Accounting 11 (2025) 271–278

Contents lists available at GrowingScience

Accounting

homepage: www.GrowingScience.com/ac/ac.html

Effect of health expenditure on maternal and child health in Nigeria

Abiola Abosede Solanke[a*], Olufisayo Olayinka Akinlo[b], Olumuyiwa Tolulope Apanisile[b] and Rafiu Oyesola Salawu[a]

[a]*The Federal Polytechnic, Bida, Niger State, Nigeria*
[b]*Obafemi Awolowo University, Ile – Ife, Nigeria*

C H R O N I C L E

Article history:
Received November 23, 2024
Received in revised format
March 20 2025
Accepted May 24 2025
Available online
May 24 2025

Keywords:
Health expenditure
Maternal and child health
Generalize method of moments
Nigeria

A B S T R A C T

The study investigated how public funds promote maternal and child health indicators in Nigeria from 1978 to 2023. The study adopted a generalized method of moments (GMM) in the analysis. The empirical results revealed that health expenditure positively and significantly impacted maternal and child health in Nigeria. The study concluded and recommended that the government should focus on increasing allocation to the health sector year in and year out to improve maternal and child health rather than relying on international funding, as an increase in health expenditure reduces the maternal and child mortality rate in Nigeria.

© 2025 by the authors; licensee Growing Science, Canada.

1. Introduction

Adequate health for women and children is beneficial as it leads to a long and fulfilled life, allowing the woman and the child to attain meaningful development in life. Maternal and Child Health (MCH) is the health status of pregnant women or women who recently delivered newborns and the newborns' health status (Who 2023). The report showed over 600,000 maternal deaths occurred in Nigeria between 2005 and 2015. In 2015 alone, over 800 maternal deaths, to 100,000 per live birth, leading to 58,000 maternal deaths estimated (Who 2020). This number is unacceptably high. However, studies showed that the lifetime threat of maternal death for women and children in developing countries accounted for 1 in 56 women. At the same time, one in every 37 women is dying in Sub-Saharan Africa due to pregnancy-related issues, with 15,000 children under five dying every day (Who 2020).

Despite the growing health challenges in developing countries, expenditure on the health sector has remained less effective, with continued adverse effects on the general population's health status. For example, in 2015, the number of maternal deaths was 1700 in 46 developing countries, leading to more than 12 maternal and child health deaths per 100,000 live births (Who et al. 2022). Poor maternal and child health is a problem because it causes many deaths and disabilities among women and children.

Health expenditure in Nigeria's health sector has remained below the African Union (AU) recommendation, with more implications for the country's health delivery system. There is clear evidence that the bulk of the money allocated to the health sector is recurrent at a detriment to capital allocation that sees infrastructural investment in health. Health investment generally increased considerably, from 3 percent of the Gross Domestic Product (GDP) in 1948 to 5 percent in 1995 and 6 percent in 2013 (World Bank Group 2016). However, the national health budget does not meet national aspirations and expectations for quality health system delivery, making poor maternal and child health a challenging problem.

* Corresponding author.
E-mail address: mosunmolal1974@gmail.com (A. A. Solanke)

ISSN 2369-7407 (Online) - ISSN 2369-7393 (Print)

© 2025 by the authors; licensee Growing Science, Canada.
doi: 10.5267/j.ac.2025.5.005

In Nigeria, yearly maternal and child health services are financed through public spending. Therefore, the human and infrastructure resources needed to provide quality maternal and child health services are public funds allocated (Micah et al. 2019). As a result, in 2000, Nigeria's maternal mortality ratio fell gradually by 34 per cent to 342 deaths to 223 deaths per 100,000 live births in 2020, reduced by a lower margin, (Who et al. 2022). Nigeria remains a significant contributor to global health expenditure statistics. However, the increasing rate of maternal and child health death through the low allocation to the health sector called for re-examining the established relationship between the health variable outcomes. This study will contribute to the literature by looking at the effect of health expenditure on maternal and child health in Nigeria with recent changes and the adding of data in recent times. Apart from the introduction, the paper is divided as follows: Reviews of related literature, methodology, results, findings, discussion and policy recommendations.

