

ORIGINAL RESEARCH ARTICLE

Factors Associated with Choice of Non-Facility Delivery among Women Attending Antenatal Care in Bali Local Government Area of Taraba State, North-Eastern Nigeria

DOI: 10.29063/ajrh2020/v24i1.15

Sonnen Atinge^{1*}, Babatunde E Ogunnowo² and Mobolanle Balogun²

Taraba State Health Services Management Board Jalingo, Nigeria¹; Department of Community Health and Primary Care, College of Medicine, University of Lagos²

***For Correspondence:** Email: sonnen.atinge@gmail.com; Phone: 08165987705

Abstract

One intervention that is widely believed to reduce the high maternal mortality in resource-poor countries including Nigeria is delivery in health facilities under skilled birth attendance. However, the practice of non-facility delivery is still common in these countries. Curiously, women who attend ANC in health facilities are also among those who choose to deliver in a non-facility. This was a descriptive cross-sectional study conducted in Bali LGA of Taraba State, Nigeria. Multi-stage sampling technique was used to select 320 women of childbearing age who attended ANC and had had a recent delivery. The objective was to determine the factors associated with choice of non-facility delivery among women attending ANC in the area. Data analysis was done using EPI info computer software version 7.2.1.0. Most of the women (73.1%) delivered in a non-facility. Ethnicity and place of ANC were the predictors of non-facility delivery. The most common reason for non-facility delivery was that labour came without complications (58.8%). Prevalence of non-facility delivery in the area was disturbingly high. Strategies to discourage the practice should include providing adequate skilled personnel and equipment at all levels of healthcare. There should also be active engagement of the traditional and religious institutions in the area. (*Afr J Reprod Health* 2020; 24[1]: 143-151).

Keywords: Antenatal care, Non-facility delivery, Taraba State

Résumé

Une intervention qui est largement considérée comme réduisant la mortalité maternelle élevée dans les pays pauvres en ressources, y compris le Nigéria, est l'accouchement dans les établissements de santé sous assistance du personnel médical qualifiés. Cependant, la pratique de l'accouchement hors établissement est encore courante dans ces pays. Curieusement, les femmes qui fréquentent les CSP dans les établissements de santé font également partie de celles qui choisissent d'accoucher hors d'un établissement de santé. Il s'agit d'une étude transversale descriptive menée dans la région l'AL de Bali, dans l'État de Taraba, au Nigéria. Une technique d'échantillonnage en plusieurs étapes a été utilisée pour sélectionner 320 femmes en âge de procréer qui ont fréquenté un CSP et qui ont accouché récemment. L'objectif était de déterminer les facteurs associés au choix de l'accouchement hors établissement chez les femmes qui fréquentent un CSP dans la région. L'analyse des données a été effectuée à l'aide du logiciel informatique EPI info version 7.2.1.0. La plupart des femmes (73,1%) ont accouché dans un établissement non hospitalier. L'origine ethnique et le lieu de la CSP étaient les indices de l'accouchement hors établissement. La raison la plus courante de l'accouchement hors d'un établissement était que le travail venait sans complications (58,8%). La prévalence de l'accouchement hors d'un établissement dans la région était inquiétante. Les stratégies visant à décourager la pratique devraient comprendre la mise à disposition d'un personnel qualifié et d'équipements adéquats à tous les niveaux des soins de santé. Il devrait également y avoir un engagement actif des institutions traditionnelles et religieuses dans la région. (*Afr J Reprod Health* 2020; 24[1]: 143-151).

Mots-clés: Soins prénatals, Accouchement hors d'un établissement, État de Taraba

Introduction

It is no longer news that maternal mortality has remained unacceptably high in the developing world compared to the industrialized countries despite all efforts to bring down the trend. The World Health Organization (WHO) estimates that about 830 women die from pregnancy-or childbirth-related complications around the world every day¹. Ninety-nine per cent (99%) of these deaths occur in developing countries- more than half in sub-Saharan Africa and one third in South Asia^{1,2}. At country level, Nigeria and India were estimated to account for over one third of all maternal deaths worldwide in 2015, with an approximate 58 000 maternal deaths (19%) and 45000 maternal deaths (15%) respectively².

