

Government Health Expenditure and Child Healthcare Delivery in Benue State: An Empirical Analysis

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ABSTRACT

The study examined the effect of government expenditure on Child health care delivery in Benue State, Nigeria. The study addressed therefore the effect of government expenditure on child health care delivery despite global interventions in addressing the health care delivery challenges. The study relied on survey research design. From the population of 4,031, the sample size of 400 was determined, this study focuses on the 146 respondents from child healthcare units. Descriptive statistics using cross tabulations and chi-square test were used as the method of analysis. The result findings revealed that capital and recurrent government expenditure has influence on child healthcare delivery in the various facilities in Benue state. Based on the findings the study also revealed low immunization completion rates and inadequate government-paid immunization services. In addressing the challenges on childcare delivery, Policy recommendations should focus on strengthening primary and secondary healthcare services, improving immunization programs, and enhancing government support for health care financing in expanding infrastructure and maintaining quality standards as these will ensure sustained improvement in childcare delivery.

Keywords: Childcare delivery, Government expenditure, Healthcare delivery.

INTRODUCTION

Health, defined by the World Health Organization as complete physical, mental, and social well-being, is a fundamental human right and a key driver of productivity, human capital development, and economic growth (Siddiqui et al., 1995; Muhammad & Khan, 2007). Consequently, government health expenditure is central to workforce efficiency and development.

Child healthcare is a core element of primary health care (PHC), ensuring access to immunization, skilled personnel, and essential medicines. Effective PHC is vital for preventing childhood diseases such as pneumonia, diarrhea, and malnutrition, especially in underdeveloped nations (UNICEF, 2020).

Globally, health spending reached \$8.5 trillion in 2019 (9.8% of global GDP), up from 8.5% in 2000 (Jowett et al., 2020). Despite this, about 4.9 million children under five died in 2022, mostly in sub-Saharan Africa and South Asia from preventable causes (WHO, N.D.). This led to global commitments under the MDGs and SDGs (Goal 3) to improve health outcomes.

In Africa, the Abuja Declaration (2001) recommended allocating 15% of national budgets to health, but Nigeria allocated only 7.75% in 2022 (Adebawale-Tambe, 2022), contributing to persistent high under-five mortality (Filmer & Pritchett, 1999).

In Benue State, healthcare delivery is constrained by inadequate infrastructure and manpower. The state has about 1,408 facilities serving 7 million people, but only around 600 doctors, with 92 in public hospitals (Benue State Government, 2014; Ogundepo, 2024). This shortage worsened after the Doctors' Bond programme ended (Ejekwonyilo, 2022), contributing to poor indicators such as high infant and under-five mortality (Adanyi, 2019).

Although health expenditure had increased over the years, it remains below the 2001 Abuja declaration benchmark. Therefore, improving child healthcare in Benue State requires not only increased expenditure but also efficient resource use.

This study examines the relationship between government health expenditure and child healthcare delivery in Benue State, focusing specifically on maternal, child, and HIV/AIDS services using a disaggregated approach.

The broad objective of this study is to assess the effect of government expenditure on child healthcare delivery in Benue State. The specific objectives of the study are to ascertain the effect government expenditure has on child healthcare delivery in Benue State and to ascertain the effect that government expenditure on child healthcare delivery has on immunization services in Benue State.

The report is structured into five (5) sections. After section 1 which is the introduction, section 2 is the literature review; section 3 is the methodology; section 4 is the analysis and results, while section 5 concludes the paper.

LITERATURE REVIEW

Conceptual review

The following concepts are reviewed to espouse the underpinning concepts. They are classified within the context of this work and lend on the variables that this study center on.

Government Expenditure

According to Njoku (2005), Government expenditure refers to government spending from revenues derived from taxes and other sources. These are expenses of the government for its own maintenance, for the benefits of the society, the economy, external bodies and for other countries.

Child Healthcare Delivery

Child health care is considered a fundamental part of primary health care (PHC), ensuring that all children have access to basic, affordable and comprehensive health services. These include access to skilled health professionals, vaccines, and essential medicines particularly for children in underserved or rural areas (UNICEF, 2020). UNICEF emphasizes that child health care within the framework of primary health care aims to ensure that children receive services that are essential for preventing illness, promoting healthy development, and responding to health emergencies. A strong PHC system ensures that every child, regardless of socio-economic status, can access preventive and curative services for common childhood conditions such as diarrhea, pneumonia, and malnutrition (UNICEF, 2020).

Empirical Review

Empirical evidence on the relationship between government health expenditure and child healthcare outcomes shows mixed but largely supportive findings across global, African, and Nigerian contexts. Studies consistently highlight the importance of increased public health expenditure, though outcomes often depend on complementary structural factors.

Ijoko AO, Mohammed H, Haruna S, Zakari I (2025), carried out a study on the impact of public expenditure on the availability of medical equipment and health service delivery in Primary Healthcare Centres (PHCs) in Borno State, Nigeria. The main objective of the study was to investigate the effect of public expenditure on the availability of medical equipment and healthcare service delivery in PHCs. The study employed public capital expenditure as the independent variable, while medical equipment availability and healthcare service delivery served as the dependent variables. A cross-sectional research design was adopted, and primary data were collected using structured questionnaires. The Survey Linear Ordinary Least Squares (OLS) regression technique was employed for data analysis. The findings revealed that public capital expenditure had a statistically significant positive effect on the availability of medical equipment in PHCs, which consequently improved

healthcare service delivery. The study therefore recommended that government should prioritize capital health expenditure to enhance healthcare service delivery in Borno State.

Idris IO, Ouma L, Tapkigen J, et al (2023) conducted a multicountry study on health expenditure and immunization coverage among 24 sub-Saharan African countries using secondary data collected between 2013 and 2017. The primary objective of the study was to estimate the proportion of national health expenditure required to achieve at least 80% immunization coverage under different financing scenarios. The study employed current health expenditure and health expenditure on immunization as the independent variables, while immunization coverage for BCG, DPT3 and measles-containing vaccines served as the dependent variables. Secondary data were obtained from the WHO, GAVI and World Bank databases. Fractional Logit Models and Generalized Linear Models (GLM) were employed for analysis. The findings showed that current health expenditure as a percentage of GDP had a significant positive relationship with BCG and DPT3 immunization coverage. However, health expenditure on immunization as a proportion of current health expenditure was not a significant predictor of immunization coverage. The study further demonstrated that countries with low DPT3 coverage would need to increase health expenditure by over 45% to attain the GAVI target of 80% immunization coverage.

Umole, I. Mohammad, Momoh Asimu Sule, Imoagene Isaac. et al (2025) carried out a study on the impact of health expenditure on immunization and health status in Nigeria using annual time series data obtained from the Central Bank of Nigeria Statistical Bulletin and the World Development Indicators. The study aimed to evaluate the relationship between government expenditure on immunization and infant mortality, examine the effect of foreign agencies' expenditure on immunization and life expectancy, and investigate the relationship between government expenditure on immunization and maternal mortality. Government health expenditure on immunization, foreign development assistance, WHO funding, UNICEF funding, public health expenditure to GDP, physicians per 1,000 population, and percentage of immunized children constituted the independent variables, while infant mortality, maternal mortality, and life expectancy were the dependent variables. The study employed the Augmented Dickey-Fuller unit root test, Johansen co-integration test and Error Correction Mechanism (ECM). The findings revealed that government expenditure on immunization did not significantly reduce infant mortality but significantly improved maternal health outcomes and life expectancy. Foreign agencies' expenditure on immunization significantly reduced infant and maternal mortality while improving life expectancy in Nigeria.

