THE IMPACT OF GOVERNMENT TOTAL HEALTH EXPENDITURE ON THE ECONOMIC DETERMINANTS FOR THE DEMAND OF HEALTHCARE IN NIGERIA 1990-2015

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Abstract *This study examines the relationship between government total health expenditure and the economic determinants for the demand of healthcare in Nigeria, covering the period 1990-2015. The main source of data utilized is from CBN Statistical Bulletin 2015 and World Development Indicators 2016. By employing the use of the multiple regression model as the main statistical tool of analysis, the study established that there exists a positive relationship between government total health expenditure and the economic determinants for the demand of healthcare in Nigeria except one of the variables which is aged dependency ratio that has a negative relationship with government total health expenditure. Based on the findings, the study recommends that there is need for the inclusion of health care facilities and skilled health personnel in the government health expenditure, to build centres across the country to care for the dependent aged in the society. Also, the enlightenment on health issues needs to be intensified so that the health status of Nigerians is improved and greater attention should be paid to the supply and demand of health inputs in the country.*

Keywords: health, healthcare, healthcare demand, government healthcare expenditure.

1.1 INTRODUCTION

Health is an important component of human capital in the sense that investment in health has important direct effects on productivity and thus on economic growth. And so a good health care is a primary human need. The issue of health care seeking (or Medical Care) behavior is to all society. All Nations rely on its human capital in the creation and pursuit of growth and/or development. Access to health services consists of at least five components of service provision: availability, affordability, acceptability, appropriateness and quality. The human capital is able to accomplish those desired objectives outlined by the society only on the fundamental premise that the people are in good health. Health is a basic fundamental right of all citizens and health promotion forms an intrinsic part of health care because a healthy society reflects the wellbeing of a nation.

The World Health Organization (WHO) Constitution of 1948 defines health as a state of complete physical, social and mental well-being, and not merely the absence of disease or infirmity. In addition, the Ottawa Declaration states an "individual or group must be able to identify and realize aspirations, to satisfy needs, and to change or cope with the environment. Health is, therefore, seen as a resource for everyday life, not the objective of living. Health is a positive concept emphasizing social and personal resources, as well as physical capacities. In recent years, the definition of health has been modified to include the ability to lead a socially and economically productive life. The level of health people come to define as normal also depends on their society's technology. In the study by Kareem, Fagbohun, Oyinkansola and Arije (2017), they explained healthcare as the diagnosis, treatment and prevention of disease, illness, injury and other physical and mental impairment in human beings. Healthcare is delivered by practitioners in allied health, dentistry, midwifery, medicine, nursing, and other health professions. It refers to the work done in providing primary, secondary and tertiary care as well as in public health. Health is a dynamic concept with multiple meanings that are dependent on the context in which the term is used and the people who use it. People see health as essential to well-being, but how people define their own health varies according to their own social experience, particularly in relation to their age, personal knowledge, and social and illness experiences. People put a high value on health because while money and power provide the means for people to attain material things that may benefit their lives, no one can actually buy health. Health is intrinsically tied to people's sense of wellbeing and therefore occupies a higher order of meaning in people's lives. In other words, health itself cannot be bought and sold in the marketplace, although health services can be both bought and sold (Keleher & MacDougall, 2017).

Health care financing has serious implications for the welfare of Nigerians. The health status of Nigeria is still considerably low and exists below that of some countries in West Africa. Low life expectancy at birth, high infant and maternal mortality rates, malaria and tuberculosis afflictions are some of the characteristics features of the Nigeria`s health status. Life expectancy at birth in Nigeria was estimated at only 48 in 2007, compared with 56 in Ghana (Onisanwa, 2014). He explained that this is complemented by the high numbers of women who die of complications during pregnancy or childbirth. Although the global maternal mortality ratio of below 400 maternal deaths per 100 000 live births in 2008, the maternal mortality ratio for Nigeria was 1100 per 100 000 live births, still on the high when compared to 560 and 910 in Ghana and Guinea respectively. The prevalence of HIV/AIDS among adults aged 15 and above infection has contributed significantly to Nigeria's low life expectancy (WHO 2010). It was estimated at 2,886 per 100,000 people. It is above the Prevalence rate in Ghana (1722), but below that of Cameroun (4580). Also, the per capital income in Nigeria is low, with more than half of the population leaving below the poverty line. Thus, provision of adequate funding for health care either by the household or the government remains difficult.