Fortunately, most of these deaths are preventable³. Adequate antenatal care (ANC) and skilled assistance at delivery are important strategies that significantly reduce maternal morbidity and mortality³. The presence of these in developed countries has made maternal deaths a rare event. Therefore, increasing the proportion of women who are cared for in health facilities by skilled attendants during pregnancy, childbirth and puerperium in low resource countries can also prevent most of the deaths and reduce morbidity as well^{2,4}. This has however been a major challenge. Global experiences show that antenatal care use is higher than delivery by a professional in the large majorities of countries in the developing world^{5,6}. In Nigeria for instance, according to the NDHS 2013 report, sixty-one per cent (61%) of women age 15-49 who had a live birth in the five years preceding the survey received antenatal care from a skilled provider (i.e., a doctor, nurse or midwife) but only thirty-six per cent (36%) delivered in a health facility⁷. This shows a wide gap between ANC attendance and facility-based delivery. Still disturbing is the fact that this was just a minimal one percent (1%) difference from the figure of the 2008 survey- the latter being thirty-five per cent (35%)⁸. As generally poor as the indices are, there also exist wide disparities across and within the different geopolitical zones of the country⁷. While 90.6% of women in the South East received ANC from a skilled provider, only 49.3% of their counterparts in the North East did. Similarly,

78.1% of women in the South East delivered in a facility as compared to only 19.5% from the North East⁷. Even within regions there still exist differences among the component states. For example, while Adamawa State has an 85.1% of women attended to by skilled personnel during ANC, Taraba State in the same zone has 31.8%. It is same for the percentage of deliveries in a health facility-33.4% for Adamawa and 23.4% for Taraba⁷.

In terms of mortality generally, there was a backward progress made in Nigeria's maternal mortality index from 545/100,000 live births in 2008⁸ to 576/100,000 live births in 2013⁷, even as health facility delivery nearly stagnated within the same period⁷. Little wonder, the country did not meet the MDG goal 5 by 2015. However, the world went ahead and set another goal of reducing maternal mortality to 70/100,000 live births by 2030⁵.

There is therefore an urgent need to redouble efforts aimed at encouraging women to deliver in health facilities so as to reduce the proportion of maternal deaths from home deliveries. But this can only be possible if there is reliable epidemiological data on factors influencing women's preference for non-facility deliveries in this part of the country. It is only when this is done, that policy makers, political leaders, health care providers, among others can strive to institute policies and programmes as well as services addressing women's needs and preferences to decrease the number of non-facility deliveries. This study therefore set out to determine the proportion of pregnant women who book for ANC in a health facility but deliver in a non-facility, and the factors that are associated with such choice among women attending ANC in Bali Local Government area (LGA) of Taraba State, North-Eastern Nigeria.

Methods

Study design, site and population

This was a community- based descriptive cross-sectional study that was conducted in Bali LGA of Taraba State, North-Eastern Nigeria in June 2017. Bali is the largest LGA in Taraba State in terms of

landmass area⁹. It has a landmass of 9,319 km² and a population of 211,024 (107,979 males and 103,045 females) according to the 2006 national census¹⁰. The LGA consists of multi-ethnic nationalities, predominantly the Jibu, Itchen, Jukun, Tiv, Hausa/Fulani. The major occupations of the people are farming, fishing and petty trading. The Local Government has a General Hospital, 11 Primary Health Centres and several dispensaries.

The study population consisted of women within the reproductive age group (15-49 years) who had at least one antenatal care visit in a health facility during the index pregnancy and had experienced at least one childbirth within the last one year.

Sample size and method

The sample size for the study was determined using the Cochran's sample size formula for single population proportion when $N > 10,000$ ¹¹. We considered a p of 23.4%, representing the proportion of hospital delivery in Taraba State from NDHS 2013⁷, standard normal deviation of 1.96 corresponding to 95% confidence interval and a 5% margin of error. We then calculated a sample size of 272 which was increased by 10% to account for improperly filled questionnaires.

Multi-stage sampling technique was used to select study participants. The first stage involved simple random sampling, by balloting, of three (3) wards from the eleven (11) wards in Bali LGA. The selected wards were Badakoshi, Kaigama and Maihula. In the second stage, 34 villages out of a total of 366 were selected using stratified sampling proportionate allocation method. Consequently, 10, 16 and 8 villages were selected from Badakoshi, Kaigama and Maihula which have 107, 169 and 90 villages respectively. In the third stage, households in the sampled villages were selected by using systematic sampling technique. Sampling interval was determined by dividing the average number of households in each village, using the household record with the Disease Surveillance Focal Person in the area, by the number of respondents to be interviewed in that village. Every n^{th} house was recruited for the study after balloting between the

first n^{th} houses to get the first respondent. For households with more than one eligible woman, only one person was selected using lottery method. In the event of a household with no eligible woman the immediate next household was interviewed.