Osai Bismark, Kulu Evans, Appiah-Konadu Paul (2023), examined the effect of government health expenditure on child health outcomes among sixteen West African countries using panel data from 1990 to 2018. The study aimed to determine the effect of government health expenditure on under-five mortality and childhood stunting. Government health expenditure was employed as the independent variable, while under-five mortality and prevalence of stunting were the dependent variables. The study employed the Pooled Mean Group (PMG) estimator and Impulse Response Functions (IRFs) for data analysis. The findings indicated that government health expenditure exerted a negative effect on under-five mortality and childhood stunting in the long run but was insignificant in the short run. The impulse response analysis further showed that both child mortality and stunting responded negatively to shocks in government health expenditure.

Hossain, Khan, Saha, Amin and Prodhan (2024) carried out a study on the effects of healthcare spending on public health status in Bangladesh using secondary data collected from 1990 to 2019. The main objective of the study was to examine the impact of healthcare expenditure on health outcomes, specifically focusing on mortality reduction and infectious diseases. The study employed government health expenditure and the number of doctors as the independent variables, while life expectancy, maternal and child health, mortality rates and infectious diseases served as the dependent variables. The Vector Auto regression with Exogenous Variables (VARX) model was employed for the analysis. The findings revealed that healthcare expenditure significantly improved life expectancy, maternal health and child health while significantly reducing deaths from diphtheria, cholera and tuberculosis. Malaria also exhibited a negative relationship with healthcare expenditure, although the relationship was statistically insignificant. The study concluded that adequate public healthcare financing is essential for improving health outcomes in Bangladesh.

Agyekum O. Enoch et al (2023), assessed government health expenditure and health financing reforms in Ghana with emphasis on achieving Universal Health Coverage (UHC). The study aimed to evaluate trends in public health financing, expenditure allocation and health outcomes in Ghana. Government health expenditure through the Ministry of Health and the National Health Insurance Scheme constituted the explanatory variables, while health outcomes, healthcare utilization and financial protection represented the outcome variables. The study relied on descriptive analysis of secondary data obtained from government health expenditure reports. The findings showed that although government health spending increased substantially over the study period, much of the expenditure was channeled through the Ministry of Health rather than the National Health Insurance Authority. The study concluded that increased domestic health financing and improved efficiency in resource allocation are necessary to sustain Universal Health Coverage and improve equity in healthcare utilization.

Ramadan M, Gutierrez JC, Feil C, et al.(2022) conducted a cross-sectional study to examine the capacity and quality of maternal and child health services at the primary healthcare level across twelve low- and middle-income countries. The study aimed to determine the relationship between primary healthcare service quality and maternal and child health outcomes. Measures of healthcare capacity and service quality constituted the independent variables, while antenatal care, family planning, immunization coverage, treatment of childhood illnesses and access to healthcare were the dependent variables. Secondary data obtained from Service Provision Assessment Surveys and Demographic and Health Surveys conducted between 2007 and 2019 were analyzed using regression analysis. The findings revealed that recent supervision and supervisory feedback significantly improved care-seeking behavior for childhood pneumonia and DPT immunization coverage. However, most maternal health outcomes were not statistically significant after controlling for other explanatory variables.

Olaniyan. A, Isiguzo. C and Hawk. M, (2021) investigated the factors influencing childhood immunization uptake in Lagos State, Nigeria using the Socioecological Model. The objective of the study was to identify individual, interpersonal, organizational, community and policy factors influencing childhood immunization uptake. Various socioecological factors constituted the explanatory variables, while childhood immunization uptake served as the outcome variable. A qualitative research design involving focus group discussions and semi-structured interviews was employed. The findings revealed that caregivers' knowledge, healthcare workers' attitudes, accessibility of health facilities, community mobilization and supportive government policies significantly influenced childhood immunization uptake. The study concluded that interventions targeting multiple socioecological levels are necessary to improve childhood immunization coverage in Nigeria.

Akataghibe. N.N, Ogunsola E.A, Popoola A.O, Abgo. A.I, and Dieleman M.A, (2021), examined the effect of Participatory Action Research (PAR) on routine childhood immunization utilization in Remo North Local Government Area of Ogun State, Nigeria. The study aimed to determine whether community participation could improve childhood immunization coverage. Community dialogue, stakeholder participation and local health interventions constituted the explanatory variables, while childhood immunization utilization served as the dependent variable. The study employed a mixed-methods participatory action research design involving household surveys, interviews and focus group discussions. The findings showed that the proportion of fully immunized children increased significantly from 60.7% to 90.9% following the intervention. Community mobilization and improved responsiveness of healthcare workers significantly enhanced utilization of immunization services, while positive spillover effects were observed on maternal healthcare utilization.

Ijoko (2023), carried out a study on Impact of Public Expenditure on Health Services Delivery in the Federal Capital Territory, Nigeria. The main objective of the study was to study the impact of public expenditure on health delivery services in the Federal Capital Territory Abuja. The study relied on recurrent and capital public expenditure as the independent variable and training of health personnel, medical equipment, health infrastructure, drug availability as the dependent variable. Descriptive statistics and Binomial Logit Regression were used as analytical techniques in the study. The empirical findings reveal that recurrent public expenditure (RECEXP) has a positive and significant relationship with the training of health personnel and drug availability in FCT. Also, capital public expenditure (CAPEXP) has a positive and significant relationship with availability of medical equipment and the provision of health infrastructure in FCT. The findings implied that an increase in recurrent and capital public expenditure will increase the training of health personnel, availability of medical equipment, drugs and provision of health infrastructure in FCT. Also, findings from the study reveal that

corruption, limited institutional capacity, lack of political commitment, and highly fragmented governance structure are the challenges of public expenditure on health services delivery in FCT. The study of Ijoko (2023), recommended adequate funding of primary health care centers in FCT to enhance health outcomes in the FCT.

METHODOLOGY

The study relied on the survey research design to source for primary data to achieve the stated objectives. The survey was carried out in specific healthcare facilities in the selected local governments in Benue state. Structured questionnaire was used to sample the responses of the respondents. Survey research method was used for the study because it allows for wide coverage, cost-effectiveness, and time efficiency while collecting large scale, standardized, and quantifiable data. It is versatile, reduces researcher bias, and encourages honest responses, making it ideal for studies requiring broad presentation and statistical analysis. The survey targeted beneficiaries of child healthcare delivery services in the selected healthcare facilities in Benue state.

Following the research hypothesis, the following model was formulated:

$$HCD = \beta_0 + \beta_1 GCRE_{Hi} + \beta_2 GCRE_{Ei} + \beta_3 GCRE_{Ci} + \varepsilon_i$$

Where:

HCD= healthcare delivery (child health care) (X), GEX=government expenditure(Y), GEX is sub divided into (GCRE_H) = government capital and recurrent expenditure on payment for amount of labor inputs such as hours worked by the physicians, nursing and pharmacist, (GCRE_{EI}) = government capital and recurrent expenditure on payment for inputs such as medical equipment, infrastructure, (GCRE_C) = government capital and recurrent expenditure on payment for pharmaceuticals, supplies and consumables, α = intercept, $\beta_1\beta_2\beta_3$ = Slope coefficients, and ε = Error Term.

Data Source/ Sample Selection

The study utilized data from a broader survey on healthcare delivery in Benue State. However, this paper focuses specifically on child healthcare delivery using a disaggregated sample derived from the overall dataset. This disaggregation allows for more detailed and sector- specific analysis of healthcare delivery outcomes.

Population of the Study

The target population amongst the personnel is the healthcare managers and the beneficiaries of healthcare delivery services from child care which are assumed would have a good knowledge of the effect of government expenditure on healthcare delivery in Benue State. The population considered for the study comprises of 4,031, below is the list of the available and accessible number of healthcare workers and beneficiaries of healthcare delivery services from the child care in each of these facilities and the local government areas where they are each located across Benue State.

