

Maternal Health Service Satisfaction-Comparative Study of Mothers in Urban and Rural areas of Enugu State, South East Nigeria

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Abstract

Introduction: Assessing mothers' satisfaction with maternal health service is very important. This is because it is critical and should be considered when making maternal health services more responsive to people's needs.

Objective: To assess and compare the maternal health service satisfaction of mothers in urban and rural areas of Enugu State, South East Nigeria.

Methodology: This study was a community-based comparative, cross sectional study that assessed and compared the maternal health service satisfaction of mothers in urban and rural areas of Enugu State, South East Nigeria. The analysis was done according to the specific objectives using generated tables, ratios, frequency, percentage calculations and cross tabulations. Chi-square test of significance for test of comparison of qualitative categorical data, Student t-test for group comparison of means, Bi-variant, and Multivariate Analysis using logistic regression were used in the analysis of data at 95% confidence interval. P-value was set at 0.05.

Results: 5.5% of mothers in the urban areas were satisfied with maternal health service they received when compared to mothers (79.2%) in the rural areas. Mothers in urban areas who had one pregnancy were 7.051 times less likely to be satisfied with the maternal health services when compared with other women. Mothers who obtained maternal health service from health post, Primary health care centres (PHC), district hospitals, tertiary facility, private hospital, and had less education were more satisfied with the services when compared with those who received care from Traditional Birth Attendants (TBAs) and spiritual homes. According to the mothers in both locations, the Factors that affect their utilization of maternal health include poor quality of maternal health service, high cost of obtaining the limited services, inadequate maternal information, inadequate staff, and bad attitude of health care workers attending to them.

Conclusion/Recommendation: There is need to maintain this observed finding. However, there should be an improvement on health talk and health education given to mothers, to enable them have a better perception of their maternal expectations. This will enable the mothers to properly grade their satisfaction with maternal health services. Government should further train the health care workers including TBAs, and closely monitor the activities of spiritual homes.

Keywords: maternal health service; urban, rural; satisfaction; quality of health care; enugu state

Introduction

Maternal health is the health of women during their reproductive age, pregnancy, including child birth, and post-partum period [1]. Maternal health service (MHS) comprises: premarital/pre-conceptual/adolescent care (PMC), antenatal care (ANC), natal care (NC), and postnatal care (PNC) [1]. The aim of maternal health service is to reduce maternal morbidity and mortality to the barest minimum [1]. However, about 830 women die daily from pregnancy and child birth related events [2]. Majority (99%) of these maternal deaths occur in developing countries, including Nigeria and are preventable deaths [2]. Globally, the target of

Sustainable Development Goal (SDG) agenda is to reduce the global maternal mortality to 70 per 100,000 live births through various strategies that will improve the quality and delivery of maternal health service [3]. In Nigeria, the National Primary Health Care Development Agency (NPHCDA) launched the Midwives Service Scheme (MSS) in 2009 funded through the debt relief fund to ensure quality care at primary health clinics in underserved Local Government Areas [4].

Despite these efforts, there is still no clear significant improvement in maternal mortality ratio in Nigeria in the recent past [5,6]. Client's satisfaction with quality of care is referred to as the degree to which the clients'

desired expectations, goals, and/or preferences are met by the health care provider [7]. It is the patient's positive evaluation of received health care [7]. Satisfaction with maternal health service means meeting mothers' expectations, which is a function of their experiences during a given service encounter [8]. Ensuring satisfaction of women is a means of secondary prevention of maternal mortality since satisfied women are likely to adhere to health providers' recommendations [9], most often come back for the services again [9,10] and also recommend services to other women [9,10]. However, dissatisfied mothers usually discourage other mothers and other intending users from utilizing maternal health services [8,11,12,13].