An interviewer-administered semi-structured questionnaire developed by the researchers from previous literature was used for the study^{3,4}. Questions were asked on socio-demographic, socio-economic and ANC characteristics of the respondents as well as place of delivery and reasons for choosing the delivery place in case of non-facility deliveries.

The questionnaire was pre-tested in Bali town among 32 eligible women in order to correct any ambiguity. Ethical approval was obtained from the Health Research Ethics Committee (HREC) of the Lagos University Teaching Hospital. Permission was also granted by the Director of Primary Health Care, Bali Local Government Area.

In each sampled village, a courtesy call was made first to the village head intimating him about the research with a view to get his approval and cooperation. At the household level, informed verbal consent was obtained from the household heads and the study participants after telling them of the objective of the study.

Data analysis

Data entry and analysis was done using EPI info computer software version 7.2.1.0 (CDC, Atlanta Georgia). The results were presented in frequency tables and percentages. The Chi squared statistic and Fisher's exact test were used to evaluate association between categorical variables. Binary logistic regression was used for variables which were statistically significant on bivariate analysis to investigate predictors of non-facility delivery using SPSS (Version 20) and 95% confidence intervals were computed. A p -value of less than 0.05 was accepted as being statistically significant.

Results

A total of 320 women participated in the study. The mean age of the respondents was 25.4 [SD ± 6.7]. Majority of women 213 (66.6%) were

Table 1: Socio-demographic characteristics of the pregnant women in Bali, Taraba State, Nigeria

Background characteristics	Frequency (N=320)	Per cent (%)
Mother's age at most recent birth (years)		
< 20	61	19.1
20-34	213	66.6
35-49	46	14.4
Marital status		
Not married	4	1.3
Married monogamous	197	61.6
Married polygamous	119	37.2
Tribe		
Hausa/Fulani	105	32.8
Jibawa	11	3.4
Jukun	5	1.6
Kam	15	4.7
Mumuye	38	11.9
Tiv	11	3.4
Wurukun	27	8.4
Others	108	33.8
Religion		
Christianity	121	37.8
Islam	199	62.2
Birth Order (Parity)		
1	81	25.3
2 – 3	120	37.5
4 – 5	61	19.1
6+	58	18.1

young adults, 20-34 years while adolescent/teenage mothers were 61 (19.1%). Of the major ethnic groups in the area, the highest single group 105 (32.8%) were Hausa/Fulani. However, other minor ethnicities, which are more than 10 made up the largest group, 108 (33.8%) of the total population. This group included tribes in the southern part of the country like Igbo, Ogoja, Yoruba who are resident in the area. Regarding religious affiliation, 199 (62.2%) were Muslims while 121 (37.8%) were of the Christian faith. With respect to parity, most women, 89 (27.8%) were of the higher order birth (5th & above) and followed by the first order group, 81 (25.3%) (Table 1).

The study showed that the proportion of women who had ANC in health centre and health post and delivered in a non-facility was 166 (77.6%) and 34 (81.0%) respectively. This was more than the proportion of women who had ANC

in General Hospital and delivered in a health facility 34 (53.1%). Place of antenatal care was associated with choice of non-facility delivery ($\chi^2 = 16.49$, p value <0.001). The proportion of women who had 1 or 2-3 ANC visits who delivered in non-facility, 15 (75.0%) and 52 (86.7%) was significantly higher than the proportion who had 4 or more visits, 167 (69.6%). The number of ANC visits a woman attends was associated with choice of non-facility delivery ($\chi^2 = 7.1$, p value 0.028) (Table 2).

On reasons cited for choosing to deliver in a non-facility, 144 (58.8%) of mothers reported that they gave birth in a non-facility because the labour was without difficulty or complications. Eighteen per cent of women reported that they gave birth in a non-facility because the child was born suddenly and there was no time to reach the health facility, while 5 per cent reported cost as the main hindering factor. Fourteen per cent gave other reasons like personal preference, having access to a skilled assistant at home, family decision and cultural practice (Table 3).

Results of multivariate analysis indicated that ethnicity was a significant predictor of non-facility delivery. Women of other ethnic groups were 2.5 times less likely to deliver in a non-facility than women in the reference category (Hausa/Fulani) ($\beta = 0.9$, p value <0.05). Religion was not a significant determinant of non-facility delivery. However, women of the Islamic faith were more likely to deliver in a non-facility than their Christian counterparts. Place of ANC was a significant predictor in the model. Women who had ANC in the PHC were 2 times more likely to deliver in a non-facility than those who had it in the General Hospital. ($\beta = -0.84$, p value <0.05) (Table 4).

