ORIGINAL ARTICLE

Constraints to utilization of maternal health services at the primary health care level in Nnewi, Nigeria

Chinomnso C **NNEBUE**[1]
Uzo E **EBENEBE**[2]
Achunam S **NWABUEZE**[2]
Alphonsus C **OBI-OKARO**[2]
Chika F **UBAJAKA**[2]
Amobi L **ILIKA**[2]

[1]*Department of HIV Care and Dept of Community Medicine, Nnamdi Azikiwe University Teaching Hospital, Nnewi Anambra State, NIGERIA*
[2]*Dept of Community Medicine, Nnamdi Azikiwe University / Nnamdi Azikiwe University Teaching Hospital, Nnewi Anambra State, NIGERIA*

Author for Correspondence

Dr Chinomnso C **NNEBUE**
Department of HIV Care & Department of Community Medicine, Nnamdi Azikiwe University Teaching Hospital PMB 5025, Nnewi Anambra State, NIGERIA

Email: nnebnons@yahoo.com
Phone: +234-803-475-6621

Received: Feb. 16th, 2014
Accepted: Sept. 20th, 2014

ABSTRACT

Background: Ensuring universal access to quality maternal health services brings to the fore the need to determine and tackle factors that deter women from utilizing these services.

Objective: To determine the constraints to utilization of maternal health services in the primary health centres in Nnewi, Nigeria.

Methodology: This was a cross-sectional survey. Using the multi-stage sampling technique, 280 women utilizing maternal health services from four randomly selected public primary health centres in Nnewi, Nigeria, were chosen for the study. Data collection employed a mix of quantitative and qualitative methods. Quantitative data was analyzed using the Statistical Package for Social Sciences (SPSS) version 16 (2007).

Results: The mean age of the 280 respondents studied was 29.2±5.9 years; 168 (60%), 70 (25%) and 26 (9.3%) of the respondents accessed ante-natal care, post-natal care and delivery services, respectively. Eighty-four (30%) mothers were not vaccinated against tetanus for such reasons as non-availability of vaccines (28.6%), fear of side effects (25%), and lack of belief in vaccination efficacy (20.3%). Difficulties experienced before accessing the facilities were: bad state of roads (60.7%), lack of transportation (34.6%) and high transportation cost (25%). Whereas, difficulties experienced at the facilities were: lack of equipment and supplies (27.5%), lack of transportation (13.2%) and unavailability of drugs (11.1%).

Conclusion: This study found that apart from ante-natal care, other maternal health services were underutilized. Funding, good access roads, affordable transportation and appropriately integrated services would boost utilization**.**

Keywords*: Accessibility, drugs, education, equipment, funds, transportation*

DISCLOSURES: NIL

INTRODUCTION

Maternal health services aim at reducing maternal mortality and morbidity by ensuring that pregnant women remain healthy throughout pregnancy, deliver safely to healthy babies and recover fully from the physiological changes that occur during pregnancy.[1] All pregnancies need quality maternal health services in order to ensure a good outcome for both the mothers and newborns.[2] Despite this universally acknowledged fact, millions of people in low and middle income countries, Nigeria inclusive, lack access to basic quality health care services.[3] This picture is further worsened by the fact that about 99% of the causes of maternal mortality in developing countries are preventable.[2,4]

Access barriers would be considered better indicators to utilization of health services than population per facility.[5,6,7] Recognized barriers include lack of roads, time spent in accessing a facility, absence of convenient and affordable public transportation, conditions that prejudice clients' access; high cost of health services, spouses or parents' decisions and lack of skilled personnel. It has been reported that the economic and social dimensions of the distribution of power between spouses, equally, influence access and use of maternal health services, so also religion, spirituality, and traditional beliefs have also contributed to women's utilization of maternal health services. [5,8,9,10,11,12,13,14, 15,16,17]

In other studies, respondents cited some problem areas that needed improvement such as difficulty in accessing the clinic (54%), service charges (47%), clinic hours (24%) and information on maternal health services (22%).[18,19] According to the 2008 Nigerian National Demographic Health Survey (NDHS) in which women were asked about factors that would deter their seeking medical care, three-quarters of women reported that they had at least one serious problem in accessing health care.[20] The leading barrier to health care for Nigerian women was the lack of money for obtaining treatment which was affirmed by 56% of them, while 41% were concerned about the availability of drugs in the health facility. Other factors included transportation, distance to the health facility, and not having a provider to attend to them.[20]

One of the targets of the Millennium Development Goals (MDG) is to ensure access to maternal health care services for all (MDG No. 5). This, if achieved, could help avert 35% of maternal deaths.[21] It is against this backdrop that this study was designed to determine constraints to the utilization of maternal health services at the primary health care (PHC) level in Nnewi North Local Government Area (LGA) of Anambra State, Nigeria. This can help define the starting points for improvement in the utilization of maternal health care services at this level of health care delivery.