Table 1: Population of Health Personnel across three LGAs in Benue State.

S/N	Public Healthcare facilities	Staff Strength	Beneficiaries of Healthcare Delivery (Child HealthCare)
1	Benue State Teaching Hospital, Makurdi	453	727
	Secondary Healthcare Facilities		
2	General hospital North Bank, Makurdi	1178	
	Primary Healthcare centre		
3	Family care health center Agan, Makurdi	98	
	Sub Total		2456
	Kwande LGA		
	Secondary Healthcare Facilities		

4	General Hospital Adikpo	129	132
	Primary Healthcare centres		
5	Gube-Usar Primary Health Centre	15	276
6	Ikyaior-Mbawegh Primary Health Centre	9	187
	Sub Total		748
	Markurdi LGA		
	Secondary Healthcare Facilities		
7	General Hospital Apir	194	146
	Primary Healthcare centres		
8	Federal university of Agric clinic Agan.	14	271
9	Primary Health Centre, Apkehe.	8	194
	Sub Total		827
	Total		4,031

Source: NIGERIA Health Facility Registry (HFR), Benue State Ministry of Health (2022), Benue State Primary Healthcare Board (2023), Benue State Hospital Management Board (2024).

Sample Size

From the population of 4,031, the number of beneficiaries (1,933) was used to compute the sample size. A sample size of 400 was determined using the Taro Yamane (1967) formula in his Elementary Sampling Theory for limited population which is expressed as follows:

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

Where:

n = sample size

N = population of the study area.

e= Level of significance (0.05)

1= Unity (a constant)

This formula was substituted thus;

$$\begin{aligned}
 n &= \frac{1,933}{1 + 1,933 (0.05)^2} \\
 &= \frac{1,934}{4.835} \\
 &= 400
 \end{aligned}$$

Table 2: A sample Number of respondents selected across Health Centers in Benue State

	Beneficiaries of Healthcare delivery		Sample size
Benue State Teaching Hospital, Makurdi	727	$\frac{727}{1,933} \times 400$	150
General Hospital, Apir	146	$\frac{146}{1,933} \times 400$	30

General Hospital, Adikpo	132	$\frac{132}{1,933} \times 400$	27
Federal university of Agric clinic Agan.	271	$\frac{271}{1,933} \times 400$	56
Primary Health Centre, Akpehe.	194	$\frac{194}{1,933} \times 400$	40
Gube-Usar Primary Health Centre, Kwande	276	$\frac{276}{1,933} \times 400$	57
Ikyaior-Mbawegh Primary Health Centre, Kwande	187	$\frac{187}{1,933} \times 400$	39
Total	1,933		400

Source: Author's computation, 2025

Sampling Technique

Two sampling techniques were adopted in the study. Firstly, stratified sampling technique was used to select two LGAs (Kwande and Makurdi) from two senatorial zones to have a geographical spread and ease in generalization. Stratified sampling is a methodological technique used to ensure that different segments or strata of the population are represented proportionally in a sample. Also, the need for stratified sampling is due to the researcher's desire to obtain accurate, representative, and reliable data that can be generalized to the entire population of interest. Secondly, simple random sampling technique via lottery without replacement will be used to select respondents for questionnaire administration from each stratum. Simple random sampling is a type of probability sampling in which the researcher selects a subset of participants from a population, in this sampling method, each member of the population has an equal chance of being selected (Thomas, 2020).

The child healthcare subsample was derived from the overall study sample of 400. Questionnaire were administered to guidance or parents of children receiving child healthcare services in the selected public health facilities during the data collection period. A total of 146 questionnaires were distributed to eligible child healthcare beneficiaries, out of which 146 were duly completed and returned, representing 100% response rate. The respondents were drawn from the selected health facilities that provide child healthcare services in Markurdi and Kwande local government areas, thereby ensuring that the subsample adequately reflected the characteristics of child healthcare beneficiaries within the study area. The inclusion criteria for child healthcare subsample were that respondents had to be guidance or parents of children receiving child healthcare services in the selected public health facilities during the study period, be willing to participate in the study, and provide complete responses to the questionnaire. Questionnaires that were incomplete or did not relate to child healthcare beneficiaries were excluded from the analysis.

Instrument for Data Collection

A structured and closed-ended questionnaire was used to elicit the relevant information for the study from 400 respondents across health institutions in Benue State. The questionnaire was communicated in English and local dialects (Tiv, Idoma, and Igede, among others) depending on the language understanding of the respondents, from which responses will be transcribed for analysis. The structured questionnaire tool is vital for the study as it provided a guide to elicit the relevant information for the study. The questionnaire is divided into two sections to obtain information relevant to the study.

Section one captures the demographic and socio-economic characteristics of the respondents in Benue State.

Section two contains information on the nexus of government expenditure on health and healthcare delivery and also information from the healthcare delivery beneficiaries from Child care in Benue State.

Ethical issues

Evidence of consideration of ethical issues is one of the criteria used to evaluate the quality of qualitative research studies. In social research, ethical considerations are important because they have a direct bearing on the integrity

of a piece of research and the discipline that are involved. The four main ethical issues that need to be taken into account are; harm to participant, informed consent, invasion of privacy and deception (Bryman, 2012).

Informed consent constituted a proximate ethical factor. Respondent's voluntary and informed consent is required for involvement in social research. This suggests that the researcher has a need to thoroughly and meaningfully explain to participants the purpose of the study, who is conducting it, how much funding it is receiving, who is carrying it out, and how it will be promoted. In this sense the researcher made it a point to thoroughly explain to each respondent the reason for the study and to ensure that their participation is entirely voluntary. Every respondent has to give their informed consent in order to take part in this study. The researcher created and gave to study participants an informed consent form that details the goals of the study, the research intervention and voluntarism, among other things.

In addition to obtaining approval from the Ministry of Health, permission was sought from the relevant hospital authorities and parents/guardians of the children involved. The purpose of the study was explained to both the parents and the children in a simple and understandable manner. Verbal consent was obtained from the parents/guardians, and assent was obtained from the children before their participation in the study.

In pursuance the study was certified to be of ethical standard by the ethical committee at Benue State Ministry of Health, as evident in Appendix B.

Data Analysis

Descriptive statistics of percentage indexes and frequencies were used to analyze the questionnaire responses and Pearson chi square test is the cross-tabulation which makes comparison and provides level of significance with chi-square test. According to Gujarati (2020), descriptive statistics are fundamental for data presentation, helping to simplify complex datasets by providing key summary measures such as mean, median, and percentage distributions.

Cross-tabulations and chi-square test was used to examine the relationship between government expenditure and healthcare delivery. This method is particularly appropriate for categorical data, where the goal is to determine whether significant associations exist between two or more variables. Chi-square test is a non-parametric statistical method that measures the association between categorical variables (Agresti, 2018). The test helps to determine whether differences in healthcare performance across various levels of government funding are statistically significant.

RESULTS AND DISCUSSION

Table 3: Questionnaire Distribution and Response Rate

Category	Total Distributed	Total Returned	Response Rate (%)
Healthcare Delivery Managers	12	12	100%
Maternal Healthcare Respondents	146	146	100%
Child Healthcare Respondents	146	146	100%
HIV and AIDS care Respondents	96	96	100%
Total	400	400	100%

Source: Authors computation 2025

This article analyses only the child healthcare subsample (n=146).

Table 3 presents the distribution of questionnaires and the corresponding response rates among the study participants. A total of 400 questionnaires were distributed across the various respondent categories, out of which 400 were successfully returned, yielding an overall response rate of 100%. The questionnaires comprised 12 Healthcare Delivery Managers, 146 questionnaires obtained from child healthcare respondents. Consequently, all subsequent analyses and discussions presented in this paper are based on child healthcare subsample.