Methodology

Study Area: This study was conducted in Enugu State, South East geo-political zone of Nigeria. The people of Enugu State are predominantly Igbo speaking tribe and mainly Christians. Over 70% of the inhabitants live in the rural areas of the state. The estimated population of Enugu State in 2017 based on the 2006 Nigeria's census, and a growth rate of 2.33% is 4,411,100 [14]. Females constitute 50.1% of the population of Enugu State, while women of reproductive age (15 to 49 years) constitute 26% of her population. The annual fertility rate of Enugu State is approximately 6 children per woman.

Study Design: This study was a community-based comparative, cross sectional study.

Study Population: The study population was mothers in the study area who have parity one or more.

Sample Size Determination: The sample size was calculated manually using the formula for group comparative study [15]. A total of 1,681 mothers participated in the study (841 from urban areas, and 840 from rural areas) based on the average proportion of 70.2% who were truly satisfied with maternal health service in urban areas and rural areas [16] and on a type 1 error (α) of 0.05. The participants were selected by multistage sampling technique. In the first stage, all the four urban Local Government Areas of Enugu State were included in the study, while four Local Government Areas were selected from the thirteen rural Local Government Areas using simple random sampling technique by balloting method. In the second stage, two wards were selected from each of the eight urban and rural Local Government Areas using simple random sampling technique by balloting

method. In the third stage, two communities were selected from each of the selected wards in the urban and rural areas. In the fourth stage, one village/settlement/neighbourhood from each selected community was selected by simple random sampling technique by balloting method. All houses in the selected villages/settlements were included in this study. Also, all households in these houses were included in this study. All mothers that met the study inclusion criteria living in these households were eligible for this study. The consenting mothers that met the inclusion criteria were selected until the sample sizes for the urban and rural areas were met. The sample size for this study was evenly distributed among the selected communities in urban and rural areas.

Study Instruments

A pretested, semi-structured, and interviewer administered questionnaire was used. The questionnaire was adapted from sections of Nigeria's National Primary Health Care Development Agency Primary Health Care Facility Quality Assessment-Schedule D; WHO Safe Motherhood Needs Assessment Package version 1.1- 2001 (revised edition); [17] and Part IV- Surveyor's Manual using the antenatal client exit interview and postpartum client exit interview guides.

Outcome Measure

The overall satisfaction variable was defined based on responses to these three questions: "How will you rate the care that was given to you during your maternal health service uptake"? "Based on your expectations and experiences will you use this facility again in future?"; "Can you recommend the maternal health services in this facility to your friend/relation or neighbour"? Four broad themes were developed from the reasons the women choose as why they will use the facility again. These themes were the main factors used to categorize the responses of the mothers to the questions on why they intend to use the facility again for maternal health service, and also, why they will recommend the facility to their relations, friends, and neighbours for maternal health services.

Statistical Analysis

The SPSS statistical package, version 25 was used for data entry and analysis. The analysis was done according to the specific objectives using generated tables, ratios, frequency, percentage calculations and cross tabulations. Chi-square test of significance for

test of comparison of qualitative categorical data. Student t-test for group comparison of means, Bi-variant, and Multivariate Analysis using logistic regression were used in the analysis of data at 95% confidence interval. P-value was set at 0.05.

Student t test was used to compare means with regard to age of respondents, and amount of pregnancy. Multivariate analysis using binary logistic regression was used to determine factors predicting the level of satisfaction of mothers with the quality of maternal health service. Chi square test of significance was done to find out the factors that are significant. Bi-variant analysis was done to determine the factors that are associated with the level of satisfaction, and this performed best when the alpha level was set to much higher than conventional levels (0.20).¹⁸ Multivariate logistic regression models were generated to determine the predictors of true satisfaction with maternal health service. Logistic regression models were fitted for the urban and rural areas combined, and also separately for the urban and rural study areas. Results were reported using Odds ratio, at 95% Confidence Interval and the level of significance was set at <0.05.