According to Awolola (2014), looking back at a time when we had little control over the environment and living standards were low, people routinely contended with malnutrition, all sorts of occupational hazards, and a host of infectious diseases. Only as industrialization raised the standard of living did conceptions of health correspondingly rise. In global perspective, contrasts of this kind persist today. What many people throughout the Third World learn to accept as the norm for health, most people in the United States would consider intolerable (Krieger, Rehkoph, Chen, Waterman, Marcelli & Kennedy, 2008).

In most rural areas in Africa, one in three women lives more than five kilometers from the nearest health facility (World Bank, 1994b). The scarcity of vehicle, especially in remote areas and poor road condition can make it extremely difficult for women to reach even relatively nearby facilities. Walking is the basic mode of transportation even for women in labour (Williams,.Baumslag, & Jelliffe, 1985; World Bank, 1994b).

The goal of the national Health policy is to bring about a comprehensive health care system, based on primary health as clearly stated by the Federal Ministry of health is protective, preventive, restorative and rehabilitative to every citizen of the country within the available resources so that individuals and communities are assured of productivity, social well-being and enjoyment of living. The objectives of the Nigeria health sector therefore, include reducing mortality, morbidity and fertility through promotion of health care, and increasing access to health care services. The government policy is also directed at affordable and efficient health care service which can be accessed by all people (Mulgiwa, 2005).

However, the presence of facilities does not always guarantee their utilization. The utilization of health services can be viewed as a type of individual behavior. In general, the behavioral sciences have attempted to explain individual behavior as a function of characteristics of the individual himself, characteristics of the environment in which he lives, and or some interaction of these individual and societal forces (Moore, 1969) in Andersen and Newman, (1973). Thus, the health care utilization of a population is dependent on their health seeking behavior which has many determinants: physical, political, socioeconomic and socio-cultural. Studies identify different reasons affecting the utilization of health services between the developed and developing countries. According to a Canadian study, the number of contacts with a doctor by adults in U.S. was influenced by their financial status and health insurance coverage and in

Canada, women are more frequent users of health services as compared to men. In contrast to the Canadian women, a woman in Pakistan is unable to travel alone to a close village and has to be accompanied by her mother in-law, husband or a relative in order to access a health care facility which forms a barrier to their health status improvement. The unavailability of female health staff at health facility and lack of knowledge among women regarding their health are also seen as an impediment in females' health utilization behavior. Therefore, all health care service of a nation is based on information relating to health promotion, seeking and utility behavior and the factors determining the health behaviors may be seen in various contexts: physical, socio-economic, cultural and political. Therefore, according to Shaikh and Hatcher, (2004), the utilization of a health care system, public or private, formal (orthodox) or non-formal (traditional care), may depend on socio-demographic factors, social structures, level of education, cultural beliefs and practices, gender discrimination, status of women, economic and political system, environmental conditions, and the disease pattern and health care service itself.

The Health Behavior Model states that an individual's use of health services is a function of his/her predisposition to use services, factors enabling or impeding use, and need for care. Predisposing factors include demographic characteristics such as age and gender; social structure, which has traditionally been measured using education, occupation, and ethnicity and can also include social networks and interaction and culture; and health beliefs, which are the attitudes, values, and knowledge that might influence use of health care services (Anderson , 1995) There is a growing body of literature on developing countries analyzing the demand and choice of healthcare providers of individuals.

Health seekers in Nigeria just like other developing countries of the world tend to do so based not only on their health seeking behavior but also on other environmental factors as

determinants of their utilization of health care facilities (Nigeria Health Review, 2006). Not just that, several other factors are involved in health seeking behavior among households in Nigeria. These factors include the severity of the symptoms of illness, socio-cultural influences, distance, place and cost of treatment, income level, educational level and quality of health care facilities (Nyonator & Kutzin 1999; Nigeria Health Review, 2006 and Sullivan, 2001). Health status is a direct product of economic power, Propper, (2000). Andy and Cassels (2004) emphasize that ill health can cause poverty via loss of income, catastrophic health expenditures and orphanhood. A number of socio-demographic characteristics of the individual affect the underlying tendency to seek health care (Addai, 2000; Celik & Hotchkiss, 2000; Adekunle et al, 1990; Gertler & Van Der Gaag, 1988). Poor health conditions can have a debilitating impact on the economy in terms of lower investment flows and reduced tourist traffic. Over two billion people do not have adequate health care to meet their basic needs (Poppov Research Network 2009).

1.2 Over View Healthcare Services in Nigeria

Health care systems comprises of individuals and organization that aim to meet the health care needs of target population (Rogers and Pilgrim, 2005). The goals for health system according to the World Health Report 2000 – Health systems: improving performance (WHO, 2000) are good health, responsiveness to the expectation of the population, and fair financial contribution.

