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RESEARCH ARTICLE

## Factors Affecting the Utilization of Maternal and Child Health Services in Urban Primary Health Care Centers in Enugu State (Abakpa and Uwani)<sup>1</sup>

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## ABSTRACT

**Background/Aim:** Poor Maternal and Child Health service indicators have been a recurring Public Health challenge in Nigeria since the documentation of National Maternal, Newborn, and Child Health (NMNCH) statistics began in the early 1990s. This study was aimed at identifying the factors that affect the utilization of Maternal and Child Health services among women of childbearing age attending urban Primary Health Care centers in Enugu State (Abakpa and Uwani).

**Methodology:** This was a retrospective and descriptive cross-sectional study and data was collected through a self-administered questionnaire. 296 respondents participated and analysis of data was done using Statistical Package for Social Sciences (SPSS) version 20.0. The findings revealed that the number of deliveries in the health centers was highest in 2018 with a total of 378 deliveries compared to 2016 & 2017 with 280 and 254 deliveries respectively. The total number of under 5 children receiving yellow fever/ measles vaccine in the health center increased throughout the years with a total of 1493 vaccinations in 2016, 1510 in 2017, and 2083 in 2018.

**Results:** It was also observed that the main factors that enhanced Maternal and Child Health (MCH) services in the health centers were decreased maternal age, maternal educational status, affordability of services rendered, good attitude of health workers, and the proximity of both health centers to the homes of the respondents. On the other hand, increased maternal age, poor maternal education, high parity, and long waiting hours experienced by the patients were the major factors hindering the utilization of services rendered in the health centers.

**Conclusion:** To improve utilization of MCH services as identified by the women include; advocacy and sensitization campaigns, community dialogue, and upgrading of the existing health care centers.

**Keywords:** Maternal health, Child health & Primary Health Care

## List of Acronyms

- **AIDS** – Acquired Immunodeficiency Virus.
- **ANC** – Antenatal Care
- **CHEWs** - Community Health Extension Workers
- **CHO** – Community Health Officer
- **ESUTH** - Enugu State University of Science and Technology Teaching Hospital.
- **FMCH** – Free Maternal and Child Health.
- **HICs** – High Income Countries
- **HIV** – Human Immunodeficiency Virus.
- **LGA** – Local Government Area.
- **LICMs** – Low and Middle Income Countries.
- **MCH** – Maternal and Child Health.
- **MDGs** – Millennium Developmental Goals.
- **NMNCH** – National Maternal Newborn and Child Health.
- **NPI** – National Programme on Immunization.
- **PHC** – Primary Health Centre.
- **PNC** – Post Natal Care.
- **SMM** - Severe Maternal Morbidity
- **SPSS** – Statistical Package for Social Science.
- **U5MR** – Under 5 Mortality Rate
- **WHO** – World Health Organization

## Introduction

### 1.1 BACKGROUND INFORMATION:

Reproductive health is a branch of Public Health that deals with promotive, preventive, curative, and rehabilitative health care for mothers and children. Maternal mortality is unacceptably high. Estimates for 2017 show that some 810 women die every day from pregnancy- or childbirth-related complications around the world. In 2017, 295 000 women died during and following pregnancy and childbirth. The vast majority occurred in low-resource settings, and most could have been prevented<sup>1</sup>. The aim of integrating the services is to reduce high mortality among pregnant women and children to the maximum<sup>1,2</sup>. Reproductive health has 3 main components:<sup>2,3</sup>

1. Maternal health
2. Child health
3. Family planning

Complications of pregnancy and childbirth are a leading cause of maternal mortality and morbidity in women of reproductive age in developing countries<sup>2,3</sup>. Maternal and Child Healthservice is the planned attention to the mother and child aimed at achieving almost complete mental, physical, and social fitness in order to protect, preserve, and prolong the life of the mother and child<sup>3,4</sup>. Global

estimates of the burden, causes, and timing of maternal deaths, stillbirths, and neonatal deaths have been instrumental in setting scientific, programmatic, and policy agendas, and in tracking progress toward the Millennium Development Goals (MDGs) and Sustainable Development Goals (SDGs). One of the largest studies to provide population-based rates, timing, and causes of maternal deaths, stillbirths, and neonatal deaths from the same cohorts across 11 sites in eight countries of sub-Saharan Africa and South Asia, using harmonized methods showed these two regions bear a substantial portion of the total global burden of maternal deaths, stillbirths, and neonatal deaths, but have the largest data gaps<sup>5</sup>

World leaders adopted the UN Millennium Declaration in 2000, which committed the nations of the world to a new global partnership, aimed at reducing extreme poverty and other time-bound targets, with a stated deadline of 2015. Fifteen years later, although significant progress has been made worldwide, Nigeria is lagging behind for a variety of reasons, including bureaucracy, poor resource management in the healthcare system, sequential healthcare worker industrial action, Boko Haram insurgency in the north of Nigeria and kidnappings in the south of Nigeria<sup>6</sup>.