Ethical Considerations

Ethical approval and informed consent process for the study was obtained from Enugu State University Teaching Hospital ethical committee. All the methods were performed in accordance with the relevant guidelines and regulations as contained in the ethical and informed process obtained from Enugu State University Teaching Hospital ethical committee. Permission for this study was granted by Enugu State Ministry of Health through the Enugu State Ministry of Health ethical committee on research projects. All information from this study was confidential and no individual who participated in this study was linked to any information. The respondents were given the opportunity to withdraw from the study at any time during the study without any consequences to them.

Limitations

This study was a cross sectional study and therefore did not draw conclusions about causality.

Results

This study involved a total of 1,681 mothers, 841 of the mothers were in urban areas, while 840 of the mothers were in rural areas.

Table 1A: Socio-demographic characteristics of respondents

Variables	Location		Total	Chi-square (p-value)
	Urban n= 841 (%)	Rural n=840 (%)		
Age of clients				
Mean \pm SD	30.7 \pm 5.8	30.7 \pm 7.8		
Age group in years				0.183*(0.855)
16-20	15(1.8)	75(8.9)		
21-25	111(13.2)	160(8.9)	90(5.4)	72.684(0.000)
26-30	364(43.3)	244(29.0)	271(16.1)	
31 and above	351(41.7)	361(43.0)	608(36.2)	
Tribe			712(42.4)	
Ibo	827(98.3)	838(99.8)		
Yoruba	4(0.5)	1(0.1)	1665(99.0)	0.015
Hausa	6(0.5)	1(0.1)	5(0.3)	
Others	4(0.5)	0(0)	7(0.4)	
Religion			4(0.2)	
Christianity	832(98.9)	826(98.3)		
Islam	7(0.8)	0(0)	1658(98.6)	0.001f
African Traditional Religion	2(0.2)	14(1.7)	7(0.4)	
Others	-	-	16(1.0)	
Level of education (Respondents)			-	
None			70(4.2)	
Primary	6(0.7)	64(7.6)	315(18.7)	322.608(0.001)
Secondary	68(8.1)	247(29.4)	937(55.7)	
Post-Secondary	463(55.1)	474(56.4)	359(21.4)	
	304(36.1)	55(6.5)		

***Student t test**

Majority (85%) of the respondents in urban areas, and rural areas (72%) were more than 25 years of age. The highest proportion of the respondents in the urban areas were in the age group 26-30 years (43.3%), while

the highest proportion of respondents in the rural areas were in the 31 years and above age group (43%). The proportion of the mothers in the urban areas who had post-secondary school education was 36.1%, while the proportion in the rural areas was 6.5%.

Table 1B: Socio-demographic characteristics of respondents continues

Variables	Location		Total	Chi-square (p-value)
	Urban n=841(%)	Rural n=840(%)		
Number of pregnancies				
Mean ±SD	2.9 ±1.6	3.7 ±2.1	315(18.7)	-8.898*(0.000)
One	188(22.4)	127(15.1)	1148(68.3)	71.709(0.000)
Two -five	600(71.3)	548(65.2)	218(13.0)	
Six and above	53(6.3)	165(19.6)		
Number of living children				
Mean ±SD	2.7 ±1.5	3.3 ±1.9	19(1.1)	-7.919*(0.000)
No Living child	9(1.1)	10(1.2)	362(21.5)	50.828(0.000)
One child	213(25.3)	149(17.7)	1149(68.4)	
Two -five children	582(69.2)	567(67.5)	151(9.0)	
Six and above	37(4.4)	114(13.6)		
Occupation				
Unemployed	142(16.9)	124(14.8)	266(15.8)	61.126(0.000)
Self-employed	569(67.7)	678(80.7)	1247(74.2)	
Salary-employed	130(15.5)	38(4.5)	168(10.0)	

***Student t test**

Mothers in the urban areas had an average of 2.9 pregnancies, while their counterparts in the rural area had an average of 3.7 pregnancies. Many of the mothers in both locations had between two to five pregnancies, (71.3%) of those in urban areas, and 65.2% of those in rural areas). The mothers in urban

areas had an average of 2.7 children, while their counterparts in the rural areas had 3.3 children. Majority of the mothers in the rural areas were self-employed (80.7%), while 67.7% of those in the urban areas were self-employed. The proportion of mothers in the urban areas (15.5%) who were on salary employment was higher than their counterparts in the rural area (4.5%).