Discussion

The study found that majority of the respondents, 73 per cent delivered in a non-facility and only 27 per cent in a health facility. The wide gap between antenatal care attendance and facility-based delivery agrees with what is well documented even by global bodies like WHO and the United Nations^{5,6}. This finding is almost the same with a study in Northern Ghana which also recorded non-facility delivery as high as 71 per cent¹².

Table 2: Relationship between antenatal care characteristics of pregnant women in Bali, Taraba State, Nigeria and place of delivery

Background characteristics	Non-facility (N=234) No. (%)	Facility (N=86) No. (%)	χ^2 (P-value)
Place of antenatal care			
General Hospital	34 (53.1)	30 (46.9)	16.49 (<0.001)
PHC	166 (77.6)	48 (22.4)	
Health post	34(81.0)	8 (19.1)	
Timing of antenatal visit (trimester)			
1st	104 (72.2)	40 (27.8)	0.53 (0.766)
2nd	110 (74.8)	37 (25.2)	
3rd	20 (69.0)	9 (31.0)	
Number of ANC visits			
1	15 (75.0)	5 (25.0)	7.17 (0.028)
2 – 3	52 (86.7)	8 (13.3)	
4+	167 (69.6)	73 (30.4)	

Table 3: Reasons for delivering in a non-facility

Reasons(multiple responses allowed)	Frequency (N=234)	Percent (%)
Labour was without difficulty(complications)	144	58.8
Precipitate labour	44	18.0
High cost	13	5.3
Husband/family wish	4	1.6
Far distance	4	1.6
Staff incompetence	1	0.4
Bad attitude of staff	1	0.4
Other reasons	35	14.3
No reason	4	1.6

Across sub-Saharan Africa to South East Asia and other less developed countries, the picture is the same-higher ANC attendance than deliveries in a health facility¹³⁻¹⁶. The finding of 27 per cent facility deliveries in this study, though slightly higher, also concurs with that of the NDHS 2013 for Taraba State (23 per cent)⁷. This marginal difference can be explained from the fact that the NDHS figure is an average for the entire state while the study only selected one local government area. It can as well just be an improvement in the statistics due to the concerted efforts in the campaign against non-facility delivery between 2013 when the NDHS was carried out to 2017 when this study was done.

The study found no significant association between religion and choice of non-facility delivery. However, Muslim women were more

likely to deliver in a non-facility setting than those who profess the Christian faith. In contrast to this study, significant association has been reported between religion and place of delivery in Bangladesh and other studies in Northern Nigeria¹⁷⁻²⁰. In Bangladesh, Muslim women were found to be two times more likely to have non-facility delivery compared with non-Muslim mothers¹⁹. The quest for privacy and resentment of been seen by a male health worker which is commoner among Muslim women in this part of the country could explain this result. This is likely so because some studies in Jos and other North Central states of Nigeria also found no association^{4,21,22}.

The finding of association between ethnicity and non-facility delivery is not new to this study. Others in India, Bangladesh and even Nigeria have also reported similar finding^{17,18,23,24}. For this study, other ethnic groups in the area which include those from Southern Nigeria were found to have lower non-facility deliveries than the Hausa-Fulani. This agrees with other studies in Northern Nigeria which also found same result^{17,24}. It is well known that culture and tradition intricately influence peoples' behaviour, attitudes and practices. And since these vary from one group to another, it may not be strange if a practice is more prevalent among a particular ethnic group than others. Inconsistent with findings from several studies, both in Nigeria and elsewhere, the level of maternal education was found to have no

Table 4: Summary of logistic regression model for place of delivery

	B	S.E	Exp (B)	95% C.I	
				Lower	Upper
Ethnicity					
Hausa/Fulani (reference category)	--	--	1.0		
Jibu	.350	1.116	.705	.079	6.285
Jukun	.272	1.252	.762	.066	8.863
Kam	.066	.863	.936	.173	5.075
Mumuye	.354	.572	1.425	.464	4.376
Tiv	.370	.886	1.448	.255	8.220
Wurukun	.651	.597	1.917	.595	6.175
Others	.934	.423	2.544*	1.110	5.831
Religion					
Christianity (reference category)	--	--	1.0		
Islam	-.249	.383	.779	.368	1.650
Maternal Education					
No education (reference category)	--	--	1.0		
Primary	.624	.385	1.867	.877	3.975
Secondary	.619	.428	1.858	.803	4.301
Post- secondary	1.634	1.269	5.125	.426	61.651
Husband's education					
No education (reference category)	--	--	1.0		
Primary	-.683	.461	.505	.205	1.246
Secondary	.091	.409	1.096	.491	2.444
Post-secondary	.079	.503	1.082	.404	2.898
Place of ANC					
General hospital (reference category)	--	--	1.0		
PHC	-.840	.369	.432*	.209	.890
Health post	-.845	.530	.429	.152	1.213
No of ANC visits					
1 (reference category)	--	--	1.0		
2-3	-1.005	0.708	.366	.091	1.467
≥4	0.51	.587	1.052	.333	3.326
Constant	-6.147	10048.2	.002		
Model x2 (p)	58.975				
Classification accuracy	77.2%				