2. Literature Review

2.1 Theoretical issues

This study underpins resource theory allocation, the theoretical perspective that deals with the government's distribution of financial resources through the budget process to achieve financial goals. Moreover, Peteraf, and Barney (2023) define resource allocation as a process whereby the government determines how to allocate or apportion its resources among the various projects it aims to carry out. Kurt (2018) opines that sustainability and economic development require the effective allocation of resources. This assertion is true because the government needs to allocate a budget for many competing activities. After all, government allocations are made based on the needs of each sector. Nwakanma and Nnamdi (2013) Process allocation has several economic, political, social, and technical aspects.

The theory is also relevant in the budget process since the government has many things to provide for citizens among the scarce resources Bower (1970). The government makes decisions on allocating resources through budget allocation to the various sectors. Furthermore, the theory provided a theoretical lens for the study. According to Nwakanma and Nnamdi (2013), the theory stresses that progress in human societies, particularly sustainability and economic development, is influenced by the effective allocation of resources. Other researchers Riman and Akpan (2012) agreed with this postulation. However, in Nigeria, the 'padding' of budgets and the lack of transparency in budget implementation often reduce the positive impact of amounts budgeted and released for health financing.

2.2 Empirical Literature

Novignon and Lawanson (2017) employed panel data from 45 sub-Saharan African countries between 1995 and 2011 to evaluate the relationship between child health outcomes and health expenditure. Findings revealed a positive and significant relationship between the two variables. It means budget allocation is crucial for improving child health. Regarding the focus of the current study, the prior empirical studies used cross-sectional data, while the recent study used time series data.

In contrast, Van den Heuvel and Olaroiu (2017) and Novignon and Lawanson (2017) used a longitudinal research design, which aligns with the current study. Much recently, regarding health aid and health outcomes, Bazuaye and Okonofua (2013) proved that maternal mortality rate is significantly related to health expenditure. The findings show poor quality of government, accountability, and resource allocation for health. In addition, it shows a marked difference between the developed and developing countries regarding health issues. However, this contradicts previous studies that have evidence of empirical review.

In an earlier study, Eneji et al. (2013) found that public health expenditure significantly influences the infant mortality rate. Hafez (2018) opined that the non-availability of data on available healthcare resources makes it hard for the sector to perform efficiently and effectively despite national budget allocation to the health sector. However, a descriptive review conforms to Bazuaye and Okonofua (2013) Mugo et al. (2015) research. Nwankwo (2018) study revealed that public health expenditure is essential in reducing the high maternal mortality rate. These findings mean that increased health expenditure will decrease maternal mortality and improve citizens' health.

Using regression analyses Kiross et al. (2020) result showed that the impact of the national budget on health is a crucial key to determining the citizen's health outcomes because it has contributed to the country's health progress towards reducing maternal morbidity rates. Therefore, this study suggested that an annual increment of the health budget is significant in boosting health service delivery. Hence, the study contributed to the general debate on how health expenditure affects health indicators in Nigeria but is limited to infant mortality rate and number of neonatal deaths. Thus, the reviewed studies highlighted several factors associated with expenditure on maternal and child health indicators in Africa.

In a later study, Akinlo and Sulola (2019) showed that total health expenditure explains the improvement in under-five and infant mortality at a higher percentage, showing a strong relationship between health expenditure, under-five, and infant mortality rate. However, this methodology contradicts others. Therefore, the study focused only on sub-Saharan African countries, which might not generalize conclusions. However, it also means health expenditure does not explain the improvement of the two variables, which needs further investigation with another variable that our study will consider.

In addition, Riman and Akpan (2012) revealed household income and out-of-pocket payments continue to affect the health status of the populace negatively. This assertion shows high infant mortality and morbidity rates were associated with high-income inequality. It's in tune with the study of (Hafez, 2018). The criticism is that the current is empirical while the previous is pure review; hence it needs further investigation.

In contrast, Mojekwu and Ibekwe (2012), Bayero et al. (2022), Aziz et al. (2021) showed evidence of the positive impact of health expenditure on maternal mortality. Uzochukwu et al. (2015) and Envuladu and Onwujekwe (2015) study concluded there is a need to review the health system finances so that every Nigerian can access universal health coverage. The study objective aligns with this study, using a different methodology and analysis.