In Nigeria, health services are provided by the private and public sectors. From private sector, there are non-governmental organization, private for-profit providers, community-based organization and religious and traditional care givers. There is a variety of types of basic care facilities especially in the rural areas group by various names like dispensaries, health centres and health posts. In addition to the public health cares, the informal private – traditional healers- remain an important source of care that should not be forgotten especially in the rural areas of the country.

Going by the statistics, about 47.8 percent and 70.9 percent have health access in rural and urban areas respectively while 9.1 percent and 4.6 percent consulted traditional healers in both the rural and urban areas respectively (Abiodun, 2011). The provision of health services in public sectors are at three levels namely the Primary, Secondary and Tertiary.

At the primary level, services are at the door step of communities where preventive, curative; primitive and pre-referral cares are provided. Medical personnel that provide such services are nurses, community health officers, community health extension workers (CHEWs) and environmental health officers. The available facilities at this level include health centres, dispensaries, and health.

At secondary level, there are general hospitals to provide medical, laboratory and specialized health services, namely, surgery, obstetrics, pediatrics, genecology and so on. Major health workers that are at the secondary level are doctors, nurses, midwives, laboratory scientists and pharmacists. The typical facility use is general hospitals.

Tertiary level of health service provision is the highest health care in the country. The facilities include specialist and teaching hospitals, and federal medical centres. They are equipped with high technology for special health services and serve as resource centres for knowledge generation.

Traditional African medicine is a holistic discipline involving indigenous herbalism and Africa spiritually, typically involving diviners, midwives, and herbalists. Practitioners of traditional African medicine claim to be able to cure various and diverse conditions such as cancers, psychiatric disorders, high blood pressure, cholera, most venereal diseases, epilepsy, asthma, eczema, fever, anxiety, depression, benign prostatic hyperplasia, urinary tract infections, gout, and healing of wounds and burns (Helwig, 2010).

1.2.1 Factors Affecting Demand for Healthcare in Nigeria

- **Education** - education is strongly related to health, as it is an important determinant of demand for healthcare. More educated individuals are better informed. Also, more educated individuals may have more control over their lives, or be less depressed. Which makes them less likely to indulge in unhealthy activities which therefore result to ill health. Those with more education also obtain more preventive care (e.g. immunization and mammograms), manage existing conditions more effectively (e.g. diabetes and hypertension), and make more use of safety devices such as seat belts (Fuchs, 1979).
- **Age** - Age is an important factor for explaining the demand for healthcare in Nigeria. Age is a continuous variable, that is to say, the older a person gets (this study considers aged dependency ratio from 64years and above), the more likely they would demand healthcare as age is associated with reports of illnesses. That is to say, the elderly have higher healthcare needs.
- **Financial Resources** - Both income and wealth have strong independent correlations with health, net of education and other measures of socio-economic status. Assessing causality is difficult, however. Income and wealth improve access to health inputs, such as medical care and food, but health improves one's ability to participate in the labour market and earn a decent wage.

- **Culture** - Culture may be broadly defined as a system of shared beliefs, values, customs, behaviors, language, and artifacts that members within a particular society use to cope with their world and with one another, and that are transmitted from generation to generation through learning (Helman, 2001, Swendson & Windsor, 1996). Cultural background in the form of beliefs, behavior, perceptions, emotions, language, religion, diet, attitudes to illness, pain and other forms of misfortune have either positive or negative consequences for health and health care delivery (Helman, 2001).
- **Physical Accessibility -** Access to a primary health care facility is projected as a basic social right. In developing countries, including Nigeria, the effect of distance on service use becomes stronger when combined with the dearth of transportation and with poor roads, which contributes towards increased costs of visits. The availability of transport, physical distance of the facility and time taken to reach the facility undoubtedly influence the health seeking behaviour and health services utilization (Awolola, 2014).
- **Disease Pattern or Duration of Illness**– this means that the type of symptoms experienced for the illness and the number of days of illness are major determinants of health seeking behavior and choice of care provider. In case of a mild single symptom such as fever, home remedies or folk prescriptions are used, whereas with multiple symptoms and longer period of illness, biomedical health provider is more likely to be consulted (Islam & Aman, 2001; Sadiq & Muynck, 2002).