Latest figures show a maternal mortality rate of 576 per 100,000 live births, the fourth highest on Earth. Each year approximately 262,000 babies die at birth, the world's second-highest national total. Infant mortality currently stands at 69 per 1,000 live births while for under-fives it rises to 128 per 1,000 live births. More than half of the under-five deaths – 64 per cent – result from malaria, pneumonia, or diarrhea. Investment in this sector has been high in recent years although the proportion of patients able to access appropriate treatment remains<sup>7</sup>. Similarly, a woman's chance of dying from pregnancy and child birth in Nigeria is 1 in 13. Although many of these deaths are preventable, the coverage and quality of health care services in Nigeria continue to fail women and children. Presently less than 20% of health facility offer emergency obstetric care and only 35% of deliveries are attended by skilled birth attendants<sup>8</sup>. The increased proportion of births from 3.6% in 2012 to 8.0% in 2015 recorded in Emergency Obstetric Care (EmOC) facilities is lower than the recommended minimum of 15% by UN calling for demand generation activities. The number of direct obstetric complications treated in EmOC facilities (met need) in 2015 increased by more than 300% compared with 2012. However, this increase in utilization was also associated with an increase in Direct Obstetric Case Fatality Rate (DOCFR) from 3.1% in 2012 to 4.0% in 2015. Findings from this

study indicated improvement in availability, utilization and quality of EmOC services in Bauchi state between 2012 and 2015. However, this is far below minimum acceptable standard by UN process indicators<sup>8</sup>. On 17th December 2007, Enugu State Government launched Free Maternal and Child Health (MCH) services in recognition of achieving Millennium Development Goals (MDGs) 4 and 5 to work against the back drop of unacceptably high child and maternal mortality rate in the state as in other parts of Nigeria<sup>9,7</sup>.

State Ministry of Health to address high maternal and neonatal morbidity & mortality rates in the country and also targeted at strengthening routine immunization and other designated Primary Health Care services at health facilities in the state & the country at large<sup>10</sup>. It is advisable for behavioral change programs with a strong local focus must be launched in rural regions, particularly among younger, illiterate women<sup>11</sup>.

## 1.2 LITERATURE REVIEW

Maternal health is a crucial indicator of the quality of health care in any country. The health of a woman is tied to the health and well being of her children, her family and community as a whole. Thus, when there is maternal mortality it reflects one of the shameful failures of human development in a country<sup>10</sup>. The continued increase in maternal mortality is an issue of concern in the world today. The global burden of Severe Maternal Morbidity (SMM) is not known, but the World Bank estimates that it is increasing over time. Consistent with rates of Maternal Mortality (MM), SMM rates are Higher in Low- and Middle-Income Countries (LMICs) than in High-Income Countries (HICs). The highest burden of SMM is in Sub-Saharan Africa, where estimates of SMM are as high as 198 per 1000 live births. Hemorrhage and hypertensive disorders are the leading conditions contributing to SMM across all regions. Severe maternal morbidity not only puts the woman's life at risk, her fetus/neonate may suffer consequences of morbidity and mortality as well. Adverse delivery outcomes occur at a higher frequency among women with SMM. Reducing preventable severe maternal morbidity not only reduces the potential for maternal mortality but also improves the health and well-being of the newborn<sup>11</sup>.

Maternal health care service utilization is very important for the early detection of mothers who are at high risk of illness and eventually die during pregnancy. In effect, the key maternal health care service that should be rendered during pregnancy include antenatal care (ANC) or prenatal care, skilled care during delivery and postnatal or

postpartumcare (PNC)<sup>12</sup>.

The progress of these as monitored and reported by the United Nations in 2015 showed a good reduction in maternal and child mortality globally. The global under-five mortality rate has declined by more than half, dropping from 90 to 43 deaths per 1000 live births between 1990, 2015 to 2021<sup>13</sup>.