METHODOLOGY

Study Area

Nnewi North LGA (NNLGA) is one of the 21 LGAs in Anambra State, South-East Nigeria. The town has an approximate total population of 391,222 people with a sex ratio of 1.02 male/female.[22] The inhabitants are Ibos, predominantly Christians, and mainly traders, with a few white collar and blue collar workers, farmers and artisans. Nnewi is the second largest commercial town in Anambra State, after Onitsha.[22] It is a town famed for industrialization, with raw materials mainly imported from outside the country, thus, attracting dealers on these products from different parts of the country and beyond. Both the federal and state institutions have their offices in Nnewi.

The NNLGA has a number of health facilities, including a federal teaching hospital, Nnamdi Azikiwe University Teaching Hospital (NAUTH) Nnewi. It has no public secondary health care facility. However, there are about 30 private hospitals and clinics, with 24 public PHCs out of which twelve provide at least three maternal health services. There is a staff strength of one medical doctor, 12 community health officers (CHOs), 12 nurses/midwives, 80 community health extension workers (CHEWs) and 48 health attendants in the 24 health facilities as at the time of this study.

Study Design
The design was a cross-sectional descriptive study.

Study Population
This comprised women utilizing maternal health services in public PHCs in NNLGA during the period of the study. Women accessing any of the maternal health services in the health facilities that provide, at least, any three of the maternal health services viz. family planning, antenatal care, safe delivery services, postnatal care services and basic essential obstetric care, were enrolled into the study.

Data Collection Technique
Data collection in this study employed a mix of quantitative (Client Exit Interviews) and qualitative (Focus Group Discussion) methods.

Sample Size Determination
For the client exit interviews, the sample size was determined using the formula for the calculation of sample size in populations >10,000:

$n = z^2pq/d^{2\,23}$

n = the estimated minimum sample size required for the study;
z = standard normal deviate at 95% confidence interval = 1.96;
p = percentage of births attended by skilled attendants;
q = the complementary probability of p (1−p) that is, percentage of births not attended by skilled attendants
d = precision level 5% = 0.05.

In a study in South-East Nigeria, 81.8% of births were reported to have been conducted by skilled attendants.[20] Therefore, *p = 0.82*, while n was 227 clients. Anticipating a response rate of 90%, an adjustment of the sample size estimate to cover for non-response rate was made by dividing the sample size calculated with a factor, *f* i.e. *n/f*, where *f* is the estimated response rate.[20]

Therefore, the calculated sample size = 227/0.90 = 252. However, 280 questionnaires were distributed, completely filled and were thus, analysed.

Sampling Technique
A multi-stage sampling technique was used. The NNLGA is made up of four administrative zones (Otolo, Uruagu, Umudim and Nnewichi), and 12 PHCs provide at least three of the services needed to meet the inclusion criteria.

Firstly, a simple random sampling technique by balloting system was used to select one health facility from each of these four administrative zones of the LGA.

Secondly, the sample size determined was proportionately allotted to the four health centres based on the average number of clients that presented for antenatal care at this facility within the period of the study.

Thirdly, based on the average for the 3months preceding the month of the study, the total monthly ante-natal attendance for the four facilities was 300. The total number of clients that were interviewed for each health facility was calculated thus:

$$\frac{\text{The average monthly antenatal attendance for the health facility} \times 280}{\text{Total monthly antenatal attendance for the four health facilities}}$$

Then, eligible and consenting respondents, utilizing maternal health services were recruited consecutively by systematic sampling technique at the point of exit from the health facilities until the required number allotted to each selected facility was obtained.

Focus Group Discussion
Eight clients were selected on a typical clinic day in each of the four health facilities studied. Qualitative data added depth to the findings of the quantitative survey.