Several studies have focused on contraceptive prevalence rate, life expectancy and under5 mortality. Such as Ope (2020), Nicholas et al. (2016), Rana et al. (2018) and Razakamanana et al. (2020) on health outcomes. Ogu and Ephraim-Emmanuel (2018) focused on government expenditure, economic productivity and the prevention of maternal mortality and found that maternal mortality was not as high as expected, with a high increase per gross domestic product

However, health investment plays a crucial role in the maternal mortality decrease in the country; this makes health resources an essential index for health improvement service delivery. Therefore, this study concluded that the Nigerian government should adhere to the 2011 Abuja declaration by WHO that 15% of Nigeria's annual national budget should be expended on the health sector so that health coverage can be universal for all. Ogunjimi and Adebayo (2018) study proves that Nigeria has a substantial relationship between national budget allocation and health and health outcomes. In Nigeria, empirical studies on the relationship between budget allocation and maternal and child health are evolving. Previous studies have not adequately explored the effect of various components of health expenditures on maternal and child health in the context of Nigeria. To the best of the authors' knowledge, no study has examined health expenditure and maternal and child health relationship using times series data and analyzing data with generalized method of moments. Therefore, it requires more empirical studies on the effect of health expenditure on maternal and child health in Nigeria. It is crucial considering the high maternal mortality rate in Nigeria. It also explains the rationale for our objective.

3. Methodology

3.1 Model specification

This model addressed the objective of the study. The dependent variable in equation (1) is maternal and child health (infant mortality and maternal mortality rate). Independent variables are budget allocation (Health expenditure), and three control variables are INF and SCH. ENR and GDP.

$$MCH_{it} = \beta_1 MCH_{it-1} + \beta_2 Health_t + \beta_3 GDP_t + \beta_4 Inf + \beta_5 Sch.Enr_t + \mathcal{E}_t \quad (1)$$

where (GDP) Gross domestic product and (INF) inflation and (Sch. Enr) School Enrolment are the control variables in the model

3.2 Design

The study adopted descriptive research to find the relationship between the independent and dependent variables, data was gathered quantitatively to obtain their relationship empirically.

3.3 Data

The study sourced secondary data from 1978 to 2019 from federal government documents and world development indicators. For example, data on health expenditure were sourced from the CBN statistical bulletin. Macroeconomic data such as inflation, human development, and Gross domestic product are also from the World Development Indicator published by the World Bank. In addition, data relating to other relevant macroeconomic variables for this study, such as secondary school enrolment, Gross domestic product at current local currency (Nominal), and inflation at consumer price index, were extracted from the world development indicators.

3.4 Measurement of variable

The study adopted the dominant proxy of health expenditure to the health sector in the literature to ensure that the analysis performed is comparable with findings in existing studies. All existing studies (Novignon et al. 2017; Akinlo et al., 2019; Danladi, 2021; Ndaguba et al. 2021; Musa, 2022) seek to ascertain the effects of public finance on health status across developing countries. 'Health expenditure' was widely used as the amount spent on the health sector. It's reasoned that the amount expended on public health could not be inversely related to the amount budgeted.

4. Result and Discussion

Table 1
Descriptive statistics

Statistics	Health	IMR	MMR	SENR	LGDP	LINF
Mean	73.3048	2.0016	3.0401	31.7121	12.8081	1.1524
Median	5.2700	2.0388	3.0767	28.8314	13.0607	1.0756
Maximum	462.1100	2.1163	3.0792	56.1799	14.1106	1.8623
Minimum	0.0800	1.7383	2.9624	9.0292	10.7016	0.7314
Std. Dev	114.2476	0.1034	0.0458	10.9441	1.06216	0.2807
Skewness	1.6321	-0.7321	-0.5393	0.2218	-0.4108	1.0178
Kurtosis	4.8459	2.5172	1.5129	2.2382	1.7709	3.3456
Jarque-Bera	26.9522	4.5556	6.4682	1.4569	4.0981	8.1704
Probability	0.0000	0.1025	0.0393	0.4826	0.1289	0.0168
Sum	3418.021	92.0719	139.8435	1427.048	576.4034	53.0095
Sum Sq. Dev	587362.9	0.4815	0.094547	5270.061	49.6391	3.5459
Observation	46	46	46	46	46	46

Notes: Health; expenditure IMR; infant mortality rate MMR; maternal mortality rate; SENR: school Enrolment; LGDP; log of the gross domestic product; LINF; the log of inflation
Source: Author's Computation, 2024.

