

THE IMPACT OF HEALTH PROGRAMMES ON ECONOMIC GROWTH IN NIGERIA

NWEZE PAUL NWEZE
Department of Economics
Ebonyi State University
Abakaliki
Ebonyi State
nwezepaul2012@yahoo.com

Abstract

This study focused on the impact of health programmes on economic growth in Nigeria. It also examined the impact of health programmes on human capital development in Nigeria. Data were obtained from Central Bank of Nigeria (CBN) statistical bulletin from the period 1981 to 2012. Ordinary Least Square method and computer software were used to estimate the parameters of two models which were developed for the study. The results obtained showed that there was a positive relationship between health programmes and economic growth in Nigeria as well as a significant impact of health programmes on economic growth. Also, there was a positive and significant impact of health programmes on human capital development in Nigeria. The paper recommends, among other things, the need for an increase in government expenditure on health from the ten percent proffered by the national plan to the twenty percent benchmark recommended by UNESCO.

Keywords: health programme, economic growth, human capital development and central bank of Nigeria

Introduction

Health is one of the most important assets a human being has. It permits one to fully develop one's capabilities. The development of such capabilities is the process of developing and accumulating human capital. While human capital is a clear determinant of economic growth, only recently has the role of health in economic growth become a topic for serious academic research. Barro (1996) writes that health is a capital productive asset and an engine of economic growth. Using this argument, we can consider health as a basic component of human capital and thus of economic growth, since human capital is recognized as an agent of national development in all countries of the world. Bloom and Canning (2003) explain that health's fundamental role in economic development stems from the fact that it is both a direct component of human wellbeing and a form of human capital that increases an individual's capabilities.

Although, labour quality in the form of human capital clearly contributes significantly to economic growth, most studies use education as proxy for labour quality. This practice ignores strong reasons for considering health to be a crucial aspect of human capital and therefore, a critical ingredient of economic growth. These reasons include the fact that healthier workers are physically and mentally energetic; they are more productive and command higher wages. They are also less likely to be absent from work because of illness. Illness and disability reduce output and this effect is especially strong in developing countries, where a higher population of the workforce is engaged in manual labour. Furthermore good health is a necessary condition for school attendance since one has to be

healthy to endure the rigors of schooling. Also, healthier students in contrast with their less healthy counterparts have a higher cognitive functioning and thus receive a better education for a given level of schooling which in turn guarantees higher earning over a long period of time.

Meeting the health related United Nations Millennium Development Goals (MDGs) of a reduction by two-thirds in the under-5 mortality ratio and a reduction by three-quarters in maternal mortality, and halting and beginning to reverse the spread of HIV/AIDS, malaria and other major diseases by 2015 requires serious planning and dedicated implementation of health programmes. In response, primary health care is now the

backbone of the nation's health care delivery stem, USAID/Nigeria provides antiretroviral drugs and services to HTV/AIDS patients as well as laboratory support for the diagnosis and monitoring of malaria.

Regarding child health, the country has adopted and implemented to a certain it a number of major global initiatives affecting children such as Roll Back

Maria initiative (RBMI), national programmes for immunization with special emphasis on the eradication of poliomyelitis.

Despite all these programmes and initiatives, the quality of human capital in Nigeria remains low. The human development index was 0.462 in 2010, 0.467 in 2011 and 0.471 in 2012 (UNDP 2012). This masquerades health efforts or achievements and effect on the economy. What really matters in Nigeria is the empowerment of people through education and training. There is also need for the Nigerian government to minimize these constraints toward human capital development so as to enhance rapid economic growth. This study therefore attempts to isolate health effect on economic growth.

STATEMENT OF THE PROBLEM

Despite the effort of the Nigerian government toward developing quality of life and human capital as a means of promoting economic growth, not much appear to have been achieved in this regard as indicated by the United Nations human development index for Nigeria which was 0.471 in 2012 giving the country a rank of 153 out of 187 countries of the world (UNDP 2012).

Most measures of human capital are based on education not health. Education thus takes the pride of place as proxy for human capital. This obscures the contributions of health to human capital as well as its effect on the growth and development of the economy. As a result, a holistic perspective of health cannot be developed neither can an optimal resource allocation policy be developed with regard to health. Although government treats health primarily as a social need rather than an economic factor, health has to be seen as an economic factor because one who is not healthy cannot endure the rigours of education or engage efficiently in production.

This paper x-rays the effects of health programmes on economic growth of Nigeria.

THEORETICAL LITERATURE

The role health plays in economic growth has been dealt upon theoretically by various