Data Management and Analysis
Quantitative data was analysed using the Statistical Package for Social Sciences (SPSS) version 16 (2007). Frequency distributions of all relevant variables were presented in tables. Means and standard deviations were

determined. While qualitative data was reported verbatim, analyzed thematically presented.

Ethical Consideration

Approval to conduct the study was obtained from the Nnamdi Azikiwe University Teaching Hospital Ethical Committee (NAUTHEC), while permission was obtained from the State Ministry of Health, and the NNLG Health Department.

Limitations of the Study

The client exit interview questionnaires were interviewer-administered and this might have influenced the responses from the participants. However, in the training of research assistants, it was ensured that efforts were made by these research assistants to assure respondents of confidentiality of their responses. Qualitative data were also used to cross-check the quantitative results obtained from the questionnaires.

RESULTS

The socio-demographic characteristics of respondents were summarized in Table 1.

Table 1. Socio-demographic characteristics of the respondents studied

Socio-demographic Characteristics	N=280	%
Age Group (in years)		
<19	12	4.3
20-29	135	48.2
30-39	116	41.5
40-49	15	5.3
Nil response	2	0.7
Total	**280**	**100**
Marital Status		
Married	231	82.5
Never Married	39	13.9
Separated	10	3.6
Total	**280**	**100**
Highest Educational Level		
Nil Formal	7	2.5
Primary	57	20.4
Secondary	169	60.4
Tertiary	47	16.8
Total	**280**	**100**

A total of 280 mothers were interviewed and they included; 92 women attending Umuenem Otolo PHC, 79 women at Okpuno Nnewichi PHC, 56 women at Edoji Uruagu PHC and 52 women at Eme Court Umudim PHC. The mean age of the respondents was 29.2±5.9 years. Majority of the respondents, 231 (82.5%) were married, and most of them, 216 (77.2%), attained at least secondary level of education; only 7 (2.5%) did not have any formal education.

Table 2 summarizes the access of respondents to maternal health services. One hundred and sixty-eight (60%) of respondents accessed ante-natal care services, 70 (25%) of them accessed post-natal care services, 26 (9.3%) of them utilised delivery services and the remainder (5.7%), other services. Most of them (79.3%) reported that the opening hours for the services were convenient. About half of them (48.6%) lived within 5km radius from the health facility, while it took 52% of them not more than 30minutes to reach the health facility of their choice.

Table 2. Access by respondents to maternal health care services in the facilities

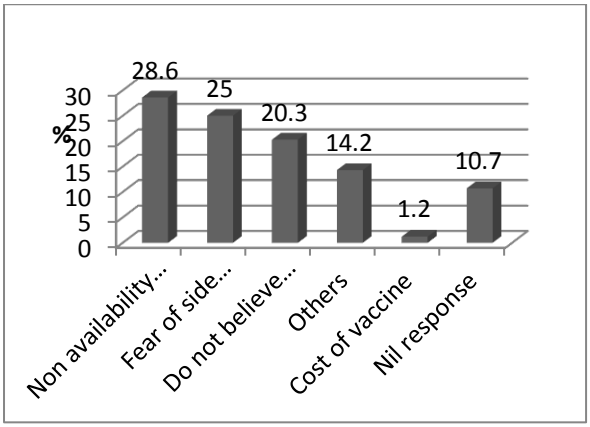
Services	No.	%
		N = 280
Ante-natal Care	168	60
Delivery	26	9.3
Post natal care	70	25
Family planning	16	5.7
Convenience of opening hours		
Yes	222	79.3
No	12	4.3
DNK	46	16.4
Distance from home to facility (km)		
≤5	136	48.6
>5	46	16.4
DNK	98	35
Time taken to reach a health facility from home (in mins)		
≤30	145	51.8
>30	55	19.6
DNK	79	28.2
Nil response	1	0.4

KEY: DNK- Do Not Know

A total of 84 (30%) mothers were not immunized against tetanus for reasons that included: non-availability of vaccines (28.6%), fear of side effects (25%), that they do not

believe in vaccination (20.3%), the cost of the vaccine (14.2%), superstition and religious beliefs against vaccination (14.2%), see Figure 1.

