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Urban-Rural differences of Maternal Healthcare Service Utilization in Abia South Senatorial District, Abia State, Nigeria

¹Omokwe MM, ¹Mba O, ¹Maiyallaba LA, ¹Ifere JE

¹Department of Preventive and Social Medicine, Faculty of Clinical Sciences, University of Port Harcourt, Port-Harcourt

Corresponding author: Margaret Marvellous Omokwe, Department of Preventive and Social Medicine, Faculty of Clinical Sciences, University of Port Harcourt, Port-Harcourt; margaretomokwe@gmail.com; +2348083897383

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Abstract

Background: Maternal health is an indicator of the well-being of our future generation aimed at ensuring that maternal mortality and maternal morbidity are reduced to its barest minimum, however, there exist a difference in the uptake of these available services between the urban and rural communities. The aim of this study is to investigate the differences in the pattern of utilization maternal health services in Abia South Senatorial District.

Method: A comparative cross-sectional study design was employed which used a multistage sampling technique to recruit 438 women of reproductive age (15-49 years) in 2 of 6 Local Government Areas in the Senatorial District. A semi-structured, pre-tested, interviewer administered questionnaire was used for data collection. The pattern of utilization of services was assessed by frequencies and proportions of respondents who obtained antenatal and delivery care from a skilled health provider.

Result: The mean age of respondents for urban was 26.3 ± 5.4 years while for rural was 25.5 ± 4.0 years. Comparable proportions in urban, (95.0%) and rural, (68.5%) had good use of antenatal care services provided by a skilled health worker ($P < 0.001$). Comparable proportions in urban, (88%) had good use of delivery care services provided by a skilled delivery health worker ($P < 0.001$) while rural, (39%) showed low usage of skilled delivery care.

Conclusion: The level of utilization of antenatal care in health facilities in the study communities was above average.

Keywords: Maternal health, Health care utilization, Antenatal care, Delivery Care, women of reproductive age.

Introduction

According to WHO, The condition of women during their pregnancies, deliveries, and postpartum periods is referred to as maternal health (MH).¹ Maternal services are structured to assist expectant mothers to have healthy infants, completely recover from those changes that occur physically during and after pregnancy and delivery, and remain healthy throughout their pregnancies.² Okeibunor opined that the aim of MH is to discover potential pregnancy issues early as well as avert them from occurring.³

Maternal health services (MHS) include the breadth of medical treatment provided to mothers prior to conception, while pregnant, during labor, and afterwards so as to avert maternal illnesses and fatalities.⁴ MH has various components, which begin at conception. Prenatal care emphasizes healthy eating while maintaining the mother's maximum health and identifying pregnancy issues that should be treated as well as avoided. While post-natal care examines the mother's health after childbirth, this phase includes



recovery, breastfeeding support, mental health care, and addressing health issues that arise, delivery care encourages the use of trained care by licensed midwives or doctors (skilled birth attendants).⁴

Shrestha in his research noted that high-quality healthcare service usage while pregnant, during childbirth, and during the postnatal period promotes the optimal well-being and survival of both mother and child.⁵ It was discovered that low MHS utilization increases maternal fatalities and illnesses, the majority of which are preventable, if all women can access these services effectively.^{4,6} It is necessary to note that MHS must be offered within the healthcare system and delivered objectively in order to significantly minimize maternal fatalities and illnesses. These services must be prioritized to ensure safe motherhood and the overall wellbeing of communities and families.⁷⁻⁹

WHO defined a skilled birth attendant as a medical professional: a midwife, doctor, or nurse educated and proficient in the abilities required to manage a typical birth and the immediate postpartum period and who can also identify complications as well as provide emergency management and/or refer the case to a higher level of medical care when necessary.¹⁰ Trained birth attendants must provide the supplies, medications, and equipment required for quality delivery care in order to manage obstetrics efficiently. This makes delivery care an essential intervention in the battle against maternal and neonatal fatalities.

According to some studies, expectant mothers who attended ANC four or more times throughout their pregnancy were more likely to deliver in a hospital.^{11,12} Ossai research found that the utilization of delivery care in healthcare facilities is still subpar in Nigeria.¹³ The use of ANC and delivery care are still crucial for a healthy pregnancy and delivery outcome in a maternity facility. Once the pattern and factors influencing the use of maternal health care in urban and rural communities are understood, MHS indicators (antenatal care and delivery care) will differ across socio-demographic, socioeconomic, and cultural backgrounds.