Table 4: Descriptive Statistics for Child Healthcare

Variable	Obs	Mean	Std. Dev.	Min	Max
Age of respondent					
0-1 year	146	.3150685	.4661423	0	1
1-5 year	146	.2739726	.4475304	0	1
6-11 year	146	.239726	.4283858	0	1
12 years and above	146	.1712329	.3780091	0	1
Gender of respondent					
Male	146	.5684932	.4969914	0	1
Female	146	.4315068	.4969914	0	1
Type of healthcare facility					
Primary healthcare	146	.4315068	.4969914	0	1
Secondary healthcare	146	.3424658	.476168	0	1
Tertiary healthcare	146	.2260274	.4196969	0	1
Location of hospital					
Markurdi	146	.6575342	.476168	0	1
Kwande	146	.3424658	.476168	0	1
Why are you here in this hospital?					
For immunization	146	.260274	.4402945	0	1
To treat diarrhea	146	.1917808	.3950568	0	1
To treat fever	146	.2945205	.4573961	0	1
To treat typhoid and malaria	146	.1506849	.358973	0	1
To treat breathing problems	146	.0273973	.1637999	0	1
Others	146	.0753425	.2648517	0	1
Have you received the full dose of immunization your child is expected to take?					
Yes	145	.4137931	.4942195	0	1
No	145	.5862069	.4942195	0	1
If you have not do you intend to give your child full dose of immunization?					
Yes	123	.9512195	.2162898	0	1
No	123	.0487805	.2162898	0	1
How much do you spend for immunization in this hospital?					
Below NGN 500	124	.0967742	.2968494	0	1
NGN 500-1000	124	.0080645	.0898027	0	1
NGN 1000-5000	124	.1129032	.3177583	0	1
NGN 5000-10000	124	.2258065	.4198085	0	1
NGN 10000-20000	124	.1774194	.383573	0	1
Above NGN 20000	124	.1774194	.383573	0	1
I pay nothing the government pays	124	.1129032	.3177583	0	1
Insurance pays	124	.0725806	.2604994	0	1
Others	124	.016129	.1264828	0	1
Did you feel that your child's medical needs were adequately addressed during their stay or treatment?					
Yes	146	.9794521	.1423535	0	1
No	146	.0205479	.1423535	0	1
Did you receive timely attention in case of an emergency or urgent need?					
Yes	146	.9931507	.0827606	0	1
No	146	.0068493	.0827606	0	1
Where the facilities (Beds, equipment and play areas) appropriate and child friendly					
Yes	144	.9513889	.2158043	0	1
No	144	.0486111	.2158043	0	1
How satisfied were you with the overall care and treatment provided to your child?					
Very satisfied	146	.9726027	.1637999	0	1

Satisfied	146	.0273973	.1637999	0	1
Do you think that the government is sponsoring some of your hospital bills?					
Yes	146	.3767123	.4862298	0	1
No	146	.6232877	.4862298	0	1
Do you feel that the healthcare providers are giving you the best services?					
Yes	145	.9862069	.1170355	0	1
No	145	.0137931	.1170355	0	1
How would you rate the overall quality of care your child received in this hospital?					
Excellent	146	.5	.5017212	0	1
Good	146	.4178082	.494896	0	1
Fair	146	.0821918	.2756021	0	1
Do you think that the health facilities in this hospital are in good condition providing the best services for you?					
Yes	146	.9657534	.1824879	0	1
No	146	.0342466	.1824879	0	1
Do you think that there are sufficient health facilities in this hospital that will provide the best health services you need?					
Yes	145	.9517241	.2150915	0	1
No	145	.0482759	.2150915	0	1
Do you think there are quality and sufficient drugs and medication that will give you the best service?					
Yes	146	.9520548	.2143858	0	1
No	146	.0479452	.2143858	0	1
How helpful was the hospital staff in providing emotional support or guidance during your child's treatment?					
Helpful	146	1	0	1	1
Did you receive any counseling or guidance about caring for your child's health at home after discharge?					
Yes	146	.9794521	.1423535	0	1
No	146	.0205479	.1423535	0	1

Source: Authors computation, 2025

Descriptive Statistics for Child Health care

Table 4 illustrates the descriptive statistics of all the variables used under the child health care in the study. The table shows that there were 146 responses on child health care in the data. The responses were obtained from the mothers of the children sampled. The descriptive results show that child healthcare utilization was concentrated among younger children, with those aged 0–1 years accounting for 31% of the sample, followed by ages 1–5 years (27%). Male children constituted a slightly higher proportion (56%) than females (43%). In terms of healthcare access, most children were treated at primary healthcare facilities (43%), followed by secondary (34%) and tertiary institutions (22%). Geographically, a larger proportion of respondents were from Makurdi (65%) compared to Kwande (34%).

Regarding healthcare utilization, children were mainly taken to health facilities for fever treatment (29%) and immunization (26%). However, only 41% of children received full immunization, while a higher proportion (58%) had not completed the required doses. Despite this gap, an overwhelming majority of respondents (95%) expressed willingness to complete immunization, compared to only 4% who did not intend to do so. The cost of immunization varied, with **22%** of respondents paying between ₦5,000–₦10,000, 17% paying ₦10,000–₦20,000 or above ₦20,000, while 11% paid ₦1,000–₦5,000, and another 11% reported government coverage.

In terms of healthcare service delivery, satisfaction levels were notably high. A majority of respondents (97%) reported that their children's medical needs were adequately addressed, while 99% received timely attention in emergencies. Similarly, 95% rated health facilities (beds, equipment, and play areas) as child-friendly. Overall satisfaction with treatment was also high, with **97%** of respondents being very satisfied.

Perceptions of healthcare quality were equally positive. About 98% of respondents believed healthcare providers delivered the best services, while 96% agreed that facilities were in good condition. Additionally, 95% reported the availability of sufficient health facilities and drugs. In terms of quality ratings, 41% described services as “good,” while smaller proportions rated them as “excellent” (5%) and “fair” (8%). Emotional and post-care support was also strong, with 100% of respondents describing hospital staff as helpful, and 97% confirming they received guidance on post-discharge child care.

However, financial support remains a concern, as only 37% of respondents reported receiving government assistance with hospital bills, while 62% did not.

Overall, while the findings indicate high satisfaction with healthcare service delivery and quality, significant gaps persist in full immunization coverage (58% not completed) and government financial support (62% without support), which may limit optimal child health outcomes.

Table 5 Distribution of Reliability Test Results for Child Healthcare Delivery

Item	Obs	Sign	Item-test correlation	Item-rest Correlation	Average interitem covariance	Alpha
Type of child healthcare delivered	12	+	0.9679	0.6920	.9555785	0.8630
Do you receive resources for recurrent expenditure such as salaries?	12	+	0.9679	0.9663	3.34814	0.8254
How much received on average capital project	5	+	0.9968	0.9940	1.204545	0.5733
How much do you receive on average for pharmaceutical supplies and consumables	12	+	0.7001	0.5137	2.780992	0.7932
Test scale					1.953209	0.7980

Source: Authors computation, 2025

Result of Reliability Test

Table 5 displays the results of the test of reliability of our instrument of data collection. From table 5 the Cronbach Alpha Reliability results are: Type of child healthcare delivered (0.8630), Do you receive resources for recurrent expenditure such as salaries? (0.8254), How much received on average capital project (0.5733), How much do you receive on average for pharmaceutical supplies and consumables (0.7932). On average, the Cronbach Alpha result is 0.7980, meaning that the instrument is reliable and can be used to collect data for analysis.

Validity Test

Validity of result is the ability of an instrument to measure what is supposed to measure. It focuses on how well the idea of a theoretical construct is translated into or represented in an operational measure (Emmanuel, 2013).