2.1 LITERATURE REVIEW

2.1.1 Theoretical Framework

Grossman Theory of Healthcare Demand

Much of the recent progress in healthcare demand research is due to the theoretical insights of Grossman (1972). Essentially, Grossman's proposition is that the demand for healthcare is a derived demand. Health is demanded as an argument in the direct utility function of the individual as both a source of utility in itself and as a capital or investment good since it determines the amount of time available to the individual for the production of other goods and services. Generally, the demand for healthcare implies that as there's a reduction in the cost price of healthcare, this will also influence the consumer's demand for healthcare. Which means that as the cost of healthcare in an economy decreases overtime, the demand for healthcare by the people of that country will increase beyond the level it was when cost of healthcare was high. For the more an economy increases its expenditure on the health of its population, the more the demand for healthcare by the population because of cost reduction through policy implementation. Grossman concluded that health is a durable stock that produces an output of healthy time.

Andersen's Behavioral Model of Health Services Utilization

Andersen (1968) developed a model of healthcare utilization, which looks at three categories of determinants: 1) Predisposing characteristics. This category represents the proclivity to utilize health care services. According to Andersen, an individual is more or less likely to use health services based on demographics position within the social structure, and beliefs of health services benefits. An individual who believes that health services are useful for treatment will likely utilize those services; 2) Enabling characteristics. This category includes resources found within the family and the community. Family resources comprise economic status and the location of residence. Community resources incorporate access to health care facilities and the availability of persons for assistance; 3) Need based characteristics. The third category includes the perception

of need for health services, whether individual, social, or clinically evaluated perceptions of need (Wolinsky, 1988b).

2.2 EMPIRICAL LITERATURE

Several studies have so far been carried out in this field and the findings of these studies differ widely, one from the other. Ali and Norman (2013), carried out an empirical analysis in Bangladesh using logistic regression of demand for healthcare, their findings revealed that there is negative relationship between the price of health care and the demand for healthcare. Sahnet and Stephen (2003), estimated demand for health care in rural Tanzania and found that a rise in the price of public healthcare leads to a substantial substitution into private health services. Doubling the price of public clinics or public hospitals resulted in a decline in the probability of their use by 10% while doubling the price of private clinics was accompanied by a large increase in the use of public clinics. Rimando (1970) found that income level, insurance coverage, education and belief of mothers, and demographic (age) and physiological (felt needs) characteristics of households have significant impact on demand for some types of health services. Ali and Norman, found that the level of income positively affected the demand for health care in Bangadesh in 2010 On the other hand, Paqueo (1977) found that the type of residence has a very large effect on healthcare demand, with rural households mainly at a disadvantage. Vork (2000), found that demand for healthcare decreases with the increase in the age of the patient in Estonia. Appiah – Kubi (2004), found that education, location and socioeconomics affect the utilization of healthare in Ghana. In Nigeria, Olaniyi and Adams (2000) did a descriptive analysis of the adequacy of the levels and composition of public expenditure and conclude that education and health expenditures have faced

lesser cuts than external debt services and defence, but allocations to education and health sectors are inadequate in relation to the benchmark and the performance of other countries. In their study of the determinants for demand of healthcare in Nigeria, using Ekiti State as their case study, Sunday, Waheed, Isiaka and Oluremi (2015), using descriptive statistics, discovered that the demand for health care services using traditional / spiritual homes is affected positively by sex, waiting time and installment while, only household expenditure is found to be affecting it negatively. The implication of this is that, house hold expenditure reduces the demand for health care services in the study area. Most of the studies were focused on the choice of recipients receiving health services from different care providers by using different econometric approaches. But in this study, demand for healthcare is estimated by using the techniques of the ordinary least squares (OLS) regression analysis, which is more capable in explaining the determining factors of the demand for healthcare.

3.1 METHODOLOGY AND SOURCES OF DATA

This study utilized the annual time series data spanning the period of 1990-2015 and secondary data obtained from the CBN Bulletin and World Development Indicators (WDI) 2016 was used. The methodology adopted in this study is the ordinary least squares (OLS) technique estimate the relationship between government health expenditure and the economic determinants for the demand of healthcare. The model expressed government total health expenditure as function of Gross Domestic Product Per Capita, Adult Literacy Rate and Aged Dependency Ratio:

$GTHE = \beta + \beta_1 GDPPK + \beta_2 ALR + \beta_3 ADR + U$

Where :

GTHE = government total health expenditure

GDPPK = Gross Domestic Product Per Capita (as a proxy for household incomes)

ALR = adult literacy rate of Nigeria's residents 15 and above

ADR = aged dependency ratio of 64 and above

β,β_1,β_2 and β_3 = parameters to be estimated

U = error term or stochastic variable

Apriori Expectation

The expenditure on health by the government is expected to improve the demand for healthcare by the citizens: their health awareness supposed to improve that is, people have access to better health education as well as their per capita GDP. Since necessary facilities and skilled health personnel are being provided in order to take care of people's health needs. Also, as the aged dependency ratio increases, it is expected that government expenditure also increases so as to improve the lives of the dependents. At the end of the estimation, the intercepts β_0,β_1,β_2 and β_3 are expected to be positive.

