IMPACT OF GOVERNMENT HEALTH EXPENDITURE ON HUMAN DEVELOPMENT IN NIGERIA

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Abstract

This paper is an attempt to empirically examine the impact of health expenditure on human development in Nigeria. Time-series data were used and the study employed the Autoregressive Distributed Lagged (ARDL) and Error Correction Model (ECM) to estimate and analyze the long and short-run impact of government health expenditure on human development in Nigeria. From the ARDL long-run result, it was revealed that government health expenditure has a positive impact on human development in Nigeria but the coefficients show that the impact was statistically insignificant. While ECM results revealed that all the independent variables were positively related to human development in Nigeria except the government total health expenditure which is negatively related to human development in Nigeria. Finally, based on the probability of the results all independent variables were statistically significant in explaining the variation in human development in Nigeria. This implies that government health recurrent expenditure in Nigeria and government health capital expenditure in Nigeria has a positive and significant impact on human development in Nigeria in the short-run. Therefore, the study recommends that the government through budget planning, implementation, and monitoring should ensure that health care funds are properly and fully utilized in Nigeria to improve the quality of health care expenditure for human development in Nigeria.

Keywords: Health Expenditure, Capital, Recurrent, Human Development

Introduction

A good health care system is a primary and essential part of human needs in any country. According to the World Health Organization (WHO, 2016), fifty percent of economic growth gaps between developed and developing countries are attributable to ill-health and low life expectancy. Developed countries spend a high proportion of their Gross Domestic Product (GDP) on health care because they believe that their resident health can serve as a major driver for economic activities and development. Health just like education plays a vital role in the development of human capital (Aigbedion, Anyanwu & Aiyedogbon, 2015). Thus, for the manpower and resources of a nation to be utilized to harness other resources of a nation, the population must be healthy. In an effort to increase their share of public resources spent on health, In April 2001, heads of state of African Union countries met in Abuja and pledged to prioritise the development of the health sector by allocating at least 15 percent of their annual budgets to improve the sector as an increase in health investment generates an increase in health

delivery which provides the basis for human capital development as an essential ingredient for economic growth.

Despite this commitment and goals of the current national policy on health, a preview of the trends of budgetary allocations over the years shows that the federal government has been allocating between 5 percent and 6 percent of the budget to health, and it has never exceeded that at any point in time while Rwanda, Swaziland, Ethiopia, Malawi, the Central African Republic and Togo have since kept to the promise of the Abuja declaration (Ogundipe & Lawal, 2011). However, available data indicated that on average about 2.1% to 5.8% of total government expenditure was expended on health between 2000 and 2015 (National Bureau of Statistics (NBS), 2016). The belief is that this would improve the health of the citizenry that can translate into the healthy human capital base with its multiplier effects on economic growth and development. Statistics have shown that the country's public expenditure on health as a percentage of GDP is 4.1 percent against the 4.6 percent African average and over 6.3 percent in developed countries. With these efforts, Nigeria's overall health status or sector performance outcomes have not been so encouraging.

Recently, the results of the World Health Organization's analysis of the world's health systems in 2016 among 191 member states are in, and Nigeria ranked 187 only ahead of the Democratic Republic of the Congo, Central African Republic, and Myanmar. Using performance indicators including the overall level of health, distribution of health in populations, responsiveness, and distribution of finance, France ranked 1, followed by Italy, San Marino, Andorra, and Malta, respectively (WHO, 2016). The 2016 Human Development Report of the United Nations Development Programme (UNDP) shows that Nigeria's human development index increased from 0.454 to 0.462 which is just about 0.01 percent.

However, her ranking continued to be at the low levels of the World Human Development Index ranking and the report also showed that Nigeria was ranked 153 out of 186 countries that were ranked. Comparatively, Africa Countries like Ghana, Namibia, Botswana, and South Africa were respectively ranked amongst the high and medium human development indexed countries (UNDP, 2016). The UNDP report also noted that by 2020, according to projections, the combined economic output of these three leading developing countries alone Brazil, China, and India will surpass the aggregate production of Canada, France, Germany, Italy, the United Kingdom, and the United States (Omankhanlen, Ogaga-Oghene, Obarisiagbon & Okorie, 2014).