There are different forms of validity among which are face validity, content validity, criterion related validity and construct validity. The face validity was used in the study by showing the questionnaire to my supervisor to determine if the questionnaire contains are adequate. Face validity refers to whether an indicator seems to be a reasonable measure of its underlying construct “on its face” (Emmanuel, 2013).

Logit Regression Result for Multivariate Model

The result shows the level of significant relationship that exist between the dependent variables and independent variables which enables us to make an inference on the effect of government expenditure on child healthcare delivery in Benue state.

Probability and significance level , 0.000 to 0.005 is significant at 1% THAT IS 3 STARS, 0.006 to 0.05 is significant at 5% THAT IS 2 STARS and 0.06 to 0.09 significant at 10% THAT IS 1 STAR

Table 6: Logit Regression Result

Indicate the type of child healthcare you deliver	Coef.	Marginal effect
Dependent		
Respiratory tract infection		
Independent		
How often do you receive for capital expenditure	.779*	.190*
How much do you receive on the average	-.708*	-.158*
Do you receive payment for salaries for childcare	.318*	.078*
_cons	-.556	
Number of obs	32	
Prob > chi2	0.7454	
Pseudo R2	0.0324	

Source: Authors computation, 2025

Table 7: Logit Regression Result

Indicate the type of child healthcare you deliver	Coef.	Marginal effect
Dependent		
treatment of typhoid and malaria		
Independent		
How often do you for capital expenditure	-1.523*	-.282*
How much do you receive on the average	1.502*	.356*
Do you receive payment for salaries for childcare	.318*	.072*
_cons	-.557	
Number of obs	32	
Prob > chi2	0.1677	
Pseudo R2	0.1321	

Source: Authors computation, 2025

Logit Regression Result

Table 6, shows in utilizing the type of child healthcare the dependent variable-Respiratory tract infections when regressed with the independent variable, how often capital expenditure received, how much is received on average for capital expenditure and payment for salaries for child care are not significant which affects respiratory tract infection negatively with marginal effects of 0.190%, -0.158% and 0.78% respectively

The coefficient for the frequency of capital expenditure received (0.779) is positive, indicating that more frequent receipt of capital expenditure is associated with a higher likelihood of delivering respiratory tract infection services. The marginal effect of 0.190 implies that a one-unit increase in the frequency of capital expenditure is associated with an estimated 19.0 percentage-point increase in the probability of delivering respiratory tract infection services, holding other variables constant. The coefficient for the average amount of capital expenditure received (-0.708) is negative, suggesting an inverse relationship with the delivery of respiratory tract infection services. The corresponding marginal effect of -0.158 indicates that a one-unit increase in the average capital

expenditure received is associated with a 15.8 percentage-point decrease in the probability of delivering respiratory tract infection services, *ceteris paribus*. Similarly, the coefficient for payment of salaries for child healthcare personnel (0.318) is positive, with a marginal effect of 0.078, implying an estimated 7.8 percentage-point increase in the probability of delivering respiratory tract infection services. The model has a Pseudo R² value of 0.0324, indicating that approximately 3.24% of the variation in respiratory tract infection service delivery is explained by the expenditure variables included in the model. Although this explanatory power is relatively low, low Pseudo R² values are common in cross-sectional logistic regression models. The result suggests that several other factors, such as the availability of health personnel, medical equipment, essential drugs, healthcare infrastructure, and management practices, may also influence child healthcare service delivery but were not included in the model. Furthermore, the overall model (Prob > chi² = 0.7454) should be interpreted with caution, as it suggests that the explanatory variables collectively provide limited evidence of predicting respiratory tract infection service delivery.

Table 7, presents the Logit regression results for treatment of typhoid and malaria as the dependent variable. The coefficient for the frequency of capital expenditure received (-1.523) is negative, indicating that more frequent receipt of capital expenditure is associated with a lower likelihood of providing treatment for typhoid and malaria. The marginal effect of -0.282 suggests that a one-unit increase in the frequency of capital expenditure is associated with an estimated 28.2 percentage-point decrease in the probability of providing treatment for typhoid and malaria, holding other variables constant. Conversely, the coefficient for the average amount of capital expenditure received (1.502) is positive, indicating that higher average capital expenditure is associated with an increased likelihood of providing treatment for typhoid and malaria. The marginal effect of 0.356 indicates an estimated 35.6 percentage-point increase in the probability of delivering treatment services. The coefficient for payment of salaries for child healthcare personnel (0.318) is also positive, with a marginal effect of 0.072, implying a 7.2 percentage-point increase in the probability of providing treatment for typhoid and malaria.

The Pseudo R² value of 0.1321 indicates that the explanatory variables account for approximately 13.21% of the variation in treatment of typhoid and malaria services. Although this value is higher than that obtained for respiratory tract infection services, it still suggests that a substantial proportion of the variation is explained by other determinants not included in the model. Factors such as healthcare workforce capacity, availability of medicines, facility infrastructure, disease burden, and patient characteristics may also influence child healthcare service delivery. The overall model (Prob > chi² = 0.1677) also indicates limited explanatory power and should therefore be interpreted cautiously. Although 146 questionnaires were retrieved from child healthcare respondents, only 32 observations were included in the logit regression analysis. This is because only these observations contained complete and usable responses for all variables included in the regression model. Observations with incomplete responses or insufficient variation in the variables required for estimation were excluded by the statistical software. Consequently, the regression findings should be interpreted with caution. The relatively small estimation sample (n= 32) limits the statistical power and generalizability of the regression results. The exclusion of incomplete observations may also have introduces selection bias. Future studies should employ large samples with more complete responses to improve the robustness of the estimates. Binary logistic regression was employed because the dependent variable was dichotomous. The Logit model estimates the probability of delivering a specific child healthcare service as a function of government health expenditure variables.

Effect of government expenditure on the sampled area Pearson chi square test Result for the Objectives

Table 8: pearson chi square test Result for Objective

Indicate the type of child care you deliver	Do you receive resources for recurrent expenditure such as salaries	
	Yes	No
Immunization	100.00%	0.00%
Others	0.00%	100.00%

Pearson chi2(1) = 12.0000 Pr = 0.001

Table 9: pearson chi square test Result for Objective

Indicate the type of child care you deliver	How much do you receive on average for capital project		
	LessNGN500,000	NGN 500,000	NGN5M-10M
Immunization	100.00%	100.00%	0.00%
Others	0.00%	0.00%	100.00%

Pearson chi2(2) = 5.0000 Pr = 0.082

Table 10: pearson chi square test Result for Objective

Variable	Less than NGN 500,000	NGN 500,000	NGN 600,000–1M	NGN 1M–5M	χ^2	p-value	Interpretation
Immunization Services	50.00%	50.00%	50.00%	0.00%	4.000	0.261	Not Significant
Others	50.00%	50.00%	50.00%	100.00%			

Source: Authors computation, 2025

Table 8-10, shows the person chi square results of the Impact of government recurrent and capital expenditure on child healthcare delivery in Benue state, The dependent variables (type of child care) is cross tabulated with the independent variables (Do you receive resources for recurrent expenditure such as salaries, How much do you receive on average for capital project, How much do you receive on the average for pharmaceutical supplies and consumables). It shows the type of child healthcare delivered in the various hospitals under study and whether respondents received resources for recurrent expenditure such as salaries in delivering child healthcare. To examine each of the hypothesis between the dependent and the independent variable table 8 shows a correlation between types of child healthcare provided and whether respondents received resources for salaries, it shows that all healthcare managers (100%) who provide immunization services receive resources for recurrent expenditures such as salaries. Also all healthcare managers (100) who provide other child health care do not receive resources from the government such as salaries. This is shown by the probability figure of 0.001 % of the 7.2593 chi square test value to show that there is significant relationship between type of child healthcare and government expenditure, because majority of respondents are not receiving resources for salaries.