The global under-five mortality rate declined by 59 per cent, from 93 deaths per 1,000 live births in 1990 to 38 in 2021. Despite this considerable progress, improving child survival remains a matter of urgent concern. In 2021 alone, roughly 13,800 under-five deaths occurred every day, an intolerably high number of largely preventable child deaths<sup>13</sup>.

The difference between the sexes has tended to narrow over time in under-five mortality. In general, the risk of death is higher for boys under the age of 5 than for girls. However, due to regional risks, the mortality rate of girls is much higher than expected in some countries. These countries are located in the South and West Asia. After 1990, there were similar developments in this area, and the number of countries with higher-than-expected girl mortality dropped from 25 to 7.

The Sustainable Development Goals (SDG) aims to reduce Under-Five Mortality Rate (U5MR) from preventable causes by reducing the Neonatal Mortality Rate (NMR) to 12 and below per 1000 live births and the U5MR to 25 and below per 1000 live births by 2030. In light of current data, it is estimated that 48 million children under the age of 5 will die between 2020 and 2030. Nearly 80% of these deaths are expected to occur in sub-Saharan Africa and Central and South Asia, where almost all of the countries they host are LMICs<sup>14</sup>.

While there are some developments in child health globally, 75% of countries failing to meet the SDG targets are found in sub-Saharan Africa clearly showing the inequality that children face in terms of their chances of survival due to birthplace. In addition to these, it is necessary to provide adequate health services during childbirth and in the early postnatal period. These services, along with NMR, will also reduce maternal mortality rates, the risk of stillbirths, and disability<sup>14</sup>.

### **Deliveries in Urban Primary Health Center (PHCs)**

Nigeria is described as having the largest population in sub-Saharan Africa in 1991 and as being the tenth largest country in the world. Continued population growth will make Nigeria the

fourth most populated country in 2030 after China, India, and the US. The country is expected to have 39.3% of the population living in urban areas by 1995 and 62% by 2025. 20% of Nigeria's urban growth is attributed to growth in Legist alone. Efforts are being directed to northern regions in order to decrease infant and child mortality and increase contraceptive use. The evidence is interpreted as suggesting that sustained fertility decline is occurring in the southeast and southwest, which together have about 45 million population<sup>15</sup>.

Findings from this Nigerian study with regard to factors impacting on Antenatal Care (ANC) uptake such as low education attainment, low monthly income and younger age, are similar to those reported in 2015 by other authors with accessibility and affordability proving to be central to uptake<sup>16</sup>. Older studies found that some Nigerian women choose indigenous (traditional) maternal health provision instead of modern care due to the quality of care in these establishments or by traditional birth attendants (TBA). TBAs were reported by participants to provide more compassionate care and give more attention to interpersonal relationships<sup>17, 18</sup>.

In furtherance, the above studies conclude that utilization of orthodox prenatal and delivery care is generally poor in Nigeria due to cultural, religious, and financial reasons.

#### **Under-5 Out-Patient Attendance in PHCs**

NMR and U5MR in Nigeria are unacceptably high—32.9 deaths per 1000 live births and 100.2 deaths per 1000 live births in 2017, respectively<sup>19</sup>. Specifically, childhood mortality remains a major social and public health problem in Nigeria, making the country the second largest contributor to under-five deaths globally<sup>20</sup>.

Assessments of various characteristics of children admitted into the hospital for treatment constitute an essential part of health care and audit. Such studies and subsequent deductions may provide useful and interesting clues to interacting or causative factors in patient care especially in an environment such as ours where families complain of various problems that arise from the prevailing economic difficulties.

Apart from financial wellbeing some of the workers believe that exposure of parents in the upper class to the use of modern health facilities and improved perception of the nature of the children's illnesses may account for the early response to medical care seen in the upper social groups. The consequence is that while parents in the privileged groups seek

medical assistance early due to this better perception, others in a lower social economic group seek medical attention late with the accompanied complication. Late presentations probably occur because of parental attempt at alternative medical practices which arise from our social cultural background while other parents are believed to engage in self medical treatment<sup>21</sup>.

#### **Immunization Coverage in PHC**

About 31 million children in sub-Saharan Africa (SSA) suffer from immunisation preventable diseases yearly and more than half a million die as a result of lack of access to immunization<sup>22</sup>. Immunization is the world's most successful and cost effective public health intervention as it presents over 2 million deaths annually. In recent times, studies have explored the predictors and barriers to immunisation or full immunisation while series of reviews have been conducted on this subject. Some of these recent studies have reported that lack of knowledge of immunisation, lack of partner support, financial deprivation and distrust in immunisation programmes account for incomplete or non-immunisation<sup>23-25</sup>. Nigeria is a major contributor of global childhood death from vaccine preventable deaths.