This shows that most nations including African countries that have experienced higher economic output and human development index as a result of the high level of human capital stock and pose a question in Nigeria, can the poor economic performance and lower human development index a resultant if of low health expenditures in Nigeria. Therefore, the study set to empirically examine the impact of health expenditure on the human development index in Nigeria. While the specific objectives are to:

i. Investigate the impact of government recurrent health expenditure on human development in Nigeria.
ii. Evaluate the impact of government capital health expenditure on human development in Nigeria.

Literature Review
Conceptual Review
Health is a multifaceted concept and thus it is very difficult to define it precisely. The general notion about health is the absence of illness due to physiological and organic deficiencies. It is mainly concerned with an individual body's mechanical ability and the functioning of basic parts and organs of the human body. The broad definition of health, however, does not mean mere absence of disease but it encompasses the whole range of personal, physiological, mental, social, and even moral well-being of a person (Martins, 2005). The World Health Organization (2016) recently defines health as "a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity". Therefore, health in the actual sense is the adequacy of the physical and mental capacity of a person to enjoy life to the fullest possible extent and to reach his maximum level of productive capacity. Berger and Messer (2002) view health as a form of capital, such that health care is both a consumption good that yields direct satisfaction and an investment good that yields indirect utility through increased productivity, fewer sick days, and higher wages. They believed that health and health services can be considered as any other economic commodity and a durable commodity. Also, all people are born with reserves of health; some people have less and some more.

While, health expenditures encompass all activities whose primary purpose is to restore, improve, and maintain health for the nation and individuals during a defined period (World Health Organization, 2000). Records of expenditures for these activities, or a basis for estimating them, are required regardless of the type of institution or financing entity, which includes traditional, complementary, and alternative medicine. It also includes preventive and long-term care. Razmi, Abhasian, and Mohammadi (2012) asserted that Health expenditures will provide a positive impact on human development through increased economic growth, reduction of mortality rate, and improvement the learning ability. Government health expenditure is the whole of total health expenditure so that health is recognized as a public good that the private sector has minor investment in. Thus, government health spending has caused public health promotion and through specified channels will lead to human development. Therefore, Government health expenditure consists of recurrent and capital spending from government (central and local) budgets, external borrowings and grants (including donations from international agencies and nongovernmental organizations), and social (or compulsory) health insurance funds.

While, according to UNDP (2016) human development reports, human development is the process of expansion options for a human that the most important of these include long and healthy life, education, enjoyment of a good standard of living, more choices include political freedom, guaranteed human rights and dignity breath. In the view of Gustav Ranis, (2004) human development has two aspects: One aspect is related to human capabilities, such as improved health, knowledge, and skills and other aspects of their capabilities to the opportunities and benefits purposes, such as being active in political, social and cultural issues.

According to Chukwunonso (2014), human development refers to the ability and efficiency of people to transform raw material and capital into goods and services, and the consensus is that the skills can be learned through the educational system and sustained through an effective health care delivery system. Similarly, Beach (2009) opined that human development is regarded as development that improves people's lives and their livelihoods and places human beings at the centre of all development efforts. He also stressed that human capital development is the process of enlarging the range of people's choices; increasing their opportunities for education, health-care, income, and employment, and covers a full range of human choices; from a sound

physical environment to economic and political freedom. More so, human capital development involves an accumulation of material wealth as well as social capital. Thus, human development is a process of increasing the skills and the abilities of the available human stock in society.

On the other hand, human development is generally measured by the Human Development Index (HDI), which includes indicators on income, literacy levels, and life expectancy (UNDP, 2016). These indicators are often reviewed to reflect country-relevant situations. While Opreana and Mihaiu (2011) HDI is the geometric mean of normalized indices measuring achievements in each dimension. Human Development Index has three dimensions and four indicators, as can be seen in the table below. The education component of the HDI is measured by the mean of years of schooling for adults aged 25 years and expected years of schooling for children of school-going age. The health dimension of the index is measured by life expectancy at birth.

