Health Care Delivery System and the Reduction of Maternal and Child Mortality in Hospitals of Makurdi Benue State Nigeria

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Abstract

The objectives of this publication are to find the historical background of maternal and child health care delivery, the incidence of maternal and child mortality, causes of maternal and child mortality, challenges in accessing maternal health care services of Nigeria. Data for the study were sourced from both primary and secondary means. Primary data was drawn through questionnaire and hospital records. Questionnaire was distributed to a sample of 369 respondents out of 4,740 population of staff of four purposely selected largest hospitals in Makurdi, Benue State. The sample size was determined through Taro Yamane's formula, while the Bourley's proportional allocation formula was used to determine the sample size per each hospital. Data were analyzed using descriptive statistics like tables, percentages, mean and standard deviation, while the test of hypotheses were done through Chi-square. The analyzed result shows that; the availability of maternal and child health care services in the hospitals were poor; accessibility of maternal and child health care services was also poor; Furthermore, Maternal and infant mortality is essentially high and increasing in hospitals of Makurdi, Benue State Nigeria. Several challenges are militating against effective healthcare delivery, therefore, the study recommended, among others, that government and other stakeholders should make conscious efforts to ensure that adequate facilities, tools, and equipment are provided for the hospitals to enhance the quality of maternal and child healthcare services in the Benue State of Nigeria.

Keywords: *Health, Health centres, Infant, Medical personnel, Nigeria, Quality.*

Introduction

The issue of access to maternal health services is of great importance yet a major challenge in Nigeria. Maternity care in Nigeria is organized within the overall national health policy which is operated around three tiers: primary, secondary, and tertiary care levels. Primary health centres are located in all the 774 local government councils in the country [1]. Pregnant women are to receive antenatal care, delivery, and postnatal care in the primary health centres nearest to them. In case of complications, they are referred to secondary care centres, managed by states, or tertiary centres, managed by the federal government.

The Nigerian health system as a whole has been plagued by problems of service quality, including unfriendly staff attitudes to patients, inadequate skills, decaying infrastructures, and chronic shortages of essential drugs. Electricity and water supply are irregular, and the health sector as a whole is in a dismal state. [2] In 2000, the World Health Organization ranked the performance of Nigeria's healthcare system 187th among 191 United Nations Member States. Approximately two-thirds of all Nigerian women deliver outside of health facilities and without medically skilled attendants present [2].

A systematic review on maternal and child health interventions in Nigeria from 1990-2014 noted that poor maternal and child health indicators have been a recurring public health challenge in Nigeria since documentation of national maternal, newborn, and child health (MNCH) statistics began in the early 1990s. [3] For instance, the study showed that each year in Nigeria, more than a quarter-million neonates die, which translates to approximately 700 neonates every day. Low birth weight, lack of antenatal care, maternal illness, mother's age, prematurity, and birth asphyxia are strongly associated with neonatal mortality in Nigeria. Regarding maternal health, out of 529 000 annual global maternal deaths, an estimated 52 900 Nigerian women die from pregnancy-related complications. Thus, a woman's chance of dying from pregnancy and childbirth in the country is 1 in 13 [4]. the weak performance of the health system must be understood in the context of the country's long-standing problems with governance. Corruption in the political system is endemic, while social development, including the promotion of the health of Nigerian citizens, has been more a rhetorical than a real aim of the State [5].

"Nigeria: Dancing on the Brink", stated that access to medical treatment in Nigeria is extremely bad. Emergency care does not exist in many parts of the country and particularly the rural areas [6]. In spite of the various reforms to increase the provision of health care to the Nigerian people, access to health care is only 43.3%. The inadequacy of the health care delivery system in Nigeria, according to the report, could be attributed to the peculiar demographics of the Nigerian populace [7].

The report stated that about 55% of the population lives in rural areas, and only 45% live in urban areas. About 70% of the health care is provided by private vendors and only 30% by the government. Over 70% of drugs dispensed are substandard. The Nigerian Insurance Health Scheme (NIHS) is ineffective as the scheme represents only 40% of the entire population.

About 60% are employed in the informal sector. Over half of the population live below the poverty line, on less than $1 a day and so cannot afford the high cost of health care. Also, there is a poor referral system between the various tiers of health care which probably tells on the poor managerial functions of the health care delivery system in Nigeria [7]. From the brief discussion presented above, it is not difficult to understand that the condition of maternal and child health care in Nigeria is indeed very deplorable.