On its own, Nigeria contributes 30% of the global number of unimmunised children under five. Government efforts to strengthen routine immunisation coverage and reduce under-five mortality have had limited success over the last decade<sup>26</sup>. This was attributed to the relatively fixed population of the rural areas in contrast to the urban areas which has a daily influx of individuals. Generally, child, maternal and paternal factors all affect immunization coverage in Nigeria.

#### **PHCs Services Utilization**

It is well established that socioeconomic factors such as lower levels of household wealth and mother's level of education are key determinants of inequalities in maternal and child health care<sup>27-28</sup>. Health care centres should be built in close proximity to homes both in rural and in the urban communities and there should be an adequate number of health care providers who should have studied the norms of that community. There has also been a concerted effort at all levels, and especially by the National Primary Health Care Development Agency (NPHCDA), to ensure community participation in implementing primary health care activities for children and women<sup>29</sup>. The lack of adequate qualified health care personnel and negative attitudes of some providers towards women have remained constant in maternity care delivery in Nigeria<sup>30</sup>. Poor patient-healthcare

provider communication results in some pregnant women deciding not to deliver at a health facility with skilled attendance in favour of delivery with a Traditional Birth Attendant (TBA) or delivery at home, which might lead to pregnancy complications and maternal mortality<sup>31</sup>. When interacting with providers, women desired to be treated in a dignified and respectful manner. Most women agreed that healthcare providers and “especially nurses are rude,” they “shout,” and “talk badly” to the women. They reported that providers made unreasonable requests of women, such as asking them to perform tasks that are inappropriate to ask of a woman in labor. Instances were cited where providers would tell a woman who is in labor or who has just given birth to a baby that “if you stain the bed you will wash it yourself before leaving”<sup>32</sup>. This is to breakdown language barriers to help the communication between patients and health care workers, also to learn of how some traditional practices leading to the prevalence and occurrence of certain disease which could cause maternal and neonatal mortality.

Finally, the veracity of these trends will be verified by the scope of this study specifically within the study population. Detailed study of the reasons for the poor maternal and child health indices is essential to ensure better Maternal and Child Health care, and reduce their mortality rate/ratio to the minimum.

This study will assist in providing information that will be used in planning adequate health programs which are geared towards increasing the knowledge and utilization of Primary Health Care Centers, improving the Maternal and Child Health care services provided at Urban Primary Health Care Centers in Enugu State thereby reducing maternal and child mortality and morbidity rates in Enugu State.

## 2. Methodology

### 2.1 AREA OF STUDY

The study will be carried out in Enugu State which is one of the states in Southeastern Nigeria. It was carved out from old Anambra State in 1991. The State shares borders with Abia State and Imo State to the South, Ebonyi State to the East, Benue State to the Northeast, Kogi State to the Northwest, and Anambra State to the West. The capital territory of Enugu State is Enugu Urban which is made up of three Local Government Areas among which are Enugu East and Enugu South. Enugu East has an area of 383km<sup>2</sup> and a population of 279, 089 & Enugu South has an area of 67km<sup>2</sup> and a population of 198,723 at the 2006 census. Abakpa Nike Health

Centre is located in Enugu East Local Government Area while Uwani Health Centre is located in Enugu South Local Government Area.

Most of the residents are traders, commercial drivers, industrial workers, mechanics, bricklayers, and students with a small percentage of the population comprising teachers, medical staff, and lawyers. These people are mostly Igbos with few persons that are not Igbos by tribe. Abakpa Nike and Uwani Health Centres have both existed for over 15 years and provide services such as antenatal clinic, child delivery, family planning, immunization, outpatient clinic, birth registration, health education, counseling, etc.

The health facility staff includes nurses, Community Health Officers (CHO), ward orderlies, accountants, Community Health Extension Workers (CHEWs), record keepers, security officers, and cleaners. About 50 to 100 patients/clients access care daily from the health center.

### 2.2 STUDY DESIGN

The study design is a combination of a retrospective study and a descriptive cross-sectional study.

### 2.3 STUDY POPULATION

Women who bring their children to Abakpa Health Centre and Uwani Health Center for Medical care and pregnant women attending antenatal clinic.