4.1 EMPIRICAL RESULTS AND DISCUSSION OF FINDINGS

4.1.1 Unit Root Tests

The results of ADF unit root tests of the variables at levels and at first difference are presented in Table 1. The ADF regression included a linear deterministic trend.

Table 1. Summary of Augmented Dickey-Fuller Unit Root Tests

At level			**At 1st Difference**		
Variable	ADF Statistic	Remarks	Variable	ADF Statistic	Remarks
GDPPK	0.456275	Non-stationary	ΔGDPPK	-4.468133	Stationary

ALR	-1.989882	Non-stationary	ΔALR	-9.248330	Stationary
ADR	-3.192137	Stationary	ΔADR	-1.815567	Non-stationary
GTHE	1.380265	Non-stationary	ΔGTHE	-7.725554	Stationary

Source: Results Extracted from E-Views 7.0

Note: the test was conducted 0.05% level of significance with a critical value of -2.99. 'Δ' depicts differencing of the variable.

The results show that all the variables are Non-stationary at a level while ADR is stationary. However, at 1st difference, all the variables are stationary except ADR, which is Non-stationary. Given the unit root tests of the variables, I proceeded to test for the long run relationship among them using the variables using the Johansen Co-integration test.

4.2 Co-Integration Test Result

The study conducted the Johansen Multivariate Co-integration test to determine the long run relationship among the variables.

Date: 08/16/17 Time: 12:42

Sample (adjusted): 1992 2015

Included observations: 24 after adjustments

Trend assumption: Linear deterministic trend

Series: GDPPK ALR ADR

Lags interval (in first differences): 1 to 1

Table 2

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.509177	31.60064	29.79707	0.0307

At most 1	0.384246	14.52052	15.49471	0.0697
At most 2	0.113181	2.882751	3.841466	0.0895

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Table 3.
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None	0.509177	17.08012	21.13162	0.1683
At most 1	0.384246	11.63777	14.26460	0.1250
At most 2	0.113181	2.882751	3.841466	0.0895

Max-eigenvalue test indicates no cointegration at the 0.05 level
* de notes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values
Source: Authors computation.

From table 2, the Johansen cointegration trace test result indicates 1 cointegrating equation at the 0.05% level of significance, thus, the null hypothesis of no cointegration is rejected which implies that there exists a long run relationship among the endogenous independent variables in the model. And the table 3, which is the Maximum Eigenvalue cointegration result, it shows that there is no cointegrating equation at the 0.05% level implying that long run relationship exists among the variables

4.3 Regression Analysis
The linear relationship of government health expenditure and the economic determinants for the demand of healthcare is stated thus:

$GTHE = \beta + \beta_1 GDPPK + \beta_2 ALR + \beta_3 ADR + U$

The regression result is shown in table 4.

Dependent Variable: GTHE

Method: Least Squares

Date: 08/16/17 Time: 12:18

Sample: 1990 2015

Included observations: 26

Table 4.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	14.11980	10.91763	1.293302	0.2093
GDPPK	0.000640	0.000301	2.126844	0.0449
ALR	0.015169	0.055526	0.273191	0.7873
ADR	-0.166685	0.102941	-1.619231	0.1196

R-squared	0.676506	Mean dependent var	3.415769
Adjusted R-squared	0.632394	S.D. dependent var	0.780016
S.E. of regression	0.472928	Akaike info criterion	1.480892
Sum squared resid	4.920543	Schwarz criterion	1.674445
Log likelihood	-15.25159	Hannan-Quinn criter.	1.536628
F-statistic	15.33584	Durbin-Watson stat	1.783848
Prob(F-statistic)	0.000013		