Nigeria has one of the worst records of maternal and child deaths in the world, and these situations are worsening with time. Some key indicators of maternal and child health in Nigeria for the year 2008 indicates the following important facts:

1. An average number of children per woman 6.
2. Maternal deaths per 100,000 deliveries is 840.
3. Antenatal coverage is 47%.
4. Institutional delivery is 33%.
5. Infant deaths per 1000 births is 97.
6. Under-5 mortality rate (U5MR) (per 1,000) is 140.
7. Crude birth rate (CBR) (per 1,000) is 41.
8. The unmet need for family planning (FP) is 18%.
9. Birth registration is 33%; [8, 14].

Country-level estimates are shown that in the year 2013 two countries accounted for one third of all global maternal deaths: India at 17% (50 000) and Nigeria at 14% (40 000). The ten countries that comprised 58% of the global maternal deaths reported in 2013 are: India (50 000, 17%); Nigeria (40 000, 14%); Democratic Republic of the Congo (21 000, 7%); Ethiopia (13 000, 4%); Indonesia (8800, 3%); Pakistan (7900, 3%); United Republic of Tanzania (7900, 3%); Kenya (6300, 2%); China (5900, 2%); Uganda (5900, 2%) [9].

Maternal and child mortality has continued to be one of the greatest health challenges in Nigeria despite several national and international efforts against the scourge. The

first step of assimilating any policy or programme is proper awareness. However, when this is lacking, the success of that particular policy or programme becomes difficult. Awareness constitutes a very important component of health, and it induces motivation to adopt health promotion behaviour, helping others to make a decision about their health and acquire the necessary confidence and skills to put their decision into practice [10].

One of the hindrances to the development of health care generally in Nigeria has to do with an insufficient number of medical personnel as well as their uneven distribution. The Third Development Plan (1975 to 1980) for Nigeria focused on the inequality in the distribution of medical facilities and manpower/personnel. Despite the desire by the government to ensure a more equitable distribution of resources, glaring disparities are still evident. There has been too much concentration of medical personnel at the urban to the neglect of the rural areas. The deterioration in government facilities, low salaries, and poor working conditions had resulted in a mass exodus of health professionals [11].

Another significant problem in the discharge of maternal and childcare is transportation. Studies have shown that there are not enough vehicles for workers to perform their tasks especially to rural areas. For instance, ambulance services to help women to reach specialized health services as fast as possible particularly during emergencies, are lacking, especially in the rural areas [5]. The maintenance culture of the existing vehicles is poor, while the vehicles are sometimes used for other purposes other than health-related activities [12].

51.6 Percent of Nigerians live in rural areas, most of whom are cut off from modern medical facilities, making pregnant women vulnerable to readily preventable adverse outcomes. Most of these adverse outcomes result from delays in seeking care, getting to health centres when care is sought, receiving care on getting to the health centre, and referring patients to more advanced centres when necessary [13].

In its 2010 report on Future Directions for the National Healthcare Quality and Disparities Reports, the Institute of Medicine (IOM), (2010) (in the US) recommended that future editions of the National Healthcare Quality Report (NHQR) and National Healthcare Disparities Report (NHDR) will include data on the health care system's infrastructure capabilities. According to IOM (2010), these components are not necessarily health care aims/attributes in themselves but are a means to those aims since they are elements of the health care system that better enable the provision of quality health care. Health care systems infrastructure are of interest to the extent that they improve effectiveness, safety, timeliness, patient-centeredness, access, or efficiency.

Other challenges identified by scholars include difficulties associated with transportation and communications, high rates of illiteracy among rural people, deep-rooted traditions and customs, including health beliefs, traditional conservatism, and resistance to ideas from the outside, and practices, which increase the patronage of the services of traditional healers.

Rural areas are characterized by several features that pose a great challenge towards any meaningful development efforts. Such features include isolated and dispersed living units, which makes the provision of social services difficult and expensive; poor quality of life because of the scarcity of essential goods, facilities, and services; cultural patterns unfavorable to development; isolation caused by distance and poor communication; unfavorable environment predisposing to communicable diseases and malnutrition and inadequate health facilities and poor educational opportunities. This situation, as envisaged by the WHO more than three decades ago, has essentially remained unchanged, particularly in Nigeria, including Benue State. [14].