Table 1 presents the descriptive statistics of the variables across the studied period. As shown in the table, the statistical characteristics of each research variable, such as the mean, median, maximum, minimum, standard deviation, and the measures of skewness and kurtosis, were presented in addition to the Jaque-Bera statistics. For instance, the mean infant mortality rate was 200 infant deaths per 1000 live births (IMR=2.0016), reflecting a high infant mortality rate during the studied period. Likewise, the average maternal mortality in the studied period was 304 maternal deaths per 100,000 live births (MMR=3.0401), indicating a relatively high level of maternal deaths over the studied period.

However, the statistical distribution revealed that both variables were negatively skewed: infant mortality rate and maternal mortality rate. The mean value of the gross domestic product was 12.8081 billion Naira, the average inflation rate in the same period was 11.5 per cent, while the middle school enrolment was 31.7121 pupils. The standard deviations of each variable examined were low, indicating that the measures of central tendency were valid and reliable. However, Health expenditure and the three control variables were positively skewed compared to maternal and child health standards. The table further shows that the mean of health expenditure was 73.3048 billion Naira. The standard deviations of each variable examined were low, indicating that the measures of central tendency were valid and reliable. However, budget allocation was positively skewed compared to maternal and child health standards.

Table 2
Correlation analysis

VARIABLES	HEALTH	IMR	MMR	SENR	LGDP	LINF
HEALTH	1.0000					
	-					
	-					
IMR	-0.6688	1.0000				
t-Statistics	-4.5878	-				
Probability	0.0000	-				
MMR	-0.7966	0.8961	1.0000			
t-Statistic	-8.7399	13.3887	-			
Probability	0.0000	0.0000	-			
SENR	0.6431	-0.8993	-8.8854	1.0000		
t-Statistics	5.5699	-13.6410	-12.6326	-		
Probability	0.0000	0.0000	0.0000	-		
LGDP	0.5965	-8.8249	-0.8045	0.6814	1.0000	
t-Statistic	4.9299	-9.6794	-8.9855	6.1758	-	
Probability	0.0000	0.0000	0.0000	0.0000	-	
LINF	-0.2293	0.3173	0.30617	-0.2801	-0.3130	1.0000
t-Statistic	-1.5625	2.2196	2.1334	-1.9353	-2.1863	-
Probability	0.1253	0.0316	0.0385	0.0594	0.0342	-

Source: Author's Computation, 2024.

Table 2 shows that the three control variables included in the model, namely, gross domestic product, inflation rate, and school enrolment, also revealed different natures correlated with maternal and child health. For example, the gross domestic product is negatively associated with maternal mortality and infant mortality rate; this shows that an increase in Gross domestic product may also lead to a high death rate in maternal mortality rate and infant mortality rate. Similarly, inflation was negatively correlated with school enrolment and the log of gross domestic product. while showing positive correlations with infant mortality rate, and maternal mortality rate. Positive correlation shows that if there is a decrease in LGDP, the death rate of IMR and MMR will also decrease.

The results of the correlation analysis equally show that health expenditure on maternal mortality rate was negatively correlated with maternal mortality. There is a similar pattern in the relationships between gross domestic product and infant mortality. The correlations between gross domestic product and other maternal and child health measures were positive. School enrolment analysis showed that it negatively correlated with infant and maternal mortality. The results of the correlation analysis equally show that health expenditure for maternal and child health was negatively correlated with maternal mortality rate and infant mortality rate.