### 2.4 INCLUSION CRITERIA

The following will be included in the study:  
Female care givers  
Pregnant women on antenatal clinic visit  
Females above 15 years of age

### 2.5 EXCLUSION CRITERIA

Health care workers  
Visitors to the Abakpa Health Centre  
Male care givers  
Females below age of 15 years  
Women who are diagnosed as mentally ill

### 2.6 SAMPLE SIZE DETERMINATION

The sample size will be determined using the formula

$$n = \frac{Z^2 pq}{d^2}$$

$$nf = \frac{n}{1 + \frac{(n)}{(N)}}$$

n = the desired sample size (when the population is greater than 10,000)

z = the standard normal deviation is usually set at 1.96 which corresponds to the 95 percent

confidence level.

P = the population in the target population that has given birth (24.8% i.e. 0.25)

$$Q = 1.0 - P$$

d = degree of accuracy desired 0.05

$$n = \frac{Z^2 Pq}{d^2} = 1.96^2 (0.25) \frac{(1.0-0.25)}{0.05^2} = 3.84 \frac{(0.25)(0.75)}{0.05^2}$$

$$n = 288$$

Substituting for n in

$$nf = \frac{n}{1 + \frac{(n)}{(N)}}$$

Where nf = the desired sample size when the population is less than 10,000  
n = the desired sample size when the population is more than 10,000

N = the estimate of the population size (N=4000)

$$nf = \frac{n}{1 + \frac{(n)}{(N)}}$$

nf = ?

$$n = 288$$

$$N = 4000$$

$$nf = \frac{288}{1 + \frac{(288)}{(4000)}} = \frac{288}{1 + 0.07} = 269$$

a sample size of 269 subjects will be required.

To make up for the number of dropouts, we are adding 10% of 269 to the sample size which is 269 + 27 = 296. So our sample size now is 296.

## 2.7 SAMPLING TECHNIQUE

A stratified sampling technique will be used to select respondents and collect data.

## 2.8 STUDY INSTRUMENTS

A pro forma will be used to collect information on outpatient attendance, deliveries, and use of immunization services.

## 2.9 DATA COLLECTION METHODS

Data will be collected using a questionnaire. This questionnaire will serve as the interviewer and will be administered after consent is obtained from the respondents.

## 2.10 Data Management

Statistical Analysis of data will be done using SPSS version 20.0 statistical software. Results will be presented in tables and charts while the extent of utilization will be determined using frequency and percentage.

## 2.11 Ethical Considerations

Permission to conduct the study will be sought from Enugu State University of Science and Technology College of Medicine Ethical Committee. The respondents also will be informed of the scope of this study and the confidentiality of their data after which their oral consent is obtained.

## 2.12 Limitations

The scope of the study: only pregnant women that would come for an antenatal clinic visit, females above 15 years of age, and female caregivers.

There may be a threat to the internal validation of this study because cross-sectional studies are prone to selection and information bias. This is because the truthfulness of the respondents is not guaranteed. In addition, there may have been respondents' recall bias. Some of the participants might be illiterates and this can limit the quality of information. So we are going to overcome these limitations by explaining to them how important the information they will provide is to their well-being and that of their children, and guiding the illiterate ones in filling the questionnaire.

## 3. Results

A total of two hundred and ninety-six (296) respondents were studied using interview-administered questionnaires. The respondents were persons who have assessed medical care in Abakpa Nike and Uwani Health Centres. The response rate was 100%.

**Table 1:** Socio-demographic characteristics of respondents

Variables	Number (%)
<b>Age in years</b>	
15 – 19	25 (8.4)
20-29	121 (40.9)
30-39	96 (32.4)
40-49	38 (12.8)
50-59	11 (3.7)
60-69	5 (1.7)
<b>Marital Status</b>	
Married	195(65.9)

Variables	Number (%)
Single	60(20.3)
Divorced	15(5.1)
Widowed	26(8.8)
<b>Religion</b>	
Christian	264(89.2)
Muslim	26(8.8)
Traditional	6(2.0)
<b>Educational Status</b>	
Non-Formal Education	21(7.1)
Primary Level	16(5.4)
Secondary Level	99(33.4)
Tertiary Level	126(42.6)
Post Graduate	34(11.5)
<b>Occupation</b>	
Civil servant	99(33.4)
Unemployed	12(4.1)
Self employed	76(25.7)
Student	44(14.9)
Others	65(22.0)
<b>Number of Deliveries</b>	
No Deliveries	70(23.6)
1-3 deliveries	147(49.7)
4-6 deliveries	59(19.9)
7-9 deliveries	20(6.8)
<b>Estimated monthly familyincome</b>	
Below N10,000	54(18.2)
N10,000 - N49,000	107(36.1)
N50,000 - N99,000	68(23.0)
N100,000 - N149,000	43(14.5)
N150,000 and Above	24(8.1)

Table 1 shows that the majority of respondents are within the age groups of 20-29 years (40.9%), married (65.9%), mostly Christians (89.2%), have attained the tertiary level of education (42.6%),

mostly civil servants (33.4%), has a range of 1-3 deliveries (49.7%) and an estimated family income of N10,000 - N49,000 in a month (36.1%).