Source: Author's computation

GTHE= 14.11980 + 0.000640GDPPK + 0.015169ALR -0.166685ADR + U

The estimated coefficients help us to examine the impact of the individual regressors on the regressand. As observed above, GDPPK has a positive coefficient of 0.000640 and P-value = 0.0449 this means that there is a positive and significant relationship at 5% between government total health expenditure and GDP per capita. If all independent variables other than GDP per capita are held constant, every 1% increase in GDP per capita will increase government total health expenditure by 0.06%. The 0.06% increase significantly impact on government total health

expenditure. It is therefore imperative to put up measures that will Increase the per capita GDP of Nigerians. ALR with coefficient 0.015169 and p-value of 0.7873. This means there is a positive and insignificant relationship between adult literacy rate and government health expenditure in the economy. For every increase of 1% in adult literacy rate led to 1.51% increase in government total health expenditure. And such an increase does not significantly impact on the government total health expenditure, this is because the p-value of ALR is greater than the level of significance of 0.05, that is, 0.7873>0.05. Aged dependency ratio (ADR) impacts negatively on government total health expenditure since the coefficient and the p-values are -0.166685 and 0.1196 respectively. This indicates that there is a negative and insignificant impact of aged dependency ratio on total health expenditure. An increase of 1% in aged dependency ratio will bring about a decrease in government total health expenditure, which does not conform to the apriori expectation. The constant term is statistically insignificant because its p-value = 0.2093, is greater than the 0.05% level of significance even though it has a positive impact on the government total health expenditure.

The coefficient of determination (R-squared) put at 0.676506 shows that a 67.6% of variation in GTHE is accounted for the variation in the included regressors in the model, while the remaining 32.4% which could not be accounted for is assumed to be caused by the included disturbance term. And the adjusted coefficient of determination put the systematic variation at 63.2%. Thus, the overall model was statistically significant at 5% level of significance based on the empirical F-statistic put at 15.33 with the p-value = 0.00. The values of Akaike, Schwarz and Hannan-Quinn criteria were all low. This implies that the model specified was proper and good. The Durbin-Watson stat of 1.78, which indicates the absence of autocorrelation.

5. CONCLUSION AND RECOMMENDATION

Analysis of demand for healthcare id very important for policies and strategies for the development of health sector. In this paper based on the findings, it is evident that, there is a positive relationship between the Government total expenditure on health and the economic determinants for the demand of healthcare in Nigeria except aged dependency ratio which has a negative relationship. This means that as the number of aged increases, it brings about a negative impact on the health expenditure.

So based on the above findings, the study therefore recommends the following:

- The enlightenment on health issues needs to be intensified so that the health status of Nigerians is improved. The more enlightened a person is about their health, the more attention they would give to their health as well as that of their families. Greater attention should be paid to the supply and demand of health inputs in the country.
- There is need for the inclusion of health care facilities (that is, special care centres for the aged in the society) with skilled health personnel across the country to care for the dependent aged in the society, which could be called a ‘nursing home’ as it is done in most developed countries like the US and UK.

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APPENDIX: DATA FOR REGRESSION

Government total healthcare expenditure and the economic determinants for the demand of healthcare in Nigeria 1990-2015

YEAR		GTHE		GDPPK	ALR		ADR			
1990		2.24		3981.7		49.0		91.369607		
1991		2.21		3975.2		52.0		91.2693107		
1992		2.34		3894.0		54.0		90.9012352		
1993		2.50		4012.8		54.0		90.3100787		
1994		2.69		4162.3		55.0		89.5483301		
1995		2.77		4279.5		55.0		88.668061		
1996		2.92		4305.8		57.0		88.4265021		
1997		2.92		4383.0		55.6		87.9946718		
1998		3.47		4330.9		57.98		87.4390205		
1999		3.38		4285.9		58.87		86.8368189		
2000		2.84		4406.7		59.77		86.243224		
2001		3.25		4397.2		60.66		86.387552		
2002		2.43		4466.5		61.56		86.4275343		
2003		4.05		4457.6		62.45		86.3989697		
2004		4.33		4646.9		59.8		86.3279302		
2005		4.11		4733.2		62.37		86.2323248		
2006		3.66		4865.2		63.1		86.7257966		
2007		4.47		5101.6		62.37		87.0627903		
2008		4.00		5303.0		69.3		87.2787058		
2009		4.24		5238.6		61.0		87.4076668		
2010		3.47		5581.0		63.1		87.4648356		
2011		3.69		5744.5		63.7		87.8237635		
2012		3.30		5791.3		64.18		88.0662264		
2013		4.69		5801.2		64.39		88.1580623		
2014		4.48		5821.5		64.87		88.0444881		
2015		4.54		5832.9		64.92		87.708426		

Source: **CBN Statistical Bulletin 2015 and World Development Indicators 2016 (WDI)**