Table 3
Nature of Stationarity (Unit Root Test with trend and intercept)

	Augmented Dickey-Fuller			Philip-Peron		
Variable	**Levels**	**1st difference**	**Remarks**	**Levels**	**1st difference**	**Remarks**
Health (-1)	-8.3151*	-	I(O)	-2.9281**	-	I(O)
IMR (-1)	1.6802	-3.5966*	I(1)	0.04600	-5.4571*	I(1)
LGDP (-1)	-5.2073*	-	I(O)	-4.2915*	-	I(O)
LINF	-4.1871**	-	I(O)	-3.6608*	-	I(O)
MMR	-0.7390	-7.8937*	I(1)	-0.7282	-7.7790*	I(1)
SCH ENR	-1.6358	-7.0519*	I(1)	1.6441	-7.0580*	I(1)

Notes: *IMR; infant mortality rate; MMR; maternal mortality rate; health; expenditure; LGDP; log of gross domestic product; LINF; log of inflation; SCH ENR; school enrolment*
Source: Author's Computation, 2024

Table 3 presents the results of the nature of stationarity in the estimation process. It was necessary because non-stationarity is one of the significant problems of time series data. Thus, examining non-stationarity in the estimation process was essential to avoid spurious regression analysis. For this purpose, the Augmented Dickey-Fuller test (ADF) and Phillip-Perron (PP) test were carried out. As shown in Table 3, the unit root test results confirm that both ADF and PP tests identified the nature of stationarity. One variable appeared stationary: maternal mortality rate. This result reflects that the variables are in their first difference. Hence, they are not equally stationary in their levels.

Generally, results show that the variables are combinations of classes and different variables. The next step is to determine the existence of a long-run relationship among the variables. To achieve this, the study employs the bound testing approach to cointegration because of the mixed order of integration of the variables as presented in Table 3 of the unit root test results.

Table 4
Co-integration
(a) Infant Mortality Rate

Test Statistics	**Value**	**K**
F-statistics	4.184143	4
Significance	10 Bound	11 Bound
10%	2.45	**3.52**
5%	2.86	4.01
2.5%	3.25	4.49
1%	3.74	5.06

Source: Author's Computation, 2024.

(a) Maternal Mortality Rate

Test Statistics	**Value**	**K**
F-statistic	2.506211	4
Critical Value Bounds		
Significance	10 Bound	11 Bound
10%	2.45	3.52
5%	2.86	4.01
2.5%	3.25	4.49
1%	3.74	5.06

Source: Author's Computation, 2024.

The result of the long-run test is presented in Table 4. The result shows that four variables are included in the test (K = 4). The rule of thumb is that the F-statistic value must be above the upper bound at all levels of significance. The result in Table 4 shows that the F-statistic (4.184143) is greater than the upper bound at a 5 per cent level of significance. This implies that the variables are cointegrated and we reject the null hypothesis of no cointegration and accept the alternative hypothesis. The study concludes that the long-run relationship exists among the variables at 5 percent level of significance. As shown in Table 5, Model 1 revealed that any increase in health expenditure on maternal and child health would lead to minimal change in infant mortality rate though the difference was positive. Furthermore, model diagnosis through the coefficient of determination confirms that the regression model explained a significant proportion of the variation in infant mortality rate (R^2 = .8961). On the other hand, a unit change in the gross domestic product will cause a significant reduction in infant mortality (β = -0.0001, $p<0.01$). The effects of inflation and school enrolment on infant mortality showed that both variables revealed positive results. Model diagnosis through the coefficient of determination confirms that the regression model explained a significant proportion of the variation in infant mortality (R^2 = 0.8961). Model 2 revealed that a unit change in

budget allocation to MCH unexpectedly caused increased maternal mortality. Similarly, a unit change in inflation caused maternal mortality to increase by 0.0013 deaths, which was insignificant based on the test statistic.

Table 5
Effect of Budgetary Allocation on Maternal and Child Health

Variable	MODEL 1 IMR	MODEL 2 MMR
IMR (-1)	0.0001* (0.0101)	-
MMR (-1)	-	0.8244* (0.0000)
Health	0.0001* (0.0101)	0.0001* (0.0000)
LGDP	-0.0443 (0.0000)	-0.0058 (0.0526)
LINF	0.0127 (0.5229)	0.0013 (0.7601)
SER	-0.0069 (0.0000)	-0.0005 (0.0324)
R. Squared	0.8961	0.9753
Adjusted R^2	0.8857	0.9714
J-Statistics	8.8564	249.7181
Probability	0.0000	0.0000
Ins. Rank	21	21

Source: Author's Computation, 2024.