**TABLE 2:** Factors affecting the utilization of maternal and child health services

Variable	Number (%)
Attitude of health workers	
Excellent	54(18.2)
Very Good	133(44.9)
Good	87(29.4)
Bad	17(5.7)
Very Bad	5(1.7)
Cost of Services	
Very Expensive	64(21.6)
Expensive	49(16.6)
Affordable	122(41.2)
Very Affordable	61(20.6)
Free	0(0)
<b>Time spent in Waiting to be attended to</b>	
<30mins	18(6.1)
30mins - 59mins	30(10.1)
1hr - 1hr29mins	39(13.2)
1hr30mins-1hr59mins	75(25.3)
2hrs and Above	134(45.3)
<b>Distance from home</b>	
Very far	9(3.0)



Variable	Number (%)
Fairly far	42(14.2)
Far	67(22.6)
Near	147(49.7)
Very Near	31(10.5)
<b>Availability of Drugs</b>	
Always	49(16.6)
Most times	69(23.3)
Sometimes	100(33.8)
Few times	51(17.2)
Never	27(9.1)
<b>Perception of Services Rendered</b>	
Poor Services	80(27.0)
Good Services	216(73.0)
<b>Causes of Poor Services</b>	
Services Rendered not poor	215(72.6)
Laziness of health workers	7(2.4)
Lateness to work	41(13.9)
Shortage of health workers	32(10.8)
Incompetence of health workers	1(0.3)
<b>Hospital Environment</b>	
Very clean	79(26.7)
Clean	115(38.9)
Fairly clean	48(16.2)
Dirty	54(18.2)
Very dirty	79(26.7)

Table 2 above shows that majority of the respondents said that the attitude of health workers is very good (44.9%), cost of services is affordable (41.2%), time spent before being attended to is 2 hours and above (45.3%), the distance of health

centers from their houses is near (49.7%), drugs are available sometimes (33.8%), services rendered are good (73.0%) and hospital environment is clean (38.9%).

**Table 3:** Opinion on the cost of services based on estimated monthly family income.

Estimated monthly Family Income	Very Expensive	Expensive	Affordable	Very Affordable	Total
Below N10,000	30(46.9%)	12(24.5%)	9(7.4%)	3(4.9%)	54(18.2%)
N10,000-N49,000	15(23.4%)	26(53.1%)	61(50.0%)	5(8.2%)	107(36.1%)
N50,000-N99,000	8(12.5%)	3(6.1%)	27(22.1%)	30(49.2%)	68(23.0%)
N100,000-N149,000	8(12.5%)	2(4.1%)	12(9.8%)	21(34.4%)	43(14.5%)
N150,000 and Above	3(4.7%)	6(12.2%)	13(10.7%)	2(3.3%)	24(8.1%)
Total	64(100.0%)	49(100.0%)	122(100.0%)	61(100.0%)	296(100.0%)
Pearson's Chi-Square = 124.450 <sup>a</sup>					
P-Value = 0.000					

Table 3 above reveals that most respondents are of the opinion that the cost of services in the hospitals is affordable (122 out of 296) and most earn an estimated monthly family income of N10,000 – N49,000.

**Table 4:** Time spent before being attended to based on occupation.

Occupation	<30mins	30mins-59mins	1hr -1hr29mins	1hr30mins-1hr59mins	2hrs and Above	Total
Civil servant	4(22.2%)	14(46.7%)	16(41.0%)	18(24.0%)	47(35.1%)	99(33.4%)
Unemployed	0(0.0%)	3(10.0%)	0(0.0%)	6(8.0%)	3(2.2%)	12(4.1%)
Self employed						