*-p < 0.05

significant association with non-facility delivery in this study^{3,13,21,25-27}. It is generally believed that women who are educated are better able to break away from traditional practices that negate the use of modern healthcare services and so utilize same to enhance health. Also, educated women may be more empowered which will enhance their decision-making power and improve their ability for making independent decisions on their health leading to greater modern healthcare utilization.

Most studies around the globe have reported an inverse relationship between non-facility delivery and antenatal care factors such as

early initiation, number of visits, seeing a physician during ANC, perceived quality of care and being advised to deliver in a facility during ANC^{13-16,28-30}. This study agrees with some of these findings but disagrees with others in establishing no association. The place of ANC and service provider was significantly associated with non-facility delivery. Women who received care in the hands of doctors, nurses and midwives, which in this case are available in the General Hospital and PHCs were least likely to deliver in a non-facility. Whereas, those who had care in the health posts which are manned by only Community Health

Extension Workers were the most likely to deliver in a non-facility. This could reflect the quality of services offered in these two different places and providers. On the hand, the finding of no association between number of visits and timing of first visit with non-facility delivery contrasts with those who found that women who book in the first trimester of pregnancy and attend more than 4 ANC visits were least likely to deliver in a non-facility⁴. Rather, this study agrees with one from Northern Ghana which reported that women who book in the third trimester were less likely to deliver in a non-facility¹². The possible explanation is that either these women have some pregnancy-related complications forcing them to seek attention or they are very familiar with the health facility and clinic procedures and just want to go to the hospital toward the end of their pregnancy.

This study found a unique reason given by majority of women who had non-facility delivery. They offered that their choice was because labour came without difficulty or complications. This finding is novel and unique to this study in the sense that it was scarcely mentioned in all the literatures reviewed on this topic. Even in the NDHS 2013, the commonest reason given by the participants was that child was born suddenly and there was no time to reach the facility⁷. Other studies in same northern Nigeria did not capture this reason as done in the study. Elsewhere around the world, including other parts of Nigeria, commonly stated reasons are cost of hospital bills, far distance to health facility, time wasting, bad attitude of staff, lack of transportation, among others^{4,7,21,31-33}.

As simple as this reason is, it seems deeply rooted in a complex cultural and religious milieu. These women understand and regard the hospital as a place where people go only when they have problems, and so since childbirth is a natural process, a normal pregnancy needs not necessarily go to a health facility. However, women with detected problems during antenatal care that may complicate delivery are expected to return to the health facility for their deliveries. Those who develop complications in the process of labour and delivery do not also hesitate to go to

a health facility. Some believe that the things done in the ANC clinic such as the routine drugs are meant only to ensure that one's labour is going to be uncomplicated. So, when a woman has attended ANC and is not told that the pregnancy has any problem which is likely to complicate delivery, such a woman has no use returning to the health facility for delivery. In other words, ANC is seen by some as a clearing house where one must go only to confirm whether her pregnancy is normal or not.

Conclusion

Non-facility delivery was found to be unacceptably high in Bali Local Government Area. Ethnicity and place of antenatal care were the predictors of non-facility delivery in the area. The reason given by majority of the women who chose a non-facility delivery was that the labour came without complications. It is evident that programmes aimed at discouraging non-facility delivery among women in this place should be done with the active involvement and participation of their religious and traditional leaders- the custodians of culture and traditions. It is also necessary to explore ways of improving the quality of antenatal care through increasing the number of skilled personnel at all levels of the healthcare system. Of equal importance is also for the healthcare workers to make discussion of birth plan routine part of antenatal care services by educating the women on the need and benefits of facility delivery even for presumed normal pregnancies, labour and delivery so as to increase the number returning for facility delivery.

Acknowledgements

The authors would like to acknowledge the women that participated in this study.

Funding Source

None.

Conflict of Interest

None.

Contribution of Authors

Atinge S conceived the idea, designed the study protocol together with Ogunnowo BE.

Atinge S collected the data and analyzed it with Ogunnowo BE and Balogun MR. Atinge S and Balogun MR prepared the manuscript. All authors mentioned approved the manuscript.

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