The WHO assessed the maternal death ratio in 2002 to be 800 per 100,000 with disparities between urban and rural areas: 351 per 100,000 live births for urban residents and 828 per 100,000 live births for rural residents.¹⁴ According to a 2019 WHO estimate, there were 295,000 maternal fatalities worldwide in that year, with the bulk of these deaths happening in low- and

middle-income nations (211 per 100,000). Nigeria, accounts for 19% of maternal fatalities worldwide in contrast to other nations, and has the highest ranking in maternal mortality burden.¹⁴

According to research published in 2016, maternal mortality was 80 times more prevalent in underdeveloped nations than in industrialized ones. This difference was a result of the underuse of maternal health care, which led to maternal deaths.¹⁶

Unfortunately, a study revealed that maternal deaths and illnesses in sub-Saharan Africa have remained an issue.¹⁷ These maternal fatalities continue to occur in Nigeria despite efforts made, such as the training and deployment of new skilled health workers and the advocacy of institutional deliveries. According to studies, Nigeria is among the first six countries responsible for 50% of all maternal fatalities worldwide.^{18,19}

The bulk of Nigeria's population according to NPC resides in rural areas, necessitating initiatives to lessen spatial disparities in accessing maternal health care in Nigeria.^{20,21} In order to significantly reduce maternal fatalities in Nigeria, Ossai endorsed the idea that rural areas needed special attention.¹³ This study aims to investigate the disparities in maternal health care utilization between urban and rural areas in the Abia South Senatorial District. Furthermore, it is necessary to comprehend the variations in maternal health usage between urban and rural communities and the variables that may affect them in order to improve the policies that would aid in closing this gap.

These findings would be helpful guidance for policymakers in identifying areas that require immediate improvement in healthcare facilities and developing plans to make these facilities more accountable and penetrating to the user's needs, which would lead to increased utilization and the restoration of faith in our healthcare facilities across and beyond Abia State.

The study result would serve as an important input for organizations working on a mother's health plan for the development and usage of maternal health services in rural and urban communities in Abia State.



Method

Study Area

The study was conducted in Abia State's Abia South Senatorial District. Abia, is located in the southeast geopolitical zone and is made up of 17 local government areas. Abia State is bordered to the north and northeast Enugu and Ebonyi States, to the west by Imo State, to the east by Cross River State, to the southeast by Akwa Ibom State, and to the south by Rivers State. There are six local government areas in Abia South Senatorial District: Aba North, Aba South, Obi Ngwa, Ugwunagbo, Ukwa East, and Ukwa West. Aba North and Ugwunagbo served as the study's focus locations.

Study Design

A comparative community-based cross-sectional study design was employed for this study.

Study Population

The population of the study comprised of women of reproductive age (15–49 years) drawn from four communities in Abia South Senatorial District (Aba North LGA and Ugwunagbo LGA).

Inclusion Criteria

- Women who have lived in the communities for at least a year and are in the reproductive age range (15–49 years).
- Women who had a baby or became pregnant within the preceding 24 months.

Exclusion Criteria

- Extremely sick women of reproductive age who were unable to participate in the study.

Sample Size Determination

For a comparative study between urban-rural, the sample size below was used.²³

$$n/\text{group} = 2 \times \{ (Z_{\alpha} + Z_{\beta})^2 \times [P_1(1-P_1) + P_2(1-P_2)] \} \div (P_1 - P_2)^2$$

n = Sample size to be obtained

Z_{α} = Standard deviation value corresponding to a 95% confidence interval = 1.96,

Z_{β} = Standard normal deviate corresponding to a power of 80% (obtained from the normal distribution table) = 0.84,

P_1 = According to a prior study conducted in Nigeria, the proportion of ANC users in metropolitan areas²⁴ = 50.8% = 0.508

P_2 = According to a prior study conducted in Nigeria, the proportion of ANC users in rural communities²⁴ = 37.0% = 0.370

10% non-response were used to calculate the sample size
Substituting the values into the equation

$$n = \{ (1.96 + 0.84)^2 [0.508(1-0.508) + 0.37(1-0.37)] \} \div (0.508-0.37)^2$$

$$n = \{ (2.80)^2 [(0.508 \times 0.492) + (0.37 \times 0.63)] \} \div (0.138)^2$$

$$n = \{ (7.84) \times [0.249936 + 0.2331] \} \div (0.019044)$$

$$n = \{ 7.84 \times 0.483036 \} \div (0.019044)$$

$$n = 3.78700224 \div 0.019044$$

$$n = 198.8 \text{ approximating to the nearest whole number } 199.$$

For 10% non-response rate = $199 \times 0.1 = 19.9$
approximating to the nearest whole number is 20

Therefore, n = Sample Size = $199 + 20 = 219$

Therefore, a total sample size of 219 respondents each for urban and rural was determined (438 participants in total).