Inadequate health services and an unhealthy environment are underlying causes of malnutrition in children, while poor food quality, insufficient food intake, and severe or repeated infections also contribute to malnutrition. People in rural communities, the report stressed, are most likely to experience such conditions [15]. In rural areas, most people live far from the healthcare facilities and are unable to pay for transport to their nearest health facility. As a result, peoples' access to health care and other essential services are complicated, equally, access to educational systems and the opportunities to equip them to achieve an acceptable level of socio-economic independence to determine their own future is as well deprived. Rural communities are therefore trapped in poverty, which deprives them of basic goods and services and inhibits the capacity of families to care for their children.

The introduction of free maternal care through user-fee waivers in itself is usually accompanied by other challenges. These challenges are essentially due to a lack of adequate planning for sustainability. The introduction of user-fee waivers as was the case in Kano and Jigawa States was, encountered lack of adequate number of skilled health care personnel to handle the huge influx of pregnant women who come to avail themselves of the free maternal care services. Also, large amounts of drugs were used up in very short periods of time. An overwhelming amount of clerical work was required to account for the distribution and use of medicines. Hence there is a need for adequate planning before the introduction of user-fee waivers [5]. Lack of political will to prioritize health care system to reflect in budgetary allocation was also identified as a major hindrance towards maternal mortality health care system in Nigeria [16]; Worsening the situation is the unwillingness of governments in Nigeria to reveal how they spend money. It is difficult to comprehend the rationale behind the phenomenon of unspent funds when funds are usually returned as unspent at the end of each budget period, yet over 52,000 Nigerian women are consigned to early graves due to the failure of the government to provide facilities to assist in pregnancy and childbirth. Without public access to fiscal information and the necessary transparency in the process of government, it is difficult to find out who receives government money and how it was spent [5].

Methodology

Research Design

The research design in this study is descriptive in nature. This design was particularly used because of the need to draw a sample out of the total population of the staff of the four selected Hospitals in Makurdi, Benue State, to answer the questionnaire for subsequent generalization for the entire population.

The Population of the Study

The population of this study comprises of all the staff of the four selected Hospitals in Makurdi, Benue State. These Hospitals are Federal Medical Centre, Makurdi, Benue State University Teaching Hospital Makurdi, General Hospital Makurdi, and Bishop Murray Hospital Makurdi. Information obtained through field survey indicates that the total number of staff in the four hospitals is 4,740.

The population distribution of the study according to the selected hospitals is as follows Federal Medical Centre, Makurdi, Benue State University Teaching Hospital Makurdi, Bishop Murray Hospital, Makurdi, and General Hospital Makurdi is 3,422, 935, 252, and 131 respectively. This information is summarized 3.1 below.

Sample and Sampling Technique

Determination of Study Sample

The sample for the study was obtained using Yaro-Yamene formula as stated thus: [($A =$ sample size, N=population of the study, and e =Tolerable error (5%)].

$$N = \frac{N}{1 + \mathbb{N}(e)^2}$$

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$$N = \frac{4740}{1 + 4740(0.05)^2}$$

$$N = \frac{4740}{1 + 4740(0.0025)}$$

$$N = \frac{4740}{1 + 11.85}$$

$$N = \frac{4740}{12,85}$$

$$N = 369$$

Therefore, the sample for the study is 369 respondents.

Determination of Sample Size per each Hospital

Determination of the sample size per each Hospital was done through the Bourley's population allocation formula. This was done as follows: Where nh = Sample size per Branch, Nh = Total number of staff in each Hospital, N = Total population size, and n = Total sample size

$$Nh = \frac{n \times Nh}{N}$$

$$Nh = \frac{369 \times 3422}{4740}$$

$$nh = \frac{1,262,718}{4740}$$

$$nh = 266.4$$

$$nh = 266\ Federal\ Medical\ Centre\ Makurdi$$

$$nh = \frac{369 \times 935}{4740}$$

$$nh = \frac{345.015}{4740}$$

$$nh = 73\ Benue\ State\ University\ Hospital\ Makurdi$$

$$nh = \frac{369 \times 252}{4740}$$

$$nh = \frac{369 \times 935}{4740}$$

$$nh = \frac{92988}{4740}$$

$$nh = 19.6$$

$$nh = 20 (Bishop\ Murray\ Hospital\ Makurdi$$

$$nh = \frac{369 \times 131}{4740}$$

$$nh = \frac{48339}{4740}$$

$$nh = 10 (General\ Hospital\ Makurdi$$

Sampling Technique

This study employed a simple random sampling procedure to select respondents. A sample of 369 respondents was determined for the study using Taro Yamane's formula, while the Bourley's population allocation formula was used to determine the sample size per each Hospital.