Occupation	<30mins	30mins-59mins	1hr -1hr29mins	1hr30mins-1hr59mins	2hrs and Above	Total
	6(33.3%)	4(13.3%)	6(15.4%)	20(26.7%)	40(29.9%)	76(25.7%)
Student	0(0.0%)	0(0.0%)	9(23.1%)	13(17.3%)	22(16.4%)	44(14.9%)
Others	8(44.4%)	9(30.0%)	8(20.5%)	18(24.0%)	22(16.4%)	65(22.0%)
<b>Total</b>	<b>44.4%</b>	<b>30.0%</b>	<b>20.5%</b>	<b>24.0%</b>	<b>16.4%</b>	<b>22.0%</b>
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Pearson's Chi-Square = 35.168<sup>a</sup>  
P-Value = 0.004

According to Table 4 above, the majority of respondents (134 out of 296) wait for a minimum of 2 hours and above before being attended to

whenever they visit the health centers, most of which are civil servants (33.4%).

**Table 5:** Distance of hospital from home based on estimated monthly family income.

Estimated monthly Family Income	Very far	Fairly far	Far	Near	Very Near	Total
Below N10,000	3(33.3%)	14(33.3%)	9(13.4%)	18(12.2%)	10(32.3%)	54(18.2%)
N10,000 - N49,000	1(11.1%)	3(7.1%)	21(31.3%)	72(49.0%)	10(32.3%)	107(36.1%)
N50,000 - N99,000	0(0.0%)	15(35.7%)	21(31.3%)	26(17.7%)	6(19.4%)	68(23.0%)
N100,000 - N149,000	0(0.0%)	6(14.3%)	11(16.4%)	23(15.6%)	3(9.7%)	43(14.5%)
N150,000 And Above	5(55.6%)	4(9.5%)	5(7.5%)	8(5.4%)	2(6.5%)	24(8.1%)
<b>Total</b>	<b>9(100.0%)</b>	<b>42(100.0%)</b>	<b>67(100.0%)</b>	<b>147(100.0%)</b>	<b>31(100.0%)</b>	<b>296(100.0%)</b>

Pearson's Chi-Square = 69.708<sup>a</sup>  
P-Value = 0.000

Table 5 above depicts that the majority of respondents live near health centers (147 out of 296) and most of these respondents earn an estimated monthly family income of N 10,000 – N49,000(36.1%)4.

## Discussion

Most of the factors investigated are related to the demographic and sociocultural characteristics of women. The study has identified several factors that have an important influence on the utilization of maternal health services in urban health centers in Enugu State. Maternal health outcomes, just like other health indicators are influenced by sociocultural factors prevailing in the context where the population of interest exists. Human beings interact with their environment, both physical and sociocultural and these interactions influence their physical and mental wellbeing. Maternal mortality and morbidity is a marker of the status of health of the population.

The “Poor understanding of the interplay of many

antecedent factors, including sociocultural, economic and logistic factors, combined with an overwhelming poor health services delivery, is a basic challenge in several countries, particularly in rural settings where functional health care services are relatively scarce”<sup>33</sup>. These include the mother’s age, economic status, place of residence, mother’s education, and occupation.

Parity may be categorized as low parity (one or two births), multiparity (three or four births), and grand multiparity (five or more births). In Nigeria, studies have examined factors associated with parity among women. A study result showed that many of the studied maternal characteristics were significantly associated with either low parity or grand multiparity. Further research showed that while late age at first marriage, improved education, never experiencing child mortality, and polygyny increased the likelihood of low parity, improved education, polygyny, never experiencing child mortality, late age at first marriage, and higher household wealth reduced the likelihood of

grand multiparity<sup>34</sup>.

The analysis indicated that women delivering at younger ages were more likely to use antenatal care, receive skilled attendance at delivery, and use postnatal services. However, a similar study showed that young mothers less than 19 years old and elderly women were less likely to use ANC and delivery services. This may be because of a lack of social support and social stigmatization. The fear of unsafe abortion complications and lack of other options forced most participants into early motherhood. In most African cultures, sociocultural and religious expectations of chastity make unintended adolescent pregnancy a traumatic experience<sup>35</sup>. A comparison of medical and psychosocial outcomes of pregnancy in younger adolescent mothers (<16 years), older adolescent mothers (16–19 years) and adult mothers (>19 years) in Jamaica. Younger adolescent mothers were more likely to deliver preterm ( $p < 0.001$ ) and low birth weight infants ( $p < 0.001$ ) than older adolescent and adult mothers. Older adolescent mothers with significant depressive symptoms had increased odds of preterm delivery<sup>36</sup>. This may explain the reason why few of the respondents were within the age groups of 15-19 and 50-69.