Figure 1. Reasons for non- vaccination with tetanus toxoid



KEY: Others include: Superstition and religious belief

Table 3 summarizes the services that were paid for. Two hundred and thirty-nine (85.4%) paid for various services received during the visit. Services paid for included the following: registration (64.4%), medications (49.4%) and laboratory services (44.8%). However, 41 mothers paid for tetanus toxoid vaccination.

Table 3. Payment by respondents for maternal health care services

Services	n	N=239 %
Registration	154	64.4
Drugs	118	49.4
Laboratory services	107	44.8
Tetanus toxoid	41	17.2
Admission	10	4.2
Delivery	13	4.6

**Multiple responses [Respondents could tick more than one option]*

Table 4 highlights the difficulties in accessing maternal health services. It shows that there were more difficulties in accessing maternal health services before arrival at the facility than at the facility. Difficulties experienced prior to getting to the facilities included: bad state of roads (60.7%), lack of means of transportation (34.6%) and high transportation cost (25%). The difficulties experienced at the facilities were lack of essential equipment and supplies (27.5%) and lack of transportation to support referral (13.2%).

Table 4. Difficulties experienced by respondents in accessing maternal health care services

Difficulty	n	N=280 %
Before Arrival at the Facility		
Bad state of roads	170	60.7
Lack of means of transport	97	34.6
High transportation cost	70	25.0
Lack of authorization by spouse and family	42	15.0
Distance to health facility	26	9.3
At the Facility		
Lack of essential equipment/supplies	77	27.5
Lack of means of transport for referral	37	13.2
Unavailability of drugs	31	11.1
Embarrassed by medical examination by the opposite sex	15	5.4
Long waiting time	14	5.0
Lack of culturally appropriate practices	14	5.0
Hostile attitude of HCW	9	3.2
High cost of medical care	4	1.4

**Multiple responses [Respondents could tick more than one option]*

Results of Focus Group Discussions

The discussants have been utilizing the health facility for a varying period of time for as recent as 1month, while others for as long as 5 years. The most common services accessed from these facilities, (the same facilities used for the quantitative study) include: ante-natal care, delivery, postpartum care, child welfare and family planning services.

General State of the Facilities

Most of the discussants said that the facilities were clean, had good appearance, but do not have enough seats.

Status of Personnel, Supplies and Equipment

Most of the discussants said that personnel, equipment and supplies were fairly adequate. They mentioned equipment such as weighing scales, thermometers, and added that, the services of one doctor and one laboratory technologist, at least, are needed per health facility.

Attitude of Health Care Providers Toward the Clients

The common opinion among discussants on the attitude of health care providers towards the clients was good, receptive and friendly.

Health Seeking Behaviour

The reasons adduced by the discussants for the poor utilization of maternal health services include: perceived high cost of services; religious/cultural factors; inadequate equipment in the facilities and lack of skilled personnel for maternal health care delivery.

Ways for Improvement

The discussants offered suggestions on the ways of improving the quality of maternal health services, viz. outreaches and public awareness campaigns; provision of ambulance vehicle for referral; provision of pipe borne water or borehole to ensure adequate water supply; provision of generators as alternate source of power supply; employment of skilled health personnel.

DISCUSSION

The study was conducted in the four public PHCs selected from the twelve that offered at least three maternal health services during the period of the study, out of the 24 public PHCs in the study area. This is a pointer to the level of quality of maternal health care services in the study area. The study revealed that the maternal health services commonly accessed by the clients in these facilities included: ante-natal care (ANC), child welfare, delivery and post-natal care (PNC) services. This could probably be as a result of the quality of services available in these index hospitals.

The findings of this study showed that the most common maternal health services sought for was ante-natal care. Less than one-tenth of them utilized delivery services and 5.7% other services like family planning.