In contrast, unit changes in gross domestic product and school enrolment will lead to a reduction in the rate of maternal mortality by -0.0443 and -0.0058 units, respectively, for the gross domestic product (β = -0.0443, $p<0.01$) and school enrolment (β = -0.0058, $p<0.05$). Similarly, results showed that the model accurately predicted maternal mortality rate (R^2 = 0.9753). In different countries, the literature established by Riman et al. (2012) and Van den Heuvel (2017) that healthcare financing directly impacts health outcomes, including maternal and child health outcomes. Most countries have thus enhanced public investment in healthcare delivery to achieve improved health status by allocating more funds to the health sector. This study, therefore, investigated the significance of budget allocation to health on maternal, and child health in Nigeria. As a result, budget allocation significantly affected Nigeria's maternal and child health. The result is consistent with findings in many existing studies Oladosu et al. (2022), Sunday and Adeleye (2017), Nwankwo (2019) and Sango-Coker and Murad (2018). Nevertheless, it agreed with a Nigerian study (Nwankwo, 2018), whose findings revealed that increasing budget allocation to health through improving public health expenditure is crucial to reducing the incidences of maternal mortality in the country. In addition, in health institutions, qualified health personnel are in short supply (Nicholas et al., 2016). Notwithstanding the importance of budget allocation to health, how the budget is implemented and controlled dramatically influences the health sector's performance. The key challenges to effective health budget implementation in Nigeria are usually a lack of value for money regarding the budget items (Lawyer, 2013). A good example is a recent discovery by a Senator that the amount of ₦82 billion was to purchase mosquito nets at the expense of more essential health needs. Another challenge that usually undermines the budget process is legislative 'padding,' which refers to the inclusion of spurious items into the budget. This practice hinders budget transparency (Cimpoeru and Cimpoeru 2015) and is lawless' (Olaoye, 2014). With the continuation of such practice, it is not likely that the government will transparently implement the budget. Maternal and child health is an essential aspect of public health. However, it gained prominence in public health discourses in developing countries because of the enormous maternal and child mortality loss to individuals, families, and societies, particularly in sub-Saharan Africa. To address the situation, the African Union, after a robust deliberation on the poor state of maternal and child health in Africa, resolved that all African countries should increase their public health expenditure. And ensure that at least fifteen per cent of their annual budgets should be for health. The AU took the position because health delivery is through Nigeria's public finance. The more funds allocated to health, the higher the likelihood that more funds will be available to finance maternal and child health delivery, which may improve some of the current poor maternal and child health indicators. This finding agrees with the work of Novignon et al. (2017), Bazuaye (2013), Akinlo, et al. (2019) but disagrees with the findings of Kiross et al. (2020). Increases in health budget allocation are assumed to impact the delivery of maternal and child health outcomes significantly. This result aligns with the study of Riman et al. (2012) and Nwankwo (2018). Unfortunately, many civil society organizations hold on to this assumption to constantly press for increased budget allocation to the health sector. But the reality in most developing countries, including Nigeria, is that despite increased budget allocation to health, most indicators of public health outcomes, such as maternal and infant mortality are yet to improve substantially. The result is consistent with the findings of Nicholas et al. (2016), and Solanke and Rahman (2018). In the case of Nigeria, budget allocation to health is still low compared to more developed countries.

This study investigates the interrelationships between Nigeria's budget allocation and maternal and child health. The ultimate goal is to provide additional information on how public health financing can improve maternal and child health outcomes. Specifically, the study evaluated budget allocation to maternal and child health in the studied period. This study used secondary data from the World Development Indicators and Statistical Bulletin of the Central Bank of Nigeria to investigate the ideas. In addition, our study specified Suitable econometric models to examine the independent effect on the dependent variables. The study used econometric models using the General Moment of Method. At the same time, the

results use both descriptive and inferential statistical methods. The study findings showed that budget allocation influenced Nigeria's maternal and child health outcomes. Results in this study have thus contributed to promoting public sector accounting research in Nigeria.

5. Conclusion and policy implication

The study has shed more light on variables that affect health sector performance in the country through analysis of the individual and combined effects of budget allocation. The study concluded that budget allocations are central to improving Nigeria's maternal and child health. However, further research on health expenditure and maternal and child health analysis is needed to better understand the relationship complexity and dynamic interactions between health expenditure and maternal and child health. Future studies in this direction should endeavour to adopt a mixed-method research approach.