After that, the simple random technique was employed to draw the actual sample for the study. This was done through the use of "Lucky-dip", where the inscriptions, YES and NO were written in pieces of papers and dropped in a container, and thoroughly shaken to allow the staff of the school to make a random choice. Those who got "YES" were considered while those with "NO" were ignored. To ensure randomness, the "selection with replacement" technique was used. This process was repeated until the already determined number per each of the cadre of staff of the organization was obtained. This information is summarized in 3.2 below.

Table 1. Population and Sample Distribution

Location	Population	Sample
Federal Medical Centre, Makurdi,	3,422	267
Benue State University Teaching Hospital Makurdi	935	73
Bishop Murray Hospital Makurdi	252	20
General Hospital Makurdi	131	10
Total	**4,740**	**369**

Source: Field Survey, 2018

Method of Data Collection

The method of collecting data for this research was basically classified into two: primary and secondary data. The primary data was collected through a questionnaire. On the other hand, the secondary data was gathered through books, journals, magazines/newspapers reports, and the internet.

Analysis of data in this study shall be done by means of descriptive statistics such as mean and standard deviations and simple percentages. The test of hypotheses shall be done using the student's t-test. The analysis shall be facilitated using the computerized Statistical Package for Social Sciences (SPSS) software (version 20).

Results

Analysis and Interpretation

Information distribution of respondents as regards the hospitals and gender was presented in tables, analyzed, and interpreted accordingly using simple percentages.

Table 2. Socio-Demographic Attributes of Respondents

Variable	Frequency (369)	Percentage (100%)
Federal Medical Centre, Makurdi.	267	72%
Benue State University Teaching Hospital Makurdi	73	20%
Bishop Murray Hospital Makurdi	20	5%
General Hospital Makurdi	10	3
Sex		
Female	88	24%
Male	281	76%
Age		
18-35 below	110	30%
36-50 years	221	60%
51-65 years	38	10%
Marital Status		
Single	74	20%
Married	258	70%
Divorced	37	10%
Educational Qualification		
Secondary School below	55	15%
NCE/ND	125	34%

Source: Field Survey, 2019

Table 2 above shows the socio-demographic attribute of respondents according to specific variables, including hospital (Place of work), sex, age, marital status, and educational qualification of respondents. The table revealed that 72% (267) of the respondents were from Federal Medical Centre Makurdi, 20% (73) of the respondents were from Benue State University Teaching Hospital Makurdi, while 5% (20) and 3% (10) of the respondents were from Bishop Murray Hospital and General Hospital Makurdi respectively. This implies that most of the respondents were from Federal Medical Centre, Makurdi, the largest hospital in Makurdi, followed by Benue State University Teaching Hospital, Makurdi.

Socio-demographic attributes also presented data on the sex distribution of respondents. The data shows that male respondents were 76% (281) while female respondents were 24% (88). This data revealed that the female group was grossly under-represented in job positions in hospitals in Makurdi Town. The last national population census in Nigeria in 2006 revealed

that the population of females in Nigeria and Benue State was about 49% (National Population Commission, 2009). The disparity against women in the workforce of hospitals in Makurdi Town corroborates several already existing studies that there was gross inequality against women in Nigeria as regards most economic, political, and social activities [17]. This low representation of women in economic, political, and social activities is capable of emboldening the poverty situation against them and poor accessibility to maternal and child healthcare.

The age distribution shows that 30% (110) of the respondents belong to the age group of 18 to 35 years. Those in the age group of 36 and 50 years were 60% (221), while 10% (38) of the respondents belonged to the age group of 51 and 65 years. This implies that the most active group in child bearing (18 to 35 years) had low representation (30%) in job opportunities in Hospitals within Makurdi Town. If this trend is assumed to be the general situation in Makurdi Town, then most of the active child-bearing individuals would have been impoverished making access to quality healthcare services a herculean task particularly in the absence of a coherent National Health Insurance Scheme. This assertion is supported by other researchers [18].

