were farmers.

4. DISCUSSION

In the rural areas of Nigeria, just like most developing countries, a number of women are still unable to differentiate between who is a skilled caregiver and who is not among the various categories of health workers. In some cases, some who have an idea of this difference still prefer to deliver at home or with the Traditional Birth Attendants [20].

The findings from this study show that 45.1% of the pregnant women had their last babies at home or in TBA. This is not good considering the far reaching effect of the implications. In Ilesha, south-west Nigeria, a study that was conducted discovered that delivery took place at home among 23(8.8%) and 92(35.4%) in the churches which put together is about 44.2% of unskilled delivery [21] - a finding similar to the one in this study. Another study documented that only 38% of study participants delivered the index child at health facility [22].

Some of the reasons given by those who had their deliveries with the traditional birth attendants were that they were cheap and can allow payments by installment. Others said that they got better attention and were not compelled to long hospital procedures before admissions. A few believed that the privilege of allowing them to carry their placenta home in TBAs helps them to link up with their ancestors and then receive the blessing of having more successful births in the future. Over 10% of the women had no reasons for the choice of place of delivery. This suggests that they are undecided and lack an opinion of their own. The implication of this position is that they will drift with any prevailing wave at any time they want to deliver. This undermines the need for birth preparedness which has proved to be effective in reducing both maternal and child mortality [1]. It equally impacts negatively on the objectives of Maternal, child and neonatal health services and consequently on National health indices. There is a need for health education interventions that will improve the attitudes and a subjective value placed on health facility delivery by pregnant mothers. Health education has been documented that it lowers its opportunity cost and hence increased demand for skilled care delivery [23]. A similar study on Traditional Birth Attendants and Maternal Mortality identified

physical distance and financial limitations as two major constraints that prevent community members from accessing, using trained attendants and institutional deliveries [18]. The same study reported that trained delivery attendants or an institutional delivery were only aimed at women who experienced obstetric complications [18].

Among the women aged 35 years and below patronization of skilled birth attendants was at 54.6% while those above 35 years of age had 55.6% deliveries with skilled birth attendants. With the insignificant disparity observed, it suggests that the older women in the village have a comparatively similar awareness on the need for skilled care during pregnancy and delivery as their younger colleagues. Older women have a higher risk of birth complication and thus the need to have their deliveries attended by skilled birth attendants [4,6].

This study shows that some socio-economic factors like level of education of either the man or woman, occupation of husband and that of the woman (family income) influence the choice of place of delivery. Women with at least secondary education were about 4 times more likely to be attended to by skilled attendant than those that had primary education and below. This can also be compared to another study in Nigeria which stated that women without formal education are 6 times more likely to patronize non-skilled birth attendants [24]. This implies that educational exposure can guide women in making better choices regarding their safety in the childbearing processes. The educational status of husbands was also found to be a predictor. This is good and means that once any of the couples is well empowered educationally, there are higher chances of patronizing a skilled attendant with its benefits.

Respondents who were civil servants were about three times and those whose husbands were civil servants were about two times more likely to be attended to by skilled attendant than those that were farmers. This may be partly due to higher chances of higher educational attainment. Likewise, since the predominant occupation in the study area was subsistence farming, those who are civil servants have the advantage of earning in two ways as they also do the farming to complement their salaries/incomes. This increases their earning showing that family income plays a role in making a choice of which place to seek services.

Others similar studies identified these factors as predictors; maternal education, unemployment among fathers, first pregnancies at less than 18 years of age, [25] Mother's education and husband's occupation, [24] maternal and husband's level education, residence, wealth level and parity, [26] education; living close to the health facility, [27] maternal age, education, household wealth, parity, residence, [28] Husband's educational status, wealth index, average distance from nearest health facility, wanted pregnancy, agreement to follow post-natal care, problem faced during delivery, birth order, preference of health professional for ante-natal care and maternity care, [22] women education and household economic status [29].

5. CONCLUSION

A relatively similar proportion of pregnant women were delivered by both skilled and unskilled birth attendants. Identified predictors of choice of place of delivery were education and occupation of both woman and man. There is a need for health education interventions that will improve the attitudes and the subjective value placed on health facility delivery by pregnant mothers as well as economic empowerment.

6. LIMITATIONS

The inclusion of a qualitative research method could have complemented the results of this study as the use of the only questionnaire for such sensitive topic may be limited in exploring the underlying complexities. Equally the number of persons studied may not be representative enough for wider generalization.

CONSENT

As per international standard or university standard, patient's written consent has been collected and preserved by the authors.

ETHICAL APPROVAL

As per international standard or university standard, written approval of Ethics committee has been collected and preserved by the authors.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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