Table 2: Overall respondents' level of satisfaction with maternal health service

Variable	Location		Total	Chi-square(p-value)
	Urban n=841 (%)	Rural n=840 (%)		
Overall, Clients Satisfaction				11.564(0.001)
Not Satisfied	122(14.5)	175(20.8)	297(17.7)	
Satisfied	719(85.5)	665(79.2)	1384(82.3)	

A greater proportion (85.5%) of mothers in the urban areas were satisfied with maternal health service they

received when compared with their rural (79.2%) counterparts.

Table 3: The true factors that influenced the mothers' level of satisfaction with maternal health service in urban areas

Variables	Odds Ratio	Wald	Degree of freedom	P-value	Adjusted odds ratio	95% Confidence Interval for Exp(B)	
						Lower Bound	Upper Bound
Intercept	-18.036	511.899	1	0.000			
16-20 Years	.167	0.046	1	0.830	1.182	0.258	5.420
21-25 years	.293	0.687	1	0.407	1.340	0.671	2.677
26-30 Years	-.022	0.008	1	0.930	.979	0.606	1.581

31 and above	0 ^c		0				
One Pregnancy	1.953	5.036	1	0.025	7.051	1.281	38.824
Two-five Pregnancies	.684	1.072	1	0.301	1.981	0.543	7.228
Six and above Pregnancies	0 ^c		0				
No Living Child	-.746	0.492	1	0.483	0.474	0.059	3.815
One Child	-2.373	7.384	1	0.007	0.093	0.017	.516
Two-five Children	-1.285	3.915	1	0.048	0.277	0.078	.988
Six Children and above	0 ^c		0				
No education	0.397	0.172	1	0.678	1.487	0.228	9.696
Primary Education	-0.421	0.919	1	0.338	0.656	0.277	1.552
Secondary Education	-0.732	9.734	1	0.002	0.481	0.304	0.762
Post-Secondary	0 ^c		0				

Mothers in urban areas who had one pregnancy were 7.051 times less likely to be satisfied with the maternal health services when compared with other women. Mothers with five or less children were more satisfied

when compared with those with six children and above. Also, mothers who received secondary education were more satisfied when compared with those that completed post-secondary education.

Table 4: The true factors that influenced the mothers' level of satisfaction with maternal health service in rural areas.

Variables	Odds Ratio	Wald	df	P-value	Adjusted Odds ratio	95% Confidence Interval for Exp(B)	
						Lower Bound	Upper Bound
Intercept	-17.708	227	1	0			
Health Post	17.107	745.073	1	0	26874407	7868333	91789934
PHC	16.861	2804.861	1	0	21029195	11267345	39248556
Comp Hospital	0.426	0	1	1	1.531	0	.d
District	16.94	524.249	1	0	22748392	5335652	96987090
Tertiary	17.832	870.774	1	0	55486281	16975433	1.81E+08
Private facility	16.293	1754.938	1	0	11905817	5555354	25515651
TBA	15.947		1		8430087	8430087	8430087
Church	36.058		1		4.57E+15	4.57E+15	4.57E+15
Spiritual home	0 ^c		0				

Mothers in the rural areas who obtained maternal health service from health post, PHC, district hospitals, tertiary facility, and private hospital were more likely to be satisfied with the services when compared with those who sought care at TBAs and spiritual homes.