This study shows that utilization of health care services was mostly by women who have had 1 – 3 deliveries. This may possibly be due to increased curiosity experienced by these women concerning the outcome of their pregnancy, usually the first one, which makes them engage more in antenatal visits and hospital deliveries. Most of these women often get anxious following any derangement from previous pregnancies and births. However, with respect to the effect of parity on the utilization of delivery care, the results appear to be consistent with most studies done elsewhere, which indicate that women are significantly more likely to use delivery care services for their first child than later children.

Mother's level of education was the second most influential factor for the use of Maternal and Child Health services. Women who attained a tertiary level of education utilize the health care center more even though most residents of the study area have lower educational status, this may imply that people of the tertiary educational level have more understanding of the importance of Maternal and Child Health care services compared to mothers with lower educational status who engage more in patronizing patent drug dealers and traditional birth attendants<sup>37</sup>. There is strong evidence suggesting that religion, level of education, occupation, distance from the health facility,

residence, country, mass media, maternal age, and wealth index were associated with ANC utilization<sup>38</sup>. This is in tandem with the findings of a similar research done in Sagamu, South Western Nigeria which shows that educated women were more likely to have received ANC during pregnancy, had more frequent visits and used health facilities for delivery. It was noted from a previous study that higher female educational levels are associated with lower fertility rates, better nutritional status of children, a lesser prevalence of female genital mutilation, and increased use of family planning and modern health facilities. Mothers' level of education is proportional to child survival rate. Although the relationship is not linear, children born to mothers with no education suffer the highest mortality at all ages. Previous studies also indicated that the infant mortality rate for children whose mothers have a primary education is 25 percent lower than that of children whose mothers have no education. The gap between children of mothers with at least a secondary education and children of mothers with no education is 36 percent. There are a number of explanations for why education is a key determinant of health service use. Education is likely to enhance female autonomy so that women develop greater confidence and capability to make decisions about their own health. It is also likely that educated women seek out higher quality services and have a greater ability to use healthcare inputs that offer better care.

A good number of the respondents are of the opinion that the cost of services in the hospital is affordable and most of these respondents earn an estimated family income of N10,000 – N49,000 in a month. Respondents who earn an estimated family income of N150,000 and above has the lowest frequency compared to others, which is likely due to more visit of this class of people to private, secondary, and tertiary hospitals which they believe have better health facilities. Studies elsewhere have also documented positive relationship between economic status and antenatal care use, delivery in medical settings, and postnatal services<sup>39</sup>.

Most of the respondents waited for about 2 hours and above before being attended to and would have appreciated it more if they spent less time before being attended to.

The hospital had a total of 5491 under 5 outpatient visits in 2016, 6544 in 2017, and 7129 in 2018. Throughout the years, the number of under 5 outpatient attendance is lowest in the last quarter of the year with a frequency of 4.0% in September 2016, 3.3% in December 2017, and 4.9% in December

2018. This may be due to low incidence of respiratory infection in children during the dry season and respiratory infections is one of the main causes of hospital visits in under 5 children.

The number of deliveries in the health center was highest in 2018 with a total of 378 deliveries compared to 2016 and 2017 with 280 and 254 deliveries respectively. The number of deliveries increased throughout the years, this may be due to increased awareness of the disadvantages of home childbirth and the importance of hospital deliveries. From the result, it was also noticed that the delivery rate is lowest in the first quarter of the year and highest within the second quarter of the year.

The total number of under 5 children receiving yellow fever/ measles vaccine in the health center increased throughout the years with a total of 1493 vaccinations in 2016, 1510 in 2017, and 2083 in 2018 which likely may be because of the increased awareness of the importance of vaccination and free National Program on Immunization schedule.

The study deduced that the main factors that enhance MCH services in the health centers were decreased maternal age, maternal educational

status, affordability of services rendered good attitude of health workers, and the proximity of both health centers to the homes of the respondents<sup>40</sup>. On the other hand, increased maternal age, poor maternal education, high parity, and long waiting hours experienced by the patients are the major factors that hinder the utilization of health care services in the both health centers studied.

### **Conclusion**

PHC services as enunciated in the Alma Ata declaration of 1978 are very vital to making health care services accessible to all. The utilization of maternal and child health services in primary health facilities would be greatly enhanced if adequate steps are taken to address factors that adversely affect patient's satisfaction with the services provided in the PHC. Such factors include long waiting times.

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There was no conflict of interest

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