Sampling Method

This study used a multistage sampling method.

The sample process involved four stages:

Stage 1 (selection of LGAs by simple random sampling): Two local government areas, Aba North for urban and Ugwunagbo for rural, were chosen by a simple random sample through balloting approach.

Stage 2 (selection of wards by simple random sampling): Using a sampling frame consisting of all the wards in each local government area, two wards were randomly selected by balloting from each local government area. There are ten wards in Ugwunagbo and twelve wards in Aba North. Wards, 1 and 8 were selected for Ugwunagbo, while Wards Ezizama and Uratta were selected for the Aba North.

Stage 3 (selection of communities by cluster sampling): Each community on the list of all the communities in each ward was considered as a cluster; one community from each of these wards was chosen using a simple random selection procedure (by balloting). The communities of Ezizama from the Ezizama ward, Uratta from the Uratta ward, Obegu from the ward 1, and Umugo from the ward 8 were chosen.

Stage 4 (selection of respondents): All participants from the respective clusters who met the inclusion and exclusion criteria were surveyed until a total of 219 respondents for each group was reached.

Study Instrument

The study instrument utilized was a semi-structured, pre-tested, interviewer-administered questionnaire, adapted



and modified from the Nigeria Demographic and Health Survey questionnaire

Pre-testing of the questionnaire

Thirty percent (66) of the sample size, women with infants aged 0 to 24 months who live in Arochukwu but had traits in common with the research locations, completed a pre-test of the questionnaire. Results from a pre-test questionnaire were used to establish the following:

- Appropriateness of the surveys' language and structure
- The viability of the planned sampling techniques
- The viability of the planned method for gathering and analyzing data

Study Procedure/Data Collection Process

Data was collected over the course of eight weeks (June–July, 2022). The participants were informed of the study's goal. All participants who satisfied the requirements to be part of the research population were interviewed using a semi-structured questionnaire.

Data Analysis

Data collected from the field was entered and cleaned in Micro Soft Excel version 2010 and analyzed using IBM SPSS Statistics version 22. Mean and standard deviation were used to show the results for continuous variables, frequencies and percentages were used to express those for categorical variables. A chi square was used to determine the association between urban and rural. P-value of 0.05 was considered statistically significant.

Ethical Approval

The University of Port Harcourt's Ethics Committee granted the study its ethical approval with reference number UPH/CEREMAD/REC/MM84/005. The Abia State Local Government Service Commission granted formal authorization for the study's execution. After giving each participant the information they needed to understand the purpose and parameters of the study, verbal consent was gained from each subject throughout the data collection process.

Results

Both urban and rural areas had response rates of 91.3%. A total of 438 questionnaires; 219 for the urban population and 219 for the rural population were distributed. Four hundred and twenty-two of the

questionnaires were returned, and twenty-two of those returned questionnaires were disqualified for improper tool completion. Data was analysed from 400 completely filled questionnaires.

From the result in table 1, most of the respondents from both urban and rural communities were married; 159 (77.4%) and 168 (84.0%) respectively. The age range of the respondents from urban and rural communities varied significantly. Most of the respondents in the urban and rural between the ages of 25-34 were 115(57.5%) and 130(65.0%) respectively. The mean age was 26.3 ± 5.4 years for urban women and 25.5 ± 4.0 years for rural women. Majority of the respondents had completed tertiary education in the urban 147(73.5%) as compared to the rural were majority of respondents highest level of education was secondary 104(52.0%). 128(64.0%) of the respondents' partner in the Urban area had tertiary level of education while 110(55.0%) of the respondents' spouse in the rural had secondary education. Employment status of the respondents shows that in both urban and rural communities, majority were self-employed and same for both regions; 93 (46.5). There was a slight difference between the employment status of their partners; while 120(60.0%) of the respondents' partners in the urban area were employed, 120(60.0%) of the respondents' partners in the rural area were self-employed. The result also shows that 169(84.5%) of the respondents in urban area earn more than N30000 while 125(62.5%) in the rural area earned N30000 or less.