Data on marital status revealed that single respondents were 20% (74); those who were married made up 70% (258), and the widowed were 10% (37) of the total sample population. This data implies most of the respondents are likely to have children (child bearing experience) and so could offer objective information for this study.

The data on educational qualification of respondents revealed that only about 15% (55) of respondents had at least secondary education; 34% (125) had National Certificate of Education, National Diploma or equivalent, and 51% (189) of the respondents possessed first degree or above. This data shows that majority of the staff in hospitals in Makurdi Town are literate enough to understand basic issues at stake in this research and provide objective answers.

Research Question One

What is the level of availability of maternal and child healthcare services in hospitals within Makurdi, Benue State?

Table 3. Mean Analysis of the Perceived Level of Availability of Maternal and Child Healthcare Services in Hospitals within Makurdi, Benue State

Items Description	N	$\bar{x}$	SD.	Decision
Doctors are always available?	369	1.68	.619	Rejected
Doctors are always present during child delivery (labour)?	369	1.12	.937	Rejected
Drugs are always available for effective handling of maternal and child health care?	369	1.23	.619	Rejected
Staff trained to handle all maternal and child health care services effectively?	368	1.14	.784	Rejected
Availability of trained staff and equipment for emergency cases related to maternal and child health care?	366	1.65	.823	Rejected
Tools/equipment for maternal and child health care are sufficient?	369	1.58	.686	Rejected
Full maternal and child health care service are offered 24 hours every day.	365	1.76	.745	Rejected

Items Description	N	$\bar{x}$	SD.	Decision
Staff sufficiently trained in malaria diagnosis and treatment?	367	1.24	.527	Rejected
Enough availability of anti-malarial drugs?	368	1.81	.398	Rejected
Enough availability of LLIN (treated Nets)?	366	1.68	.486	Rejected
Staff adequately trained in HIV testing?	368	1.63	.756	Rejected
Staff adequately trained in HIV and AIDS counseling?	369	1.66	.396	Rejected
Enough availability of HIV test apparatus?	369	1.63	.286	Rejected
Staff adequately trained in clinical management of HIV and AIDS?	369	1.11	.467	Rejected
Enough antiretroviral drugs?	369	1.54	.858	Rejected
Staff a adequately trained in preventing mother-to-child transmission (PMTCT) services?	369	1.21	.994	Rejected
Staff adequately trained in infant and young child feeding?	369	1.32	.234	Rejected
Staff adequately trained in EPI and other infant and young child services such as immunization, IMCI etc.?	369	1.65	.178	Rejected
Enough drugs for common child diseases?	368	1.68	.245	Rejected
Staff adequately trained in family planning?	369	1.61	.484	Rejected
Enough availability of drugs and other apparatus for family planning?	368	1.60	.424	Rejected
There is constant electricity supply?	369	1.65	.239	Rejected
Availability of constant source of clean water?	369	1.67	.645	Rejected
There is emergency free transport?	369	1.67	.645	Rejected
Enough hospital beds?	369	1.98	.489	Rejected
Cluster mean/SD	**368**	**1.42**	**.537**	**Rejected**

Source: Field Survey, 2019

Table 3 shows that items 1-25 have a cluster mean of 1.42, drawn from the 100% rejection of the decision for all items. Since the cluster mean fell below the benchmark of 2.00, it implies that the level of availability of maternal and child healthcare services in hospitals within Makurdi, Benue State, is very poor.

Research Question Two

What is the level of accessibility of maternal and child healthcare services in hospitals within Makurdi, Benue State?

Table 4. Mean Analysis of the Perceived Level of Accessibility of Maternal and Child Healthcare Services in Hospitals within Makurdi, Benue State

Items Description	N	$\bar{x}$	SD.	Decision
Average waiting time to see a doctor is not more than 30 minutes?	369	1.23	.619	Rejected
Adequate health specialists to effectively handle maternal and child health care cases?	369	1.76	.937	Rejected
Emergency cases related to maternal and child healthcare are effectively handled?	369	1.46	.619	Rejected