The findings suggest the Government should focus on how to increase budget allocation to the health sector year in and year out to combat maternal and child health rather than relying on international funding, as an increase in budget allocation reduces the maternal and child health death rate in the country. The increasing population of Nigeria, particularly young people, puts enormous pressure on healthcare delivery in the country, which public health expenditure may not be sufficient to address. Therefore, it suggested that more efforts to increase public-private partnerships improve health delivery in the country. Such alliances may enhance the availability of essential health equipment, drugs, and services.

Finally, the Nigerian Government needs to ensure that 15% of the national budget is allocated to health to achieve universal health coverage for citizens.

Declaration of Conflicting Interests

The authors declared they have no conflicting interests concerning the research, authorship and/or publication of this article.

Funding

The authors received no financial support for the research, authorship and/or publication of this article.

References

Akinlo, A. E., & Sulola, A. O. (2019). Health care expenditure and infant mortality in sub-Saharan Africa. *Journal of Policy Modeling*, *41*(1), 168-178

Aziz, N., He, J., Sarker, T., & Sui, H. (2021). Exploring the role of health expenditure and maternal mortality in South Asian countries: an approach towards shaping better health policy. *International journal of environmental research and public health*, *18*(21), 11514.

Bazuaye, A., & Okonofua, F. E. (2013). Tackling maternal mortality in Africa after 2015: what should the priorities be? La lutte contre la mortalité maternelle en Afrique après 2015: quelles devraient être les priorités?. *African Journal of Reproductive Health*, *17*(2), 9-17.

Bayero, S. A., Safiyanu, B. D., & Gurin, I. M. (2022). The Impact of Health Expenditure on Maternal and Child Mortality in African countries. *International Review of Social Sciences Research*, *2*(3), 20-36.

Bower, J. L. (1970). Managing the Resource Allocation Process. Boston. *MA: Harvard Business School*.

Cimpoeru, M. V., & Cimpoeru, V. (2015). Budgetary transparency–an improving factor for corruption control and economic performance. *Procedia Economics and Finance*, *27*, 579-586.

Danladi, G. P. (2021). An empirical analysis of the impact of government health expenditures on the performance of the health sector in Nigeria. *Innovation Journal of Social Sciences and Economic Review*, *3*(3), 35-44.

Eneji, M. A., Dickson, V. J., & Onabe, B. J. (2013). Health care expenditure, health status and national productivity in Nigeria (1999-2012).

Hafez, R. (2018). *Nigeria health financing system assessment*. World Bank.

Kiross, G. T., Chojenta, C., Barker, D., & Loxton, D. (2020). The effects of health expenditure on infant mortality in sub-Saharan Africa: evidence from panel data analysis. *Health economics review*, *10*, 1-9.

Kurt, E. (2018). The 5 best methods of successful resource allocation. Saviom.com/blog/5-best methods successful-resourcese-allocation-2/

Lawyer, C. O. (2013). Budget preparation and implementation in the Nigerian public sector. *Research Journal of finance and accounting*, *4*(16), 50-54.

Micah, A. E., Chen, C. S., Zlavog, B. S., Hashimi, G., Chapin, A., & Dieleman, J. L. (2019). Trends and drivers of government health spending in sub-Saharan Africa, 1995–2015. *BMJ global health*, *4*(1), e001159.

Mugo, N., Zwi, A. B., Botfield, J. R., & Steiner, C. (2015). Maternal and child health in South Sudan: priorities for the Post-2015 agenda. *Sage open*, *5*(2), 2158244015581190.

Mojekwu, J. N., & Ibekwe, U. (2012). Maternal mortality in Nigeria: Examination of intervention methods. *International Journal of Humanities and Social Science*, *2*(20), 135-149.

Musa, N. (2022). Analysis of the impact of health expenditures on Health Status in Nigeria. *Journal of Applied and Theoretical Social Sciences*, *4*(1), 76-88.

Ndaguba, E. A., & Hlotywa, A. (2021). Public health expenditure and economic development: The case of South Africa between 1996 and 2016. *Cogent Economics & Finance*, *9*(1), 1905932.