Based on the above we reject the null hypothesis that there is no significant impact of government recurrent and capital expenditure on child healthcare delivery, hence we accept the alternative hypothesis that there is significant positive impact of government recurrent and capital expenditure on child healthcare in Benue state.

Similarly, table 9 shows the correlation between type of child healthcare provided and how much healthcare managers receive on average capital project, the table shows that 100% of hospital managers who receive NGN 500,000 on average for capital project deliver immunization services, while 100% who receive less than NGN 500,000 on average for capital project also deliver immunization services. Healthcare managers who deliver other type of child care, about 100.00% who receive NGN 5M-10M deliver other type of child healthcare. This is further shown by the probability value of 0.082% of 2.9167 chi square test value to show that there is no significant relationship between type of child healthcare delivered and government expenditure on capital project.

Finally table 10, shows the correlation between the type of child healthcare provided and how much is received on the average for pharmaceutical supplies and consumables in the hospitals, about 50% of hospital managers who receive NGN 500,000 funds for pharmaceutical supplies and consumables deliver immunization services, also 50% of hospital managers who receive less than NGN 500,000 also deliver immunization services, while 50% of hospital managers who receive NGN 600,000-1M deliver immunization services. Again 50% of hospital managers who receive less than NGN 500,000 deliver other type of child services while 50% of hospital

managers who receive NGN 600,000-1M deliver also deliver other type of child healthcare. This is shown by the probability value of $Pr = 0.261$ of the 11.3333 chi square test value to show that there is significant relationship between type of child healthcare and government expenditure on pharmaceutical supplies and consumables

Table 11: Effect of Government Expenditure on Health care Delivery

Do you receive funds from the government for recurrent expenditure?	Do you think you have sufficient drugs, medication and consumables that will attend to the needs of your patients?	
	Yes	No
Yes	50.00%	25.00%
No	50.00%	75.00%

Pearson $\chi^2(1) = 0.6857$ $Pr = 0.408$

Source: Authors computation, 2025

Table 12: Effect of Government Expenditure on Health care Delivery

Do you receive funds from the government for recurrent expenditure?	Do you think you have sufficient staff in this hospital that will attend to the patients?	
	Yes	No
Yes	42.86%	40.00%
No	57.14%	60.00%

Pearson $\chi^2(1) = 0.0098$ $Pr = 0.921$

Source: Authors computation, 2025

Table 13: Effect of Government Expenditure on Health care Delivery

Do you receive funds from the government for recurrent expenditure?	Do you receive funds from the government for procuring for pharmaceutical supplies and other consumable?
	Yes
Yes	41.67%
No	58.33%

Source: Authors computation, 2025

Table 14: Effect of Government Expenditure on Health care Delivery

Do you receive funds from the government for capital expenditure?	Do you think you have sufficient hospital equipment that will attend to all your patients?	
	Yes	No
Yes	100.00%	50.00%
No	0.00%	50.00%

Pearson $\chi^2(1) = 4.0000$ $Pr = 0.046$

Source: Authors computation, 2025

Table 15: Effect of Government Expenditure on Health care Delivery

Indicate the type of child healthcare you deliver	Do you think you have sufficient drugs, medication and consumables that will attend to the needs of your patients?	
	Yes	No
Immunization services	25.00%	25.00%
General pediatric care	75.00%	75.00%

Pearson $\chi^2(1) = 0.0000$ Pr = 1.000

Source: Authors computation, 2025

Table 16: Effect of Government Expenditure on Health care Delivery

Indicate the type of child healthcare you deliver	Do you think you have sufficient staff in this hospital that will attend to the patients?	
	Yes	No
Immunization services	28.57%	20.00%
General pediatric care	71.43%	80.00%

Pearson $\chi^2(1) = 0.1143$ Pr = 0.735

Source: Authors computation, 2025

Table 17: Effect of Government Expenditure on Health care Delivery

Indicate the type of child healthcare you deliver	Do you receive funds from the government for procuring for pharmaceutical supplies and other consumable?	
	Yes	No
Immunization services	25.00%	
General pediatric care	75.00%	

Source: Authors computation, 2025

Table 18: Effect of Government Expenditure on Health care Delivery

Indicate the type of child healthcare you deliver	Do you think you have sufficient hospital equipment that will attend to all your patients?	
	Yes	No
Immunization services	33.33%	16.67%
General pediatric care	66.67%	83.33%

Pearson $\chi^2(1) = 0.4444$ Pr = 0.505

Source: Authors computation, 2025

Effect of Government Expenditure on Health care Delivery

Table 11-18 shows the person chi square results of the Impact of government recurrent and capital expenditure on child healthcare delivery and immunization services in Benue state. The dependent variables (type of child

care), is cross tabulated with the independent variables (Do you receive resources for recurrent expenditure such as salaries, How much do you receive on average for capital project). It shows the type of child healthcare delivered in the various hospitals under study and whether respondents received resources for recurrent expenditure such as salaries in delivering child healthcare. To examine each of the hypothesis between the dependent and the independent variable Tables 8–10 present Pearson chi-square results on the relationship between government expenditure and child healthcare delivery in Benue State.

Table 11 to 18 presents results from cross tabulations and the chi square test showing the impact of government expenditure on child healthcare delivery. In table 11 government recurrent expenditure is compared with having sufficient drugs for patients. In our model recurrent expenditure was one of the types of expenditure that we identified that government embark on, the table shows that 50% of hospital managers who received recurrent expenditure have sufficient drugs for patients while 25% do not have sufficient drugs for patients. For hospital managers who received funds for recurrent expenditure 50% of them had sufficient drugs for patients, while 25% of them do not have sufficient drugs. On the other hand, health facilities who do not have receive funds for recurrent expenditure, 50% of the facilities have sufficient drugs while 75% of them do not have sufficient drugs. This shows that government expenditure to a large extent helps in providing sufficient drugs for patients which facilitates more utilization of health care. Although the impact for government expenditure is huge as seen in the table the Pearson chi square test value shows 0.6857 with probability of $Pr = 0.408$, this reveals that the probability is not significant. The reason is that both respondents who receive government funds and those who do not are still able to have drugs in their facilities. In table 12 government recurrent expenditure is compared with having sufficient Staff in the hospital that attend to the needs of patients, about 42% of hospital managers who receive funds for recurrent expenditure had sufficient Staff attaining to the needs of patients in their facilities, while 40% do not have sufficient Staff for patients. For hospital managers who do not receive funds for recurrent expenditure 57% of them not have sufficient Staff for patients, while 60% of them do not have sufficient Staff for patients, this indicates that government expenditure is fundamental in health care delivery. The Pearson chi2 test shows 0.0098 with Probability of 0.921, and reveals the probability as not significant. This means that both respondents who receive government funds and those who do not are still able to have staff to attend to patients in their facilities.