Empirical Review

Bhargava, Jamison, and Murray (2001); Bloom, Canning, and Sevilla (2003); Gupta and Mitra (2003); Baldacci (2004) and Martins (2005); Philips (2005); Aguayo-Rico and Iris (2005); Greiner (2005), Lustig, (2006) and Agenor (2007) researched health expenditure and economic growth for other countries and all emphasized that health expenditure is positively related to economic growth. Moreover, some empirical evidence also emerged from Nigeria which is mainly on government health expenditure and other economic indicators. For example, Olaniyi and Adams (2000) descriptively analyzed the adequacy of the levels and composition of public expenditures and concluded that education and health expenditures have faced lesser cuts than external debt services and defence, but allocations to education and health sectors are inadequate when related to the benchmark and the performance of other countries.

Also, Chete and Adeoye (2002), studied the empirical mechanics through which human capital influences economic growth in Nigeria. They attempted to achieve this objective using Vector Auto Regression analysis (VAR) and Ordinary Least Square (OLS) to capture these influences. They however concluded that there is an unanticipated positive impact of human capital on growth which the various Nigerian governments since the post-independence have appreciated by the prodigious expansion of educational infrastructure across the country. Similarly, Dauda (2011) examines the relationship between health expenditure and economic growth for Nigeria spanning from 1970-2009 by employing descriptive statistics, the Johansen Co-integration technique, and Error Correction Model (ECM), the author suggest that health expenditure is positive and statistically significant but the coefficients of the second and third lags are negative and statistically significant. The results of ECM are statistically significant and have the expected negative sign with the coefficient of 40 percent implying that the speed of adjustment from the short run to the long run is 40 percent. Arguing in the same line, Ogundipe and Lawal (2011) also examined the impact of health expenditure on economic growth in Nigeria. Using the OLS technique, they found a negative effect of total health expenditure on growth.

The study of Razmi, Abhasian, and Mohammadi (2012) was related to this and they analyzed the effect of government health expenditure on human development index (HDI) by using the ordinary least squares method (OLS) over the period 1990-2009 in Iran. The results show a positive and significant relationship between government health expenditure and the human development index. Also, Granger Causality Test indicates that there is no bilateral relationship between the government health expenditure and HDI in Iran. While, Aigbedion et al., (2015) examined the impact of the public and private partnership on health care delivery on economic growth in Nigeria from 1986 to 2014. The study used the Ordinary Least Squares and Error

Correction Model in the analysis. Their results show that there is a positive relationship between health care delivery and economic growth, and the study also shows that both public and private health expenditure have a positive impact on economic growth in Nigeria.

Finally, Oladele and Aigbedion (2018) examined the impact of public health expenditure on economic growth in Nigeria from 1986-2014. Ordinary Least Squares (OLS) and Error Correction Model (ECM) was used to estimate the long-run and short-run impact of public health expenditure on economic growth in Nigeria. The OLS regression result shows that there is a positive relationship between public health expenditure and economic growth in Nigeria in the long run. Similarly, the Error Correction Model (ECM) result shows that public health expenditure has a short-run positive relationship with economic growth in Nigeria. This implies that the health sector has that potency to faster economic growth in Nigeria but government health expenditure and per capita income have little or no significant impact on economic growth in Nigeria. In conclusion, most of the available for review revealed that the studies focused on the impact of government health expenditure and economic growth and other economic indicators except the work of Razmi, Abhasian, and Mohammadi (2012) that analyzed the effect of government health expenditure on human development index (HDI) but the study was done in Iran. Therefore, this study will bridge the gap in empirical studies in this area.