The focus group discussion (FGD) also showed that majority of the clients came to these facilities mainly for ANC. This agreed with the findings of the 2008 NDHS, which showed that in Anambra State, South East Nigeria, 97.7% of women received ante-natal care services, 87.8% delivered in health facilities but only 26.1% deliveries occurred in public health facilities.[20] This was also in conformity with the findings of a study by Mandy in Kenya, where most facilities offered ANC but only a third of them provided delivery care.[24] When asked of the maternal health care services provided in the health facilities, the respondents at the FGD sessions mentioned ANC, child welfare, delivery, family planning, counseling and PNC services. These findings gave an impression that a significant proportion of the clients came for ANC but had deliveries elsewhere.[25]

The findings of this study showed that about one-third of clients did not receive tetanus toxoid vaccination and the main reason given for this was the non-availability of vaccines. The performance of health systems is dependent on the availability of resources and health infrastructure.[26] The availability of services is a pre-requisite to its accessibility and utilization. In a study in Pakistan, utilization patterns were skewed to the tertiary facility for normal and complicated deliveries because of availability of the needed services at this level.[27]

The dimensions to accessing and utilizing health services ranged from geographic, economic to socio-cultural. The service delivery point should not be far from clients while transportation to the facilities should be with ease.[28] It was observed that less than half of the clients studied, lived within 5km radius from the facilities, while more than half took 30 minutes or less, to reach the health facility of their choice. These percentages fell below

the findings of the 1999 NDHS where 73% of the population lived within 5km radius from health facility.[29] Nonetheless, it was similar to the findings of a study in Ghana on quality and cost in health care choice in developing countries, living standards measure, where about half of the respondents did not take more than 30 minutes to reach the health facilities of their choice.[30]

Also, a study in rural Tanzania and Malawi showed that lack of means of transport was a major reason for most home deliveries, thus, denying women access to quality maternal health services.[31] Other factors reported as difficulties in utilizing maternal health services included: lack of authorization by spouse and family members, lack of essential equipment, supplies, drugs, embarrassment from medical examination by health personnel of the opposite sex and lack of culturally appropriate practices. Also, reported was religious and cultural beliefs which agrees with the findings of other studies.[12,13,14,15]

RECOMMENDATIONS

The following recommendations were made based on the findings from the study:

1. Government should rehabilitate and ensure regular maintenance of the access roads to these facilities.
2. Government and relevant stakeholders should support the facilities with resources and infrastructure.
3. The health facilities in Nnewi North Local Government Area should ensure the delivery to the clients of available, affordable, comprehensive and integrated maternal health services.
4. The staff of the health facilities in Nnewi North Local Government Area should engage clients with health education on erroneous beliefs.

CONCLUSIONS

Despite a fairly adequate personnel and equipment supplies, there was still a lack of comprehensive and integrated maternal health services, and underutilization of the available services. Inadequate water supply, accommodation, power supply and refuse disposal systems were also major constraints. The bad state of roads, high cost of transportation, payment before various services were received and a host of some socio-cultural factors such as lack of authorization by spouse and family, embarrassment from medical examination by opposite sex and religious and cultural beliefs, were reported as impeding access to services.

ACKNOWLEDGEMENTS

This work was part of a dissertation submitted to the National Postgraduate Medical College of Nigeria in part fulfillment of the requirements for the award of the Fellowship of the College in Public Health.

REFERENCES

1. Obionu CN. Primary health care for developing countries. Second edition. Institute for Development Studies UNEC. Enugu. 2007; p 217- 240.
2. World Health Organization. Improve the quality of maternal health services. Geneva, Switzerland, WHO. Division of Reproductive Health (Technical Support), 1998; 4 (World Health Day– 7April: Safe motherhood / WHO 98.8) accessed 14th August 2008.
3. Donna V, Barbara K. Improving maternal health. *e Journal USA: Economic perspectives* 2005; 1- 7.
4. Moronkola OA, Omonu JB, Iyayi DA, Tiamiyu MA. Perceived determinants of the utilization of maternal health-care services by rural women in Kogi State, Nigeria. *Tropical Doctor* 2007; 37: 94-96.
5. Physicians for human rights. Deadly delays. Maternal mortality in Peru. A rights – based approach to safe motherhood. Physicians for human rights .org.
6. World Health Organization/ United Nations Children's Fund /United Nations Population Fund. Guidelines for monitoring the availability and use of obstetric services 1997; para 25; World Health Organization Reproductive Health Indication; Guidelines for their generations intervention and analysis for global monitoring. 2000; 28. Available at http://www. Who-int/reproductive health/ publications/rh-indicators/guildlines.pdf, accessed July, 9, 2007.