In table 13, government recurrent expenditure is compared with receiving funds from the government for procurement of pharmaceutical supplies and other consumable. About 41.67% of health care providers who received funds from the government for recurrent expenditure had funds for pharmaceutical supplies and other consumables and 58.33% of health care providers do not receive funds for pharmaceutical supplies and other consumables also had funds for pharmaceutical supplies and other consumables. The table shows that both health facilities that receives funds and those that do not receive funds have funds for pharmaceutical supplies and other consumables. This also shows the important role government plays in health care delivery. In table 14 government capital expenditure is compared to having sufficient hospital equipment that attend to all patients, about 100% of hospital managers who receive funds for capital expenditure have sufficient hospital equipment for patients in their facilities. For hospital managers who received funds for capital expenditure 50% had sufficient hospital equipment for patients, while 50% do not have sufficient hospital equipment for patients. This shows that government capital expenditure is essential in health care delivery. The Pearson chi2 shows 4.0000 with Probability of 0.046 this further revealed the probability as significant. Table 15 investigates the type of child care delivered in comparison with government funds for procurement of pharmaceutical supplies and other consumables. 25% of hospital managers who deliver immunization services received funds from the government for procurement of pharmaceutical supplies and other consumables, also 75% of hospital managers who deliver general pediatric care also receive funds from the government for pharmaceutical supplies and other consumables. This indicates that government funding is essential in the health sector. Furthermore, Table 16 compares the type of health care delivered by hospital managers with having sufficient hospital equipment. 33.33% of hospital managers who deliver immunization services had sufficient hospital equipment for patients while 16.67% of hospital managers who deliver immunization services do not have sufficient hospital equipment. Again 66.67% of hospital managers who deliver general pediatric care had sufficient hospital equipment, while 83.33% of hospital managers who deliver general pediatric care do not have sufficient hospital equipment. The pearson chi test shows 0.4444 with probability of 0.505, this indicates the need for more funding on capital equipment even though health care providers are able to deliver care with insufficient equipment.

In contrast, capital expenditure shows no statistically significant relationship with the type of child healthcare delivered ($\chi^2 = 2.9167$; $p = 0.082$). Although all respondents across funding categories reported delivering specific services, the lack of variation and the p-value greater than 0.05 suggest that capital funding does not significantly influence service delivery type. Similarly, expenditure on pharmaceutical supplies and consumables is not significantly associated with the type of healthcare delivered ($\chi^2 = 11.3333$; $p = 0.261$). The near-even distribution of responses (approximately 50% across categories) indicates no clear pattern of influence.

Overall, the results suggest that while recurrent expenditure particularly salaries have a significant and positive impact on immunization service delivery, capital and consumable expenditures do not demonstrate a statistically significant effect.

DISCUSSION OF RESULTS

The objective was to estimate the effect of government recurrent and capital expenditure on child healthcare delivery in Benue State. Findings from the demand side of health care delivery from child healthcare delivery revealed low immunization completion rates and inadequate government-paid immunization services. From the analysis primary healthcare facilities had the highest usage (43%), followed by secondary (34%) and tertiary (22%) facilities. It revealed fever treatment was the most common reason for visits (29%), followed by immunization (26%). Significant number of children (58%) did not receive a full dose of immunization, though 95% intended to complete it, this substantial gap between intention and completion suggests the presence of barriers beyond caregiver willingness. Possible constraints include transportation costs, vaccine stock-outs, long waiting times, inadequate follow-up systems, competing household responsibilities, and limited access to healthcare facilities. These findings highlight the need for stronger health promotion campaigns, community mobilization, reminder systems, and improved vaccine availability to increase immunization completion rates.

Respondents who paid between NGN 5000-10,000 had the highest frequency (22%), only 11% benefited from government paid immunization services. 98% believed healthcare providers delivered the best services, but only 37% acknowledged government sponsorship. This study supports the work of Agyekum et al. (2023), who reported that despite government financing of the health sector, inadequate public funding continues to place financial burdens on households, limiting access to free healthcare services. This implies that increasing public spending alone is not going to improve health status of child care delivery unless certain factors like the rate of full immunization coverage, providing appropriate facilities that are child friendly and comfortable, having adequate health care providers, having quality and sufficient drugs, and having sufficient facilities in good condition that meet the needs of patients. Furthermore, the study reveals that only 11% of respondents benefited from government-paid immunization services, aligning with Akinyemi et al. (2022), who found that government-supported immunization programs in Nigeria remain inadequate due to financial and logistical constraints. This indicates limited financial protection for households and suggests that many caregivers continue to rely on out-of-pocket payments to access child healthcare services. Such reliance may reduce healthcare utilization among low-income households and contribute to inequalities in access to essential child health services. Government should therefore expand publicly funded immunization programmes, improve financing mechanisms for primary healthcare facilities, and strengthen monitoring systems to ensure that government resources effectively reach intended beneficiaries.

Findings from the supply side of healthcare delivery demonstrate that recurrent expenditure and pharmaceutical/consumable funding significantly influence maternal healthcare delivery in Benue State. However, capital expenditure does not show a significant impact on the type of maternal care provided. These results highlight the importance of sustained recurrent funding and adequate provision of medical supplies in improving maternal healthcare outcomes. The findings indicate that recurrent expenditure has a significant positive impact on child healthcare delivery, particularly in supporting immunization services in Benue State. However, capital expenditure and pharmaceutical/consumable funding do not show significant effects on the type of child healthcare services delivered. This highlights the critical role of recurrent funding (e.g., salaries) in sustaining essential child healthcare services like immunization, while capital investments and consumables may not directly influence service delivery outcomes in the same way.

The chi square findings should however be interpreted with caution. The relatively small sample size and low frequencies observed in some cells may have reduced the statistical power of the analysis and increased the possibility of type II error, where by a true association may not have been detected. Consequently, future studies should employ larger samples and more comprehensive analytical approaches to provide more robust evidence on the relationship between government health expenditure and child healthcare service delivery.

The chi-square analysis indicates that recurrent expenditure, measured through the payment of salaries, has a statistically significant association with immunization service delivery, whereas capital expenditure and expenditure on pharmaceutical supplies and consumables do not show statistically significant relationships. This finding suggests that recurrent expenditure plays a more immediate role in supporting routine immunization services because the availability of adequately remunerated healthcare workers directly influences the continuity, accessibility, and quality of immunization programmes. Immunization services require trained personnel to administer vaccines, maintain immunization schedules, educate caregivers, and monitor adverse events. Consequently, timely payment of salaries contributes to staff motivation, retention, and regular service delivery.

In contrast, capital expenditure is generally directed toward long-term investments such as construction of health facilities, procurement of medical equipment, and infrastructure development. Although these investments are essential for strengthening the health system, their effects on routine immunization service delivery may not be immediately observable. Similarly, expenditure on pharmaceutical supplies and consumables alone may not guarantee improved service delivery if other health system constraints, including inadequate staffing, weak logistics, irregular vaccine distribution, and poor supervision, persist. These findings therefore suggest that improvements in child healthcare delivery require a balanced combination of recurrent and capital investments rather than reliance on a single expenditure category. From a policy perspective, the significant role of recurrent expenditure implies that government budget allocations should prioritize adequate funding for salaries and other operational expenditures that directly support frontline health workers. While continued investment in health infrastructure remains necessary, policymakers should ensure that sufficient recurrent resources are available to maintain uninterrupted immunization services and improve the quality of child healthcare delivery. Strengthening recurrent financing would contribute to improved staff availability, enhanced motivation, and greater continuity of essential child health services.

CONCLUSION AND RECOMMENDATIONS

This study highlights the need for increased and better-balanced government expenditure on both capital and recurrent healthcare to improve child healthcare delivery in Benue State.

Although findings indicate that government expenditure has positively influenced service delivery quality and responsiveness, persistent gaps remain in immunization completion, affordability, and equitable access across regions. The central role of primary healthcare centers in healthcare service delivery underscores the importance of continued government expenditure at this level. Despite high reported patient satisfaction, deficiencies in infrastructure, service distribution, and financial accessibility persist.

Overall, while increased government expenditure is necessary, addressing broader systemic challenges is equally important to achieving effective, equitable, and sustainable child healthcare delivery.

Finally, arising from above, it is concluded that a look at the above analysis focus should not only be on government expenditure as some of these challenges could also affect child healthcare delivery in the state.