Theoretical Framework

The study adopted the framework from Wagner (1883) which stated the Law of the increasing extension of state activity '. He asserted that there is a long-run propensity for the scope of government to increase with higher levels of economic development. Wagner 's hypothesis deals with the growing relative importance of government activity and has come to be known as Wagner 's Law. According to Wagner, there are three reasons to expect an expanding scope of public activity: first, as nations develop, there is increased complexity of legal relations and communications along with greater urbanization and population density and it forces the government to produce the regulatory framework that accompanies the greater intricacy of relations among economic agents. Second, as income increases, societies demand more education, entertainment, more equitable distribution of income, and generally more public services. Finally, the technological needs of an industrialized society require a larger amount of capital infrastructure than those that are forthcoming from the private sector, hence the need for government to step in to fill in the gap. The study adopted this framework because Wagner 's law is suitable in developing countries like Nigeria.

Methodology

Sources of Data and Method of Analysis

The study intends to utilize annual time series data spanning from 1990 to 2018. The data were obtained mainly from the Central Bank of Nigeria (CBN) Statistical Bulletin and United Nations Development Programme (UNDP) Reports. Since the study is to examine the relationship and the impact of education expenditure on the human development index in Nigeria, the equations are formulated in such a way that its coefficients can be efficiently estimated by estimating each of the components using dynamic regression models. The analytical and interpretational tools employed comprise simple statistical as well as econometrics tools where necessary. According to Pesaran and Shin (1999), which was later expanded by Pesaran, Shin, and Smith (2001) the best techniques that allow the estimation of variables that are integrated into 1(1) and 1(0) is Autoregressive Distributed Lagged (ARDL).

Therefore, the study adopted the Autoregressive Distributed Lagged (ARDL) and Error Correction Model (ECM) to estimate and analyze the long and short-run impact of government health expenditure on human development in Nigeria. In addition, Autoregressive Distributed Lagged (ARDL) -Bounds test procedure was used to examine the co-integration between government health expenditure and human development in Nigeria. The analytical software for model estimation is econometric views (E-Views 10.5) software.

Model Specification
The model for this study follows the work of Razmi, Abhasian, and Mohammadi (2012) in Iran with a modification to reflect the objectives of the study and the nature of data used in our analysis. The work analyzed the effect of government health expenditure on the human development index (HDI) by using the ordinary least squares method (OLS) over the period 1990-2009 in Iran. The implicit function and model are represented as follows:

$$HDI = \alpha + \delta HEg + \beta Gr + \pi PRr + \gamma DTR + dumi \qquad (3.1)$$

Where HDI is the human development index, GR is the growth rate of GDP per capita, PRR is the primary school completion rate, DTR is the total mortality rate and DUMI is a dummy variable reflecting the global crises in 2007. To establish the functional relationship between human development and health expenditures in Nigeria the functional models are formulated as:

$$HDI_t \qquad = \qquad f(THEXP_t, HREXP_t, HCEXP_t) \qquad (3.2)$$

Therefore, explicitly the model becomes:
$$HDI_t \qquad = \qquad \beta_0 + \beta_1 THEXP_t + \beta_2 HREXP_t + \beta_3 HCEXP_t + \mu_t \qquad (3.3)$$

Where;
HDI_t is Human Development Index in Nigeria at time t, $THEXP_t$ is government total health expenditure in Nigeria at time t, HREXP is the government health recurrent expenditure in Nigeria at time t, HCEXP is the government health capital expenditure in Nigeria at time t, and β_0, β_1, β_2, and β_3 are parameters to be estimated, μ_t is the white noise error term. The Autoregressive Distributed Lagged (ARDL) model that will be used in this study is specified as follows:

$$\Delta logHDI_t = \alpha_0 + \sum_{g=1}^{k} \alpha_{1i} \Delta logHDI_{t-i} + \sum_{h=1}^{l} \alpha_{2i} \Delta logTHEXP_{t-i} + \sum_{i=1}^{m} \alpha_{3i} \Delta logHREXP_{t-i}$$
$$+ \sum_{j=0}^{n} \alpha_{4i} \Delta logHCEXP_{t-j} + \alpha_5 logHDI_{t-i} + \alpha_6 logTHEXP_{t-i} + \alpha_7 logHREXP_{t-i}$$
$$+ \alpha_8 logHCEXP_{t-i} + \varepsilon_t \qquad (3.4)$$