Health facility can be easily located	368	1.34	784	Rejected
There is effective road network and transport system round the facility?	366	1.65	.823	Rejected
Immunization is free?	369	2.58	.686	Accepted
Anti-malarial drugs and LLIN are affordable?	365	1.76	.745	Rejected
Antenatal care services are affordable?	367	1.24	.527	Rejected
Drugs and other apparatus for family planning are affordable?	368	1.81	.398	Rejected
Affordable price for hospital beds?	366	1.68	.486	Rejected
Drugs related to maternal and child healthcare are affordable?	368	1.63	.756	Rejected
Clinical management of HIV/AIDS and antiretroviral drugs are cheap?	369	1.66	.396	Rejected
Staffs are motivated and can be friendly?	369	1.63	.286	Rejected
General cases related to maternal and child healthcare are effectively handled and cheap?	369	1.11	.467	Rejected
Cluster mean/SD.	**368**	**1.79**	**.737**	**Rejected**

Source: Field Survey, 2019

Table 4 shows that items 2-39 on the Mean Analysis of the Perceived Level of accessibility of maternal and child healthcare services in hospitals within Makurdi, Benue State, have a cluster mean of 1.79. This is below the 2.00 benchmark, suggesting that there is a weak or poor accessibility of maternal and child healthcare services in hospitals within Makurdi, Benue State, Nigeria.

Table 5. Maternal and Infant Mortality Rate between 2017 and 2018 in Hospitals within Makurdi, Benue State

Hospital	Birth (B)	Death (D)	MR D/Bx1000/1	2017 Average	2018 Average	Percentage Change C-I/Ix100/1
Federal Medical Centre, Makurdi						
Infants	987	24	24.3	**39.1**		
Maternal	750	4	5.3	**5.3**		
Infants	1220	26	21.3		**114.6**	**193.0**
Maternal	861	5	5.8		**30.9**	**483.0**
BSU Teaching Hospital, Makurdi						
Infants	1220	26	21.3	**39.1**		
Maternal	861	5	5.8	**5.3**		
Infants	707	66	53.9		**114.6**	**193.0**
Maternal	845	11	13.0		**30.9**	**483.0**
General Hospital, Makurdi						
Infants	NA	NA	=	**39.1**		
Maternal	341	3	8.8	**5.3**		
Infants	NA	NA			**114.6**	**193.0**
Maternal	413	5	12.1		**30.9**	**483.0**
Bishop Murrey Hospital, Makurdi						
Infants	NA	NA	=	**39.1**		**193.0**
Maternal	NA	NA	=	**5.3**		**483.0**

Infants	NA	NA	=		**114.6**	
Maternal	NA	NA	=		**30.9**	

Source: Field Survey, 2019

Table 5 shows data on maternal and infant mortality rates in hospitals within Makurdi, Benue State. The data shows that the average maternal and the infant mortality rate was essentially high and increasing in the hospitals in of Makurdi, Benue State.

The data shows that the average infant mortality rate in the hospitals in 2017 was 39.1, while in 2018, is 114.6. On maternal mortality rate in hospitals, the data shows that in 2017 the average mortality rate was 5.3, while in 2018, it was 30.9. The percentage increase of maternal and infant mortality rate shows that infant mortality rate change is 193.0 while maternal mortality rate change is 483.0.

Available data in Table 4 above implies that both maternal and infant mortality rate had increased dramatically between 2017 and 2018 in hospitals within Makurdi, Benue State. Thus, emphasizing the need for identifying challenges against maternal and child health care services in these hospitals.

Research Question Three

What are the Challenges against maternal and child healthcare services in hospitals within Makurdi, Benue State?

Table 6. Mean Analysis of the Perceived Challenges against Maternal and Child Healthcare Services in Hospitals within Makurdi, Benue State

Items Description	N	$\bar{x}$	SD.	Decision
Shortage/cost of essential drugs?	369	3.23	.619	accepted
Early decision to seek maternal and child health care?	369	1.76	.937	accepted
High out-of-pocket expenditure for health care by citizens?	369	3.46	.619	accepted
Shortage of trained personnel on Maternal and Child Health Care services?	368	3.34	.784	accepted
Poor staff remuneration?	366	3.65	.823	accepted
Inadequate public awareness about Maternal and Child Health Care services?	369	2.58	.686	accepted
Traditional therapies?	365	2.76	.745	accepted
Level of education by the mother?	367	3.24	.527	accepted
Poverty?	368	3.81	398	-
Distance and transport	-	-	-	-
Cluster mean/SD.	**368**	**3.46**	**.637**	**Accepted**

Source: Field Survey, 2019

Table 6 shows that items 40-49 have a cluster mean of 3.46, derived from the acceptance of all decisions for the items. Therefore, since the cluster mean is above the benchmark of 2.00, it implies that there is high perceived challenges against maternal and child healthcare services in hospitals within Makurdi, Benue State.