Discussion

The highest proportion of the respondents in the urban areas were in the age group 26-30 years (43.3%), while the highest proportion of respondents in the rural areas were in the 31 years and above age group (43%). This shows the age differences of mothers found at home in urban and rural areas during this study. The proportion in the rural areas were similar to the mean age (30.4 years) of women who participated in a community-based cross-sectional survey in 2013 that assessed the determinants of antenatal and delivery care utilization in Tigray

region, Ethiopia [19]. It is also similar to the mean age (30.68±6.74 years) of women who participated in a study in 2012, "client perception of antenatal care services at primary Health centres in an urban area of Lagos, Nigeria" [19], but higher than the mean ages of women (urban=27.9±5.5 years, rural=26.2± 5.7 years) in a study done in 2014 that observed the Spatial Differences in Quality of Maternal Health Service in Primary Health Centres of Enugu State, Nigeria [16]. More mothers in the rural areas (13.6%) had more than five children when compared with those in the urban areas (4.4%). This could be due to the fact that in Nigeria only nine percent of women in rural areas use contraceptive methods when compared with twenty seven percent of mothers in the urban areas that use contraceptive methods [9]. There was also a significant difference in the educational attainment of the respondents. More mothers in the urban areas (36.1%) had post-secondary school education when

compared to their counterparts in the rural areas (6.5%). This was expected as the literacy level in Nigeria is higher in the urban than in the rural areas as observed by the NDHS 2013 [6]. This survey (NDHS 2013), [6] observed that 29% of women 15-49 years of age in urban areas of Nigeria and 10.5% of their counterparts in the rural areas completed secondary education. Majority of the respondents in urban (67.7%) and rural (80.7%) areas were self-employed. This was expected as the economic situation in Nigeria is currently bad and people are doing various kinds of self-employed jobs to sustain themselves.

A higher proportion of respondents in the urban areas (85.5%) were satisfied with the maternal health services they received when compared with their rural (79.2%) counterparts. The difference in the above finding could mean a real difference in the quality of services provided in either locations, or the effect of expectations of the respondents in either location [21] Also, the high level of satisfaction with maternal health service in this study could be as a result of the respondents not knowing what is expected from the health care workers and service providers. However, similar, studies in England [8], developing countries [22,23], and Nigeria [24], have also reported that women in the urban areas were more satisfied with maternal health services than those in the rural areas. A similar study in Enugu, Nigeria also observed that 86.3% of mothers in the rural areas were satisfied with the maternal health services received from the health centres when compared with the clients in the urban area, (77%) [16]. Also, a community-based study done in South East Nigeria observed that 94.3% of mothers were satisfied with the antenatal care services received from a primary health centre.²⁵ In contrast, other studies done in Australia [26], England [27], Greece [28], and South Africa [29], reported that women in the rural areas rated their satisfaction with maternal health service higher than women in the urban settings.

However, a study [30] that assessed the experiences of women participating in a safe motherhood programme in Ondo State, Nigeria also noted that mothers may express high satisfaction with the quality of maternal health services despite some inconsistencies between received care and their maternal expectations. Also, women with lower maternal expectations regarding maternal health service also tend to be more satisfied [26] But, a study done in Australia, "Gaining insight into how women

conceptualize satisfaction: Western Australian women's perception of their maternity care experiences" also reported that mothers expressed high satisfaction with maternal health service when the quality of the service is high [31]. Women also perceived their level of satisfaction with maternal health services as high or very good when they are provided with special care [32] These variations may be as a result of different study settings; facilities utilized; study period difference; and a real difference in quality of services provided [33].

In the urban areas, mothers with five or less children were more satisfied when compared with those with six children and above. Therefore, it seems that the respondents with less children probably had lower expectations than those with more children. It also seems possible that with increasing number of children, pregnant women may become more critical of the care they receive. Also, mothers in the urban areas who received secondary education were more satisfied when compared with those that completed post-secondary education. However, mothers in the rural areas who received their maternal health service at Health Post, PHC, Comprehensive Health centre and Tertiary facilities in the urban areas were more likely to be satisfied with services they received when compared with those who attended TBAs and Spiritual homes. This shows that orthodox health facilities are better than unorthodox health practices. However, the true factors that influence the level of satisfaction of mothers with maternal health services differ across countries. In Belgium [34], quality of health talk, waiting time, and accessibility to maternal health services are the factors that influenced the level of satisfaction of mothers. In Ethiopia [35], age, educational status, and income of women were found to be the predictors of client satisfaction.