Equation (3.4) will be used to examine the short-run and long-run relationship and the impact of health expenditure on human development in Nigeria. While the Error Correction Model (ECM) used in this study is specified as follows:

$$\Delta logHDI_t = \beta_0 + \sum_{g=1}^{k} \beta_{1i} \, \Delta logHDI_{t-i} + \sum_{h=1}^{l} \beta_{2i} \, \Delta logTHEXP_{t-i} + \sum_{i=1}^{m} \beta_{3i} \, \Delta logHREXP_{t-i}$$

$$+ \sum_{j=0}^{n} \alpha_{4i} \, \Delta logHCEXP_{t-j} + \beta ECM_{t-1} + \varepsilon_t \tag{3.5}$$

Equation 3.5 above is used to adjust the estimation until the ECM turned negative. The negative sign of the coefficient of the error correction term ECM (-1) shows the statistical significance of the equation in terms of its associated t-value and probability value.

Presentation and Discussion of Results

The data used in this study are the human development index (HDI) as a proxy for human development in Nigeria. While, Government Total Health Expenditure in Nigeria (THEXP), Government Health Recurrent Expenditure in Nigeria (HREXP), and Government Health Capital Expenditure in Nigeria are the independent variables measuring government health expenditure in Nigeria, and these data are presented in table 4.1 tilted data for regression in appendix I.

Descriptive Analysis and Summary Statistic of the Variables

Table 4.2: Descriptive Analysis and Summary Statistic of the Variables

	HDI	THEXP	HREXP	HCEXP
Mean	0.470241	103.0224	85.51138	17.51103
Median	0.460000	48.87000	40.62000	14.16000
Maximum	0.537000	348.1100	296.4400	51.67000
Minimum	0.413000	0.690000	0.150000	0.380000
Std. Dev.	0.042167	107.3348	95.01498	15.48997
Skewness	0.312070	0.754090	0.863219	0.525145
Kurtosis	1.564999	2.214501	2.287797	2.012884
Jarque-Bera	2.958940	3.494034	4.214449	2.510318
Probability	0.227758	0.174293	0.121575	0.285030
Sum	13.63700	2987.650	2479.830	507.8200
Sum Sq. Dev.	0.049785	322581.0	252779.7	6718.296
Observations	29	29	29	29

Source: Output from E-views 10.5 (2019)

Table 4.2 shows the summary statistics or the descriptive statistics of the variables used in the study. From the table, the highest value for the human development index in Nigeria during the period of study is 0.537% as shown in the maximum values in table 4.2. while, the peak value of government total health expenditure in Nigeria, government health recurrent expenditure in Nigeria, and government health capital expenditure in Nigeria are 348.1 billion, 296.4 billion, and 51.7 billion respectively.

However, the lowest value for the human development index in Nigeria during the period of study is 0.470%. While, the lowest value for government total health expenditure in Nigeria, government education health expenditure in Nigeria, and government health capital expenditure in Nigeria are 0.69 billion, 0.15 billion, and 0.38 billion respectively. On average the values of the human development index in Nigeria is 0.470% while the government total education expenditure in Nigeria, government education recurrent expenditure in Nigeria, and government education capital expenditure in Nigeria are 103.0 billion, 85.5 billion, and 17.5 billion respectively as indicated by their mean values.

Stationarity Test of Variables

Table 4.3: Augmented Dickey-Fuller and Philips-Perron Test Results

Variables	ADF Statistic	Order	Philips-Perron Test	Order
HDI	-6.821653	(1)1	-3.282862	(1)1
THEXP	-4.986667	(1)1	-6.502045	(1)1
HREXP	-5.904223	(1)1	-7.236005	(1)1
HCEXP	-4.937810	(1)1	-3.282862	(1)1
5% Critical Value (1)1 (-2.976263)			5% Critical Value (1)1 (-2.976363)	

Source: Output from E-views 10.5 (2019)

Table 4.3 shows the stationarity test of the variables used in the study and from the table both Augmented Dickey-Fuller and Philips-Perron test results revealed that the variables are stationary at first order at a 5 percent level of significance.