Discussion

In this study, health care delivery systems as well as maternal and child mortality in Makurdi, Benue State, were assessed. The study evaluated the following proxy variables: Availability of maternal and child healthcare services in hospitals within Makurdi, Benue State;

Accessibility of maternal and child healthcare services in hospitals within Makurdi, Benue State; Maternal and infant mortality in hospitals within Makurdi, Benue State; and Challenges against maternal and child healthcare services in hospitals within Makurdi, Benue State. The discussion of findings under this section is done in line with the specific objectives of this study as stated above.

Table 6 presents a Chi-square test of the level of availability of maternal and child healthcare services in hospitals within Makurdi, Benue State. The test yielded the result of poor availability of maternal and child healthcare services in hospitals within Makurdi, Benue State; since X^2(df=3, n=369) = 919.37, p<.05. Therefore, the null hypothesis, which states that there is no significant availability of maternal and child healthcare services in hospitals within Makurdi, Benue State, is accepted against the alternative hypothesis.

One of the hindrances to the development of health care generally in Nigeria is the insufficient number of medical personnel as well as their uneven distribution. [10] Similarly, less than two-thirds of pregnant women in Nigeria receive antenatal and postnatal care from a professional midwife and/doctor at childbirth [5]. Further, Lawoyin found that maternal mortality in Nigeria were blamed on healthcare workers not being skilled enough, financial barriers, failure to access family planning, emergency, antenatal, and delivery care services. In addition, lack of equipment and the high cost of drugs would also contribute to lowering the efficiency of the health systems.

As shown in Table 7, the perceived accessibility of maternal and child healthcare services in hospitals within Makurdi, Benue State, was poor. The result showed X^2(df=3, n=369) = 1312.59, p<.05. Therefore, the null hypothesis which states that there is no significant accessibility of maternal and child healthcare services in hospitals within Makurdi Benue State, was accepted against the alternative hypothesis.

Reasons for poor accessibility of maternal and child health care services have been elucidated by other researchers (Babalola and Fatus, 2009; Zelalem et al., 2014). Of all the reasons pointed out, that low financial and economic status of the individuals remained outstanding. The same was identified in the present study as many respondents admitted that the cost of health services was burdensome.

The findings in the present study are in line with several researchers. For instance, found that inability to pay for services can be a great hindrance against the accessibility of healthcare services [4]. Accessibility of healthcare is sometimes influenced by the cost of healthcare services. Most Nigerians depend on their pockets to access healthcare services; however, victims are usually the low-income people such as the unemployed, the poor, the disabled, the youths, housewives, and the groups who cannot patronize healthcare services due to the inability to afford such services. The health financing system in Nigeria is largely out-of-pocket payments. Unfortunately, the National Health Insurance Scheme which was set up in Nigeria to address this challenge, has not been very effective [18].

On maternal and infant mortality rates in hospitals within Makurdi, Benue State, the study revealed high maternal and infant mortality rate in the hospitals. The average maternal mortality rate in 2017 was 5.3 per live 1000 births, and in 2018, the average maternal mortality rate rocketed to 30.9 per 1000 births (483.0% increase). The then MDG Goal 5 targeted to achieve a ratio of 300 per 100,000 live births by 2015 [19]. Using the 100,000-base figure, the 2017 maternal mortality rate in hospitals within Makurdi, Benue State was 530 per 100,000 live births, while in 2018, it was 3,090 per 100,000, which is about 77 and 930 percent higher than the MDG target, respectively, even four years after MDG target. Infant mortality in 2017 was 39.1 per 1000. This is lower than the MDG target of 71 per 1000 by the Year 2015 [19]. However,

in 2018 infant mortality heightened to 114.6 (61.4% above the MDG target).

Statistics in this study stands likely to under estimate the maternal and infant mortality rate in hospitals within Makurdi, Benue State. This is because some of the identified challenges against maternal and child healthcare delivery in hospitals within Makurdi, Benue State, may affect the decision to visit hospitals. Hence certain cases of births and death of infant and pregnancy-related mothers could not have been recorded.