Recommendations

Based on the results obtained from the study, the study recommends the following;

- i. In addressing the challenges on childcare delivery, Policy recommendations should focus on strengthening primary and secondary healthcare services, improving immunization programs, and enhancing government support for health care financing in expanding infrastructure and maintaining quality standards as these will ensure sustained improvement in childcare delivery.

- ii. The study recommends a holistic approach involving healthcare financing, health system efficiency and increased education as this will be pivotal in achieving sustainable healthcare improvements and better health outcomes in child healthcare for the population.

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APPENDIX A

QUESTIONNAIRE (CHILD HEALTH CARE)

I am a postgraduate student in the Department of Economics Nasarawa State University Keffi. I am currently writing my dissertation on a topic titled “Effect of Government Expenditure on child HealthCare delivery in Benue State, Nigeria. I solicit your support in filling the questionnaire. Be rest assured that all information will be treated with utmost confidentiality. Thanks, in anticipation of your cooperation.

1. Age of child: 0-1 () () 1- 5 years() 6-11 years() 12 years and above()
2. Childs gender; male () female()
3. Type of healthcare facility: primary healthcare () secondary healthcare() tertiary healthcare()
4. Location of hospital: kwande () Markurdi()
5. Why are you here in this hospital? For immunization () to treat diarrhea () to treat fever () to treat typhoid and malaria () to treat breathing problems () others ()
6. Have you received the full dose of immunization your child is expected to take? Yes () no ()
7. If you have not do you intend to give your child full dose of immunization? Yes () no ()
8. How much do you spend for immunization in this hospital? Below NGN 500 () NGN 500 -1000 () NGN 1000-5000 () NGN 5000 – 10,000 () NGN 10,000 -20,000 () Above 20,000 ()
I pay nothing the government pays () insurance pays () others ()
9. Did you feel that your child’s medical needs were adequately addressed during their stay or treatment? Yes () no()
10. Did you receive timely attention in case of an emergency or urgent need? Yes() no()
11. Were the facilities (e.g., beds, equipment, and play areas) appropriate and child friendly? Yes() no()
12. How satisfied were you with the overall care and treatment provided to your child? Very satisfied () satisfied () not satisfied ()
13. Do you think that the government is sponsoring some of your hospital bills? Yes () no ()
14. Do you feel that the health care providers are giving you the best services? Yes () no ()
15. How would you rate the overall quality of care your child received in this? Excellent () good() fair() poor()
16. Do you think that the health facilities in this hospital are in good condition providing the best services for you? Yes () no ()
17. Do you think that there are sufficient health facilities in this hospital that will provide the best health services you need? Yes () no ()
18. Do you think that there are quality and sufficient drugs and medication that will give you the best services? Yes () no ()
19. How helpful was the hospital staff in providing emotional support or guidance during your child’s treatment? Helpful () not helpful()
20. Did you receive any counseling or guidance about caring for your child’s health at home after discharge? Yes() no()

(HEALTHCARE MANAGERS)

1. Gender: male () female()
2. Age:16-20 () 21-25 () 26-30 () 31-40 () 41-50 () 51-60 () above 60 ()
3. Type of healthcare facility: primary healthcare () secondary healthcare() tertiary healthcare()
4. Location of hospital: kwande () Markurdi ()
5. Do you deliver maternal healthcare? Yes () No ()

6. Indicate the type of maternal healthcare you deliver: Antenatal Care (ANC) () Skilled Birth () Postnatal Care() Others ()
7. Do you deliver child healthcare in this hospital? Yes () No ()
8. Indicate the type of child healthcare you deliver: Immunization Services () Respiratory tract infection (breathing problems () treatment of typhoid and malaria () treatment of other fever ()Growth Monitoring and Nutrition Counseling() to treat diarrhea ()general Pediatric Care() Others ()
9. Do you deliver HIV & AIDS care in this hospital? Yes () No() Others().
10. Indicate the type of HIV&AIDS care you offer: HIV Testing and Counseling () Antiretroviral Therapy (Art)() Opportunistic Infection Treatment() Prevention of Mother to Child Transmission () Others()
11. Do you receive direct allocation from the government to finance maternal, child and HIV and aids? Yes () no()
12. Do you receive funds from the government for recurrent expenditure? Yes () no()
13. How often do you receive funds for recurrent expenditure? Weekly () monthly ()quarterly() yearly () others()
14. How much do you receive for recurrent expenditure? less than NGN 500,000 () NGN 500,000 () NGN 6000- 1M () 1M -5M () 5M-10M () above 10M
15. Do you receive funds from the government for capital expenditure? Yes () no ()
16. How often do you for capital expenditure weekly () monthly ()quarterly() yearly () others()
17. How much do you receive for capital expenditure? less than NGN 500,000 () NGN 500,000 () NGN 6000- 1M () NGN 1M -5M () NGN 5M-10M () above NGN 10M
18. How much on the average do you receive for maternal care? less than NGN 500,000 () NGN 500,000 () NGN 6000- 1M () NGN 1M -5M () NGN 5M-10M () above NGN 10M
19. How often do you receive funds for maternal care from the government? weekly () monthly ()quarterly() yearly () others()
20. How much on the average do you receive for child health care? less than NGN 500,000 () NGN 500,000 () NGN 6000- 1M () 1M -5M () 5M-10M () above 10M
21. How often do you receive funds for child care from the government? Weekly () monthly ()quarterly() yearly () others()
22. How much on the average do you receive for HIV and AIDS care? less than NGN 500,000 () NGN 500,000 () NGN 6000- 1M () NGN1M -NGN5M () NGN5M-NGN10M () above 10M
23. How often do you receive funds for HIV and AIDS care from the government? Weekly () monthly ()quarterly() yearly () others()
24. Do you receive resources for recurrent expenditure such as salaries? Yes () no ()
25. How much do you receive for recurrent expenditure such as salaries? less than NGN 500,000 () NGN 500,000 () NGN 600,000- 1M () NGN1M -5M () NGN5M-10M () above NGN10M
26. Do you receive payment for salaries for maternal care? Yes () no()
27. How much do you receive on the average? less than NGN 500,000 () NGN 500,000 () NGN 6000- 1M () NGN1M -5M () NGN5M-10M () above 1NGN0M
28. Do you receive payment for salaries for childcare? Yes() no()
29. How much do you receive on the average? less than NGN 500,000 () NGN 500,000 () NGN 6000- 1M () NGN1M -5M () NGN5M-10M () above NGN10M
30. Do you receive payment from the government for salaries of staff working in the HIV and AIDS department? Yes() no()
31. How much do you receive on the average? less than NGN 500,000 () NGN 500,000 () NGN 6000- 1M () NGN1M -5M () NGN5M-10M () above NGN10M
32. Do you receive funds from the government for capital projects in your hospital? Yes () No ()

33. How much do you receive on the average for capital projects? less than NGN 500,000 () NGN 500,000 () NGN 6000- 1M () NGN1M -5M () NGN5M-10M () above NGN10M
34. Do you receive funds from the government for procuring for pharmaceutical supplies and other consumable? yes() no()
35. How much do you receive on the average? less than NGN 500,000 () NGN 500,000 () NGN 6000- 1M () NGN1M -5M () NGN5M-10M () above NGN10M
36. How often do you receive funds for pharmaceutical supplies and other consumables? Weekly () monthly () quarterly() yearly () others()
37. Do you think you have sufficient staff in this hospital that will attend to the patients? Yes () no ()
38. Do you think you have sufficient hospital equipment's that will attend to all your patients? Yes () no ()
39. Do you think you have sufficient drugs, medication and consumables that will attend to the needs of your patients? Yes () no ()
40. How do you rate the role that government is playing in this hospital in terms of funding health care? Very important () important () not important ()
41. Who pays more for healthcare in this hospital? The government () the patients () health insurance () NGOs () Philanthropist () others ()