Autoregressive Distributed Lagged (ARDL) -Bounds Test

Table 4.4: ARDL-Bound Testing

Null Hypothesis: No long-run relationships exist		
Test Statistic	Value	K
F-statistic	3.688327	3
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10%	2.37	3.20
5%	2.79	3.67
2.5%	3.15	4.08
1%	3.65	4.66

Source: Output from E-views 10.5 (2019)

Table 4.4 shows the Autoregressive Distributed Lagged (ARDL) -Bound Co-integration test. This became necessary to avoid a spurious regression result. Using the ARDL Bound test with critical value (Pesaran, Shin, and Smith, 2001), the variables were co-integrated at a 5 percent level of significance since the Wald F- statistics is greater than the critical lower and upper bound.

Discussion of Regression Results
ARDL Regression Results

Table 4.5: ARDL Regression Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(HCEXP)	0.044077	0.064949	0.678640	0.5114
LOG(HREXP)	0.264483	0.272031	0.972255	0.3518
LOG(THEXP)	-0.286164	0.336563	-0.850254	0.4133
C	-0.641107	0.224030	-2.861704	0.0155
R-squared	0.683670			
Adjusted R-squared	0.493872			
Log-likelihood	97.17230			
Prob(F-statistic)	0.000000			
Durbin-Watson stat	2.227926			

Source: Output from E-views 10.5 (2019)

Table 4.5 shows the ARDL long run results on the impact of health expenditure on human development in Nigeria. From the result, a percentage change in government total health expenditure in Nigeria on the average, holding other independent variables constant will lead to a -0.286 percentage change in human development in Nigeria. Also, a percentage change in government health recurrent expenditure in Nigeria and government health capital expenditure in Nigeria on the average holding other independent variables constant will lead to 0.264 and 0.044 percentage change in human development in Nigeria.

From the result also, based on the probability value, the government total health expenditure in Nigeria, government health recurrent expenditure in Nigeria, and government health capital expenditure in Nigeria were statistically significant in explaining the variation in human development in Nigeria. However, based on the coefficient and probability values, the government total health expenditure in Nigeria, government health recurrent expenditure in Nigeria, and government health capital expenditure in Nigeria were statistically insignificant in explaining the variation in human development in Nigeria and this implies that government health expenditure in Nigeria has no significant impact on human development in Nigeria in Nigeria. This may be due to inequitable availability of health care services, poor public and private partnership, poor physical infrastructure and equipment; poor human resources availability and management, inadequate drug supplies, high level of political interference, financial constraints and funds mismanagement, resource allocation, and lack of effective regulation or legislation to mention a few.

ECM Regression Results

Table 4.6: ECM Regression Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLOG(HDI(-3))	0.524465	0.188122	2.787896	0.0177
DLOG(HREXP)	0.062040	0.014444	4.295249	0.0013
DLOG(HCEXP	0.031651	0.013204	2.397027	0.0354
DLOG(THEXP)	-0.075974	0.016775	-4.528989	0.0009
ECM(-1)*	-0.198069	0.039497	-5.014747	0.0004

Source: Output from E-views 10.5 (2019)

Table 4.6 shows the results Error Correction Model (ECM) of the study. After examining the long-run impact of health expenditure on human development in Nigeria using ARDL, it is necessary to test for short-run impact and speed of adjustment among the economic variables. From table 4.6, the ECM parameter is negative (-) and significant which is -0.20, this shows that 20 percent disequilibrium in the previous period is being corrected to restore equilibrium in the current period. It has been established that the variables are cointegrated and also have a short-run relationship and impact established from the ECM.

All the independent variables were positively related to human development in Nigeria except the government's total health expenditure which is negatively related to human development in Nigeria. Finally, based on the probability of the results all independent variables were statistically significant in explaining the variation in human development in Nigeria. This implies that government health recurrent expenditure in Nigeria and government health capital expenditure in Nigeria has a positive and significant impact on human development in Nigeria in the short-run.