From table 2, the number of surviving children of respondents, 97(48.5%) of the respondents in urban area had one surviving child while 110(55.0%) of the respondents in the rural area had about 2-4 surviving child. The mean in the number of surviving children were 1.6 ± 0.6 in the urban as compared to 1.9 ± 0.6 in the rural. 148(74.0%) in urban area and 165(82.5%) in rural area had previous history of cesarean section.

The table 3 shows the total number of respondents that attended ANC were 197(98.5%) in urban area and 161(80.5%) in rural area of which 134(68.0%) in urban area and 147(91.3%) in rural area attended antenatal in a PHC, 132(67.0%) in urban area started antenatal during their first trimester, while 75(46.6%) in the rural area stated antenatal during their second trimester. Based on the services received, the result shows that 137(68.8%) in urban and 79(49.1%) in rural had their height measured, 196(99.5%) in urban and 161(100.0%) had



abdominal palpation, 197(100.0%) in the urban area and 151(93.8%) in the rural area had their blood pressure measured, 197(100.0%) in urban and 161(100.0%) in rural were same for these services received iron supplementation, folic acid, malaria prophylaxis, urine test, blood test, 155(78.7%) in urban and 161(100.0%) in rural received deworming tablet, 196(99.5%) in urban and 161(100%) in the rural area received tetanus toxoid, 197(100%) in urban and 161(100%) in rural did not get ITN, 196(99.5%) in urban and 141(87.6%) in rural had ultra sound scan.

From table 4, the result shows that 190(95%) of the respondents in Urban and 137(68.5%) in the rural area utilized antenatal services. The result from Table 5 shows that 108(54.0%) of the respondents in the urban delivered in a secondary health facility, while 122(61.0%) in the rural area employed the services of TBA in their homes. 112(56.0%) in the urban area were delivered by doctors while 122(60.0%) were delivered by a TBA. The result from table 6, shows that 176(88.0%) of the respondents in the urban communities were delivered by a skilled birth attendant, while 78(39.0%) of the respondents in the rural communities were delivered by a skilled birth attendant.

Table 1: Social Demographic Characteristics

Variable	Urban n=200 (Eziama/Uratta)	Rural n=200 (Obegu/Umugo)	X ² (P-value)
Marital status			
Married	159(79.5)	168(84.0)	7.9282(0.019)
Single	37(18.5)	21(10.5)	
Divorced	4(2.0)	11(5.5)	
Widowed	0(0.0)	0(0.0)	
Separated	0(0.0)	0(0.0)	
Age group			
15-24	77(38.5)	67(33.5)	6.4153(0.040)
25-34	113(56.5)	130(65.0)	
35-49	10(5.0)	3(1.5)	
Mean±SD	26.3±5.4	25.5±4.0	1.673(0.095) [†]
Ethnic group			
Igbo	184(92.0)	200(100.0)	17.800(<0.001)
Yoruba	9(4.5)	(0.0)	
Hausa	7(3.5)	0(0.0)	
Religion			
Christianity	200(100.0)	200(100.0)	
Family type			
Monogamous	197(98.5)	117(58.5)	113.801(<0.001)
Polygamous	3(1.5)	83(41.5)	
Education			
Primary	0(0.0)	53(26.5)	145.639(<0.001)
Secondary	53(26.5)	104(52.0)	
Tertiary	147(73.5)	43(21.5)	
Partner Education			
Primary	26(13.0)	47(23.5)	74.549(<0.001)
Secondary	46(23.0)	110(55.0)	
Tertiary	128(64.0)	43(21.5)	
Employment status			
Self employed	93(46.5)	93(46.5)	31.105(<0.001)
Employed	84(42.0)	44(22.0)	
Unemployed	23(11.5)	63(31.5)	



Spouse Employment status			
Self employed	45(22.5)	120(60.0)	63.299(<0.001)
Employed	120(60.0)	50(25.0)	
Unemployed	35(17.5)	30(15.0)	
Family income			
≤ 30000	31(15.5)	125(62.5)	92.854(<0.001)
>30000	169(84.5)	75(37.5)	
Household size			
≤3	96(48.0)	32(16.0)	108.616(<0.001)
4-6	96(48.0)	73(36.5)	
>6	8(4.0)	95(47.5)	

Table 2: Reproductive history

Variable	Urban n=200	Rural n=200	X ² (P-value)
Number of surviving children			
1	97(48.5)	58(29.0)	24.433(<0.001)
2-4	94(47.0)	110(55.0)	
≥5	9(4.5)	32(16.0)	
Mean±SD	1.6±0.6	1.9±0.6	4.985(<0.001) [†]
History of cesarean section			
Yes	52(26.0)	35(17.5)	4.245(0.03)
No	148(74.0)	165(82.5)	