Nicholas, A., Edward, N. A., & Bernardin, S. (2016). The effect of health expenditure on selected maternal and child health outcomes in Sub-Saharan Africa. *International Journal of Social Economics*, *43*(12), 1386-1399.
Novignon, J., & Lawanson, A. O. (2017). Health expenditure and child health outcomes in Sub-Saharan Africa. *African Review of Economics and Finance*, *9*(1), 96-121.
Nwankwo, C. E. (2018). The effects of public health spending on maternal mortality in Nigeria. *Journal of Economics and Sustainable*, *9*(20), 2222-2855.
Nwakanma, C. P., & Nnamdi, K. C. (2013). Health care Financing and Health Profile in West African Countries. *First draft Unpublished Paper*.
Olaoye, F. O. (2014). An exploratory evaluation of legislative lawlessness in the Nigerian budget process. *Singaporean Journal of Business, Economics and Management Studies*, *3*(2), 39-47.
Oladosu, A. O., Chanimbe, T., & Anaduaka, U. S. (2022). Effect of public health expenditure on health outcomes in Nigeria and Ghana. *Health Policy OPEN*, *3*, 100072.
Ogu, R. N., & Ephraim-Emmanuel, B. C. (2018). Nigerian government expenditure, economic productivity and the prevention of maternal mortality: A call to action. *J Econ Manage Trade*, *21*, 1-9.
Ogunjimi, J. (2019). Health expenditure, health outcomes and economic growth in Nigeria. *Health Outcomes and Economic Growth in Nigeria (November 1, 2019)*.
Ope, B. W. (2020). Reducing maternal mortality in Nigeria: addressing maternal health services' perception and experience. *Journal of Global Health Reports*, *4*, e2020028.
Peteraf, M. A., & Barney, J. B. (2003). Unraveling the resource-based tangle. *Managerial and decision economics*, *24*(4), 309-323.
Rana, R. H., Alam, K., & Gow, J. (2018). Health expenditure, child and maternal mortality nexus: a comparative global analysis. *BMC international health and human rights*, *18*, 1-15.
Razakamanana, M. V., Andrianatoandro, V. T., & Ramiandrisoa, T. O. (2023). Do public health expenditures affect maternal and child health in Madagascar?. *Health Economics Review*, *13*(1), 47.
Riman, H. B., & Akpan, E. S. (2012). Healthcare financing and health outcomes in Nigeria: A state level study using multivariate analysis.
Sunday, O., & Adeleye, B. (2017). An empirical analysis of public health expenditure on life expectancy: Evidence from Nigeria. *British Journal of Economics, Management & Trade*, *17*(4), 1-17.
Sango-Coker, E. Y., & Bein, M. A. (2018). The impact of healthcare spending on life expectancy: evidence from selected West African countries. *African journal of reproductive health*, *22*(4), 64-71.
Solanke, B. L., & Rahman, S. A. (2018). Multilevel analysis of factors associated with assistance during delivery in rural Nigeria: implications for reducing rural-urban inequity in skilled care at delivery. *BMC*
Uzochukwu, B. S., Ughasoro, M. D., Etiaba, E. A., Okwuosa, C., Envuladu, E., & Onwujekwe, O. E. (2015). Health care financing in Nigeria: Implications for achieving universal health coverage. *Nigerian journal of clinical practice*, *18*(4), 437-444.
Van den Heuvel, W. J., & Olaroiu, M. (2017). How important are health care expenditures for life expectancy? A comparative, European analysis. *Journal of the American Medical Directors Association*, *18*(3), 276-e9.
World Health Organization. (2023). *Trends in maternal mortality 2000 to 2020: estimates by WHO, UNICEF, UNFPA, World Bank Group and UNDESA/Population Division*. World Health Organization.
WHO. (2020). Maternal health in Nigeria: generating information for action. Accessed on June 14, 2020, from https://www.who.int/reproductivehealth
World Bank Group. (2016). *World development report 2016: Digital dividends*. World Bank Publications.

© 2025 by the authors; licensee Growing Science, Canada. This is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC-BY) license (http://creativecommons.org/licenses/by/4.0/).