The Factors affecting utilization of maternal health services in both locations include: poor quality of maternal health service, high cost of obtaining the limited services, poor maternal information available to them, inadequate staff, and bad attitude of staff of the few available staff. In Ghana [36], the major complaint is presence of unfriendly, rude and incompetent staff, while mothers in Ethiopia complain of lack of privacy [37]. Mothers in Southwest Nigeria [38]. complained of poor sanitary condition, those in rural Niger Delta Nigeria complained of inadequate health talks [39], while in South East Nigeria, mothers were not happy about the cost of utilizing maternal health service [140]. The

mothers in this study in the rural areas also complained of non-availability of transportation to the health facilities, influence of relations, and cultural beliefs as constraints limiting their uptake of maternal health service.

Conclusion and Recommendations

The respondents were satisfied with the maternal health services they received, and more of the mothers in the urban areas were satisfied than those in the rural areas. The respondents' parity, number of pregnancies they had, and the type of facility the mothers accessed was the true factors that affected their level of satisfaction. Therefore, there is need to maintain this observed finding, and improve the quality and accessibility of health facilities to improve on the quality of maternal health services given to mothers. Also, there should be an improvement on health talk and health education given to mothers to enable women have a better perception of maternal expectations. This will enable the mothers to properly grade their satisfaction with maternal health services. Health care workers should be regularly trained and re-trained to improve the maternal health services they provide to mothers.

List of Abbreviations

ANC	Antenatal clinic
MHS	Maternal health service
MSS	Midwives Service Scheme
NC	Natal care
NPHCDA	National Primary Health Care Development Agency
PHC	Primary health care centres
PMC	Premarital care
PNC	Post-natal care
TBAs	Traditional Birth Attendants
WHO	World Health Organisation

Declarations

Ethics approval: Ethical approval was obtained from Ethical committee of Enugu State University Teaching Hospital, Enugu, Nigeria.

Consent to participate: We seek your consent to participate in this study titled "Maternal health service satisfaction- Comparative study of mothers in urban and rural areas of Enugu State, South East Nigeria." The purpose of this study is to find out mothers' satisfaction with the maternal health service they

receive. This will help to reduce the maternal mortality ratio of Enugu state and Nigeria in general. This study will involve collection of data with questionnaires from selected and consenting mothers in the selected urban and rural areas (village/settlements/neighbourhoods). The time for collection of these data will be thirty-five minutes per participant. The collected data will be compiled and analysed. The results of these data from mothers in urban areas and those in rural areas will be compared. We will then write a detailed report of the study and make suggestions that will help to improve maternal mortality indices in Enugu state.

You will only take part in this study if you are a volunteer. You are also free to withdraw from the study at any stage of the study. There will be no penalty or loss of benefits or any harm in any form to you if you participate or do not participate, or if you withdraw from the study at any stage of the study. But I hope the suggestions I will make from the results of the study will significantly reduce maternal mortality ratio in Enugu state and in Nigeria in general if implemented by those concerned with maternal health service delivery. This research is of minimal risk. We will keep your study records as confidential and your name will not be required in the study. You can ask questions or request further explanations or details about this consent, or on the study now or at any stage of the study. This research will be published in a journal. Would you like to participate in this study? I will record "Yes" if you give your informed consent.

Consent for publication: We, Okechukwu Chime Ogbodo (Lead author and corresponding author) and Edmund Ndudi Ossai (author) hereby give consent for publication of our research titled, "Maternal health service satisfaction- Comparative study of mothers in urban and rural areas of Enugu State, South East Nigeria." This research is original research done by us and has not been submitted anywhere for publication.

Availability of data: Data and materials are available. If someone wants to request the data from this study, please contact the corresponding author, Okechukwu Chime Ogbodo.

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Authors contributions: Okechukwu Chime Ogbodo: Wrote various sections of the research except the literature review. He also funded the research.

Ossai EN: Wrote the literature review.

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