Table 3: Utilization of Antenatal Care Services

Variable	Urban (%) n=200	Rural (%) n=200	X ² (P-value)
Attended antenatal			
Yes	197(98.5)	161(80.5)	34.477(<0.001)
No	3(1.5)	39(19.5)	
Place of antenatal			
Primary Health Centre	134(68.0)	147(91.3)	29.936(<0.001)
Private/missionary hospital	60(30.5)	14(8.7)	
Secondary health facility	3(1.5)	0(0.0)	
Number of antenatal visits			
<4	7(3.6)	24(14.9)	14.439(<0.001)
≥4	190(96.4)	137(85.1)	
Period of booking for ANC			
First trimester	132(67.0)	71(44.1)	29.222(<0.001)
Second trimester	64(32.5)	75(46.6)	
Third trimester	1(0.5)	15(9.3)	
Height measured			
Yes	137(69.5)	79(49.1)	15.519(<0.001)
No	60(30.5)	82(50.9)	
Blood Pressure measured			
Yes	197(100.0)	151(93.8)	12.588(<0.001)
No	0(0.0)	10(6.2)	
Abdominal palpation			
Yes	196(99.5)	161(100.0)	0.820(0.365)
No	1(0.5)	0(0.0)	
Iron supplementation			
Yes	197(100.0)	161(100.0)	
Folic Acid			



Yes	197(100.0)	161(100.0)	
Deworming tablet			
Yes	155(78.7)	161(100.0)	38.887(<0.001)
No	42(21.3)	0(0.0)	
Malaria prophylaxis			
Yes	197(100.0)	161(100.0)	
Urine test			
Yes	197(100.0)	161(100.0)	
Blood test			
Yes	197(100.0)	161(100.0)	
Tetanus toxoid			
Yes	196(99.5)	161(100.0)	0.820(0.365)
No	1(0.5)	0(0.0)	
ITN			
No	197(100.0)	161(100.0)	
Ultra sound scan			
Yes	196(99.5)	141(87.6)	22.777(<0.001)
No	1(0.5)	20(12.4)	

Table 4: Utilization of Antenatal service (≥ 4)

Variable	Urban n=200	Rural n=200	X ² (P-value)
Utilized antenatal service			
No	10(5.0)	63(31.5)	47.070(<0.001)
Yes	190(95.0)	137(68.5)	

Table 5: Utilization of delivery services

Variable	Urban n=200	Rural n=200	X ² (P-value)
Place of last delivery			
Primary health center	64(32.0)	51(25.5)	111.850(<0.001)
Private/missionary hospital	4(2.0)	0(0.0)	
Secondary health facility	108(54.0)	27(13.5)	
Home/TBA	24(12.0)	122(61.0)	
Delivered by			
Doctor	112(56.0)	27(13.5)	119.229(<0.001)
Nurse/Mid wife	64(32.0)	51(25.5)	
TBA	24(12.0)	122(61.0)	

Table 6: Utilization of delivery service by a skilled birth attendant

Variable	Urban n=200	Rural n=200	X ² (P-value)
Delivery service			
Yes	176(88.0)	78(39.0)	103.592(0.001)
No	24(12.0)	122(61.0)	

Discussion

The study comparatively assessed the differences that exist in maternal health service utilization between urban and rural communities in Abia South Senatorial District. Eziamma and Uratta were the two selected communities in Aba North L.G.A. while Umugo and Obegu were the

two selected communities in Ugwunagbo L.G.A. This study is of importance because the utilization rate of ANC and delivery services is truly a reflection of the state of maternal health in any area.



In a healthcare facility, comparable percentages of respondents from urban areas (80.5%) and rural areas (98.5%) were registered for ANC. The outcome revealed a considerable disparity in the use of prenatal care; respondents in urban areas were far more likely to use antenatal care than those in rural areas. Similar to what Tran study found²⁵ this finding contrasted with what Gudu & Addo study.²⁶ According to research conducted in rural southeast Nigeria²⁷ and urban north-central Nigeria,²⁸ a larger percentage of respondents obtained ANC from trained providers. Contrary to other studies in Nigeria, where a higher percentage of respondents in the urban communities used public hospitals for ANC^{24,29} the majority of respondents in both urban and rural areas used primary healthcare centers; however, the rural communities used these primary healthcare centers more than the urban communities. Thus, it may be concluded that primary healthcare institutions predominate in Abia State. For instance, research from other rural communities in Nigeria revealed that the majority of respondents used primary healthcare facilities for ANC.^{24,30}