This high maternal and infant mortality rate is in tandem to the report [9], which indicates that Nigeria and India have the highest maternal mortality rate in the World. Infant mortality in Nigeria was 128 per 1000 births, while maternal mortality was 576 per 100,000 live births [19]. The situation of high maternal and infant mortality rate as revealed in this study can apparently be traced to the poor availability and accessibility of maternal and child healthcare services in hospitals within Makurdi, Benue State.

Tables 5 and 8 reveal the major challenges against maternal and child healthcare services in hospitals within Makurdi, Benue State. Table 5 shows that variables 40-49 have a cluster mean of 3.46 which is above the benchmark of 2.00. This implies that there is high perceived challenges against maternal and child healthcare services in hospitals within Makurdi, Benue State. Additionally, the result of the Chi-square test in Table 8 revealed that there are significant challenges against maternal and child healthcare delivery in hospitals within Makurdi, Benue State, since X^2(df=1, n=369) = .004, p>.05. Therefore, the null hypothesis, which states, "There are no significant challenges against maternal and child healthcare delivery in hospitals within Makurdi, Benue State," is rejected in favour of the alternative hypothesis. This suggests suggesting that further investment was needed to enhance the availability and accessibility of maternal and child healthcare

services in hospitals within Makurdi, Benue State.

This finding corroborates several other researchers [5]. These studies identified several challenges effecting the availability and accessibility of maternal and child healthcare services in developing countries, including the following: inadequate number of trained health personnel, distance to the health facility, traditional influences, poverty, inadequate staff salary, the exorbitant cost of drugs and health care services and lack of healthcare tools and equipment among others.

The current research evidence that the availability and accessibility of maternal and child healthcare services are very important in the fight against maternal and infant/child mortality in Nigeria. However, these were not sufficient in hospitals within Makurdi, Benue State. In order to mitigate the risk of maternal and child mortality in Nigeria therefore, gaps in the capacity and quality of maternal and child health care services in relation to availability and accessibility of maternal and child healthcare services in hospitals and clinics must be addressed.

Conclusion

From the study, the following conclusions have been drawn:

1. Healthcare delivery in terms of availability and accessibility of healthcare services in hospitals within Makurdi, Benue State, is poor.
2. Maternal and infant mortality figures are high and on the increasing in hospitals within Makurdi, Benue State.
3. Several challenges are militating against effective healthcare delivery in hospitals within Makurdi, Benue.
4. Appropriate measures are required to safeguard the health of mothers and children.

Going by the findings and conclusion of this study, the following recommendations have been offered:

1. Government and other stakeholders should make conscious efforts to provide adequate facilities, tools, and equipment in order to enhance quality maternal and child healthcare services.
2. The National Health Insurance Scheme should be strengthened to have a practical benefit on the health needs of the poor and vulnerable groups in the society so as to overcome the problem of exorbitant drugs and services.
3. It is necessary to provide adequate basic infrastructural and economic facilities to aid the quality of living, thereby enabling individuals to afford the cost of health care services.
4. Adequate transportation facilities should be provided and situated in strategic locations to enable individuals to move from their communities to the health facilities, especially in times of emergency.
5. Allowances and work conditions of health workers salaries and allowances should be made attractive in order to keep them motivated and at their best.
6. Enlightenment campaigns must be intensified among members of the public by all necessary stakeholders such as the government, NGOs, CBOs, and FBOs on the benefits of modern health care practices while disabusing their minds on traditional negative beliefs.
7. Record keeping in the health facilities needs to be improved upon. Digital storage methods should be employed to facilitate access and retrieval whenever needed.

Contribution to Knowledge

This study has contributed to knowledge, particularly in the following areas:

1. The significance of availability and accessibility of healthcare services in the efforts against maternal and infant mortality.
2. The poor state of health care delivery in hospitals within Makurdi Benue State has been highlighted.
3. The situation of maternal and infant mortality in hospitals within Makurdi Benue State has been documented.

Suggestion for Future Research

The following areas are suggested for further study:

1. A similar study should be undertaken using other variables such as utilization and coverage of healthcare services to measure the effect of the health care delivery system on the reduction of maternal and child mortality in hospitals within Makurdi Benue State.
2. A similar study should be undertaken in other states in Nigeria to assess the performance of the health care system in Nigeria.
3. This study should be replicated in rural areas to bring to the fore the realities of health care delivery and maternal and child mortality there.

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Conflict of Interest

The Author declares that there is no conflict of interest.

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