Conclusion and Recommendations

In conclusion, the stationarity test shows that all the variable in the study were stationary at the first difference of 5 percent level of significance that is human development in Nigeria proxy by HDI, government total health expenditure in Nigeria, government health recurrent expenditure in Nigeria, and government health capital expenditure in Nigeria. From the ARDL long-run result, it was revealed that health expenditure has a positive impact on human development in Nigeria but the impact is statistically insignificant. Though the findings of this study are similar in terms of positive relationship and impact to the work of Razmi, Abhasian, and Mohammadi (2012) that analyzed the effect of government health expenditure on human development index (HDI) a study in Iran. The study showed that the government investment spending in health has a positive impact on human development, the study revealed that the positive impact is statistically significant in explaining variation in human development in Iran while in Nigeria is otherwise.

On the other hand, the ECM results revealed that all the independent variables were positively related to human development in Nigeria except the government's total health expenditure which is negatively related to human development in Nigeria. Finally, based on the probability of the results all independent variables were statistically significant in explaining the variation in human development in Nigeria. This implies that government health recurrent expenditure in Nigeria and government health capital expenditure in Nigeria has a positive and significant impact on human development in Nigeria in the short-run. Therefore, the study recommends the following policies.

i.   The government should increase the health expenditure through the annual budget in Nigeria to improve the quality of health care service delivery and the level of human development in Nigeria. This quality health care service delivery can be achieved through increased health expenditure in physical facilities, patient to doctor ratio, recruiting the best hands to manage the health system, and proper training of staff and management at all levels of the health system.

ii.   The government should increase the mechanism to check and control the allocation and implementation of health expenditures that are recurrent and capital expenditures to increase the significant impact on human development in Nigeria, especially in the long run because the long-run result revealed that both government health recurrent and capital expenditures are statistically insignificant in explaining variation in human development in Nigeria.

iii.   The government through budget planning, implementation, and monitoring should ensure that health care service delivery funds are properly and fully utilized in Nigeria to improve the impact of health expenditure on human development in Nigeria. And this will help the government to account for every kobo spent in Nigeria.

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APPENDIX I

Table 4.1: Data for Regression

YEAR	HDI (%)	THEXP (₦Billion)	HREXP (₦Billion)	HCEXP (₦Billion)
1990	0.413	1.03	0.50	0.53
1991	0.421	1.00	0.62	0.38
1992	0.424	0.69	0.15	0.54
1993	0.426	4.78	3.87	0.91
1994	0.427	3.36	2.09	1.27
1995	0.429	5.66	3.32	2.34
1996	0.432	5.22	3.02	2.20
1997	0.435	5.64	3.89	1.75
1998	0.434	10.67	4.74	5.93
1999	0.437	21.02	16.64	4.38
2000	0.438	22.32	15.22	7.10
2001	0.440	38.07	24.52	13.55
2002	0.440	48.87	40.62	8.25
2003	0.450	47.43	33.27	14.16
2004	0.460	41.83	34.20	7.63
2005	0.470	73.79	55.66	18.13
2006	0.483	82.24	62.25	19.99
2007	0.486	120.24	81.91	38.33
2008	0.490	136.87	98.22	38.65
2009	0.495	127.01	90.20	36.81
2010	0.500	137.65	99.10	38.55
2011	0.510	255.38	231.80	23.58
2012	0.510	222.64	197.90	24.74
2013	0.520	219.29	179.99	39.30
2014	0.530	224.25	195.98	28.27
2015	0.532	278.78	257.70	21.08
2016	0.535	221.05	200.82	20.23
2017	0.537	282.76	245.19	37.57
2018	0.533	348.11	296.44	51.67

Sources *(i) Human Development Index from UNDP and World Bank Databank Online,1990-2018*
(ii) Expenditure Data from CBN Statistical Bulletin, December, 2018