A total of 95% respondents in urban areas and 68.5% of respondents in rural areas, respectively, reported attending ANC four or more times throughout their pregnancy phase; nevertheless, the urban communities had higher ANC attendance than the rural ones. In rural Bangladesh³¹ and the south-west of Nigeria, similar outcomes were attained.³² In a survey conducted in southeast Nigeria, a larger percentage of respondents in urban neighborhoods attended ANC four or more times than those in rural regions.²⁴ Similarly, more women in urban regions of Nigeria attended ANC visits four or more times than those in rural areas, with the proportion of urban women attending visits being greater.²⁰

Majority (88%) of respondents in the research who lived in urban areas and 39% of those who lived in rural areas had their babies under the supervision of a trained birth attendant. This was consistent with the findings of the NDHS (Nigeria Demographic and Health Survey), which showed that a greater percentage of women gave birth in urban communities than in rural communities.²⁰ A similar outcome was found in Duru study.²⁴ Results from urban communities in Nigeria^{28,24} as compared to rural communities support the notion that urban people use health facilities for delivery of services more frequently than residents in rural communities.^{33,34} The results from rural communities in southeast and southwest Nigeria, where the majority of respondents gave birth in medical facilities, do, however, include

notable outliers.^{27,32} The largest percentage of women who used ANC and delivery services supplied by qualified health staff is seen in the southeast and southwest zones, per NPC (2019) statistics. Rural Nigerians are not the only ones who make poor use of health-care facilities. For instance, a survey carried out in southeast Ethiopia indicated that fewer respondents gave birth in health facilities³⁵ and in Tiray, Ethiopia, an even smaller proportion did.³⁶

In the rural region, 61% of respondents delivered at home or TBA, whereas in the urban area, 54% and 32% delivered in a secondary health facility and a primary healthcare center, respectively. There were also differences in the health facilities utilized for service delivery. Similar results were found in the reports among rural women.^{37,24} This conclusion, however, conflicts with findings from previous research conducted in different parts of Nigeria. For instance, in research conducted in north-central Nigeria, a greater percentage of patients were delivered in private facilities than in government hospitals. The majority of births took place at government health facilities in another metropolitan town in southwest Nigeria.³⁸ In contrast, a comparable survey indicated that the majority of respondents in urban areas gave birth in government hospitals, whereas the majority of those in rural areas did so in maternity facilities or by using traditional birth attendants.²⁴ In related research conducted in northwest Nigeria, the majority of births in urban areas took place in medical facilities, whereas the majority of births in rural regions took place at home.³⁴ These findings indicate that different geopolitical regions of Nigeria utilize delivery services differently. These differences may account for why maternal mortality rates in Nigeria's urban and rural areas, as well as within the various geopolitical zones of the nation, vary.

Implications of the findings of the review

The implications of the findings from this study include the need for Federal, State Government and stakeholders of health to invest more in female education and also create income earning opportunities, particularly for rural women to empower them to make decisions about matters affecting their health. There is also the need for state and local Government to make efforts to train more birth attendants for sustainability of the services as well as increase the use of maternal services especially in rural areas.

Strengths and Limitations The study focused only on the examination of urban-rural disparities in the pattern



of maternal health services among childbearing women (15–49 years) in Abia South Senatorial District in Abia State. This study could not be expanded to more than two LGAs in Abia State due to tactical constraints and the shortened time frame for collecting data.

Conclusion

Although the use of ANC varies significantly between urban and rural women, it is used more frequently by mothers in the urban area than by those in the rural area. In rural areas, many women of childbearing age give birth at home without the help of skilled birth attendants. Since the utilization rate of delivery by skilled birth attendant is higher in urban areas than in rural areas, it is necessary to create special initiatives aimed at promoting uptake. Additionally, there should be a focus on raising community awareness on birth preparedness and complication readiness.

Declarations

Ethical consideration: The University of Port Harcourt's Ethics Committee granted the study its ethical approval with reference number UPH/CEREMAD/REC/MM84/005. The Abia State Local Government Service Commission granted formal authorization for the study's execution. After giving each participant the information they needed to understand the purpose and parameters of the study, verbal consent was gained from each subject throughout the data collection process.

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