7. United Nations Committee on Elimination of Discrimination Against Women," General Recommendation 24"1999, Art 12 (1) para21.
8. Beegle K, Frankenberg E, Thomas D. Bargaining power within couple and use of prenatal and delivery care in Indonesia. *Stud Fan Plann* 2001; 32:130–146.
9. Uguru NP, Uzochukwu BSC, Onwujekwe OE, Obikeze EN, Onoka C. Inequality in utilization of maternal health services in South-East Nigeria, Implications for reducing maternal mortality. *Journal of Community Medicine and PHC* 2003; 15:10-16.
10. Lindsey A, Lubbock LA, Stephenson RB. Utilization of maternal health care services in the department of Matagalpa, Nicaragua. *Rev Panam Salud Publica/Pan Am J Public Health*. 2008; 24:75–84.
11. Tunde S. Factors enabling and constraining the use of maternal and newborn health services in northern Nigeria: Formative research findings and implications. A paper presented at the 135th Annual Meeting and Exposition on (November 3-7, 2007) of American Public Health Association (APHA).
12. Osubor KM, Fatusi AO, Chiwuzie JC. Maternal health-seeking behaviour and associated factors in a rural Nigerian community. *Matern Child Health J* 2006; 10:159-169.
13. Nwakoby BAN. Use of obstetric services in rural Nigeria. *J R Soc Health* 1994; 114:132-136.
14. Chapman RR. Endangering safe motherhood in Mozambique: prenatal care as pregnancy risk. *Soc Sci Med* 2003; 57: 355–374.
15. Thaddeus S, Maine D. Too far to walk: maternal mortality in context. *Soc Sci Med* 1994; 38: 1091–1110.
16. United Nations Children's Fund, National Planning Commission, Federal Ministry of Health, Abuja: Providing essential obstetric care for Nigerian women, 1998.
17. Ministerio de Salud / Cooperative for Assistance and Relief Everywhere / Averting Maternal Death and Disability Program (Columbia University). Impact of the FEMME project in reducing maternal mortality and its significance for health policy in Peru. 2006. Available at http:llwww. care.org.pe / websites/femme/index.html.
18. Bangladesh Development Gateway. The National Policy on Maternal Health. December, 2000.
19. Timothy W, Jessie S, Yvette C. Measuring family planning services quality through client exit interviews. International family planning perspective, 2000; 26: 2.
20. National Population Commission (Nigeria), ICF Macro Nigeria, Nigeria National Demographic and Health Survey 2008. Calverton, Maryland: National Population Commission and ICF/Macro. 2008; 125-141.
21. Millennium Development Goal 5: Improve maternal health strategy. Third Progress Report. Press release, July, 2008.
22. Nnewi facts and figures.http//www.nacuk.org /factfile. htm. The profile of Nnewi North Local Government Area. 2008: 1-2.
23. Araoye MO. Research methodology with statistics for health and social sciences. NATHADEX Publications, saw-mill, Ilorin 2nd ed 2008: 115- 122.
24. Mandy R, Way A, Makumi M, Kizito P. Assessing the quality and availability of maternal health services: Results from Kenya. A paper presented at the 129th Annual Meeting of American Public Health Association (APHA), 2001.
25. National Population Commission (Nigeria), ORC Macro Nigeria, Nigeria National Demographic and Health Survey 2003. Calverton, Maryland: National Population Commission and ORC / Macro. 2004.115-123.
26. Hodges A. (ed): Children's and women's right in Nigeria, wake-up call: Situation assessment and analysis, Nigeria, Abuja. National Planning Commission and UNICEF; 2001; 2 – 10.
27. Fikree FF, Mir AM, Haq IU. She may reach a facility but will still die! An analysis of quality of public sector maternal health services, District Multan, Pakistan. *Journal of the Pakistan Medical Association* 2006; 56:156-163.
28. Levin A, Caldwell B, Khuda B. Effect of price and access on contraceptive use. *Soc Sci Medical* 1999; 49: 1-15.
29. National Population Commission (Nigeria), Nigeria Demographic and Health Survey 1999. Calverton, Maryland: National Population Commission and ORC/Macro, 2000.
30. Victor L, Jean G. Quality and cost in health care choice in developing countries, living standards measurement study (LSMS) working paper. Jul 1, 1994; No. 105, Washington D, the World Bank.
31. World Health Organization. World Health Day Newsletter. Safe motherhood; improving access to maternal health. e-*Newsletter; www. internationalbudget.org/ pdf/ newsletter 24.pdf, assessed on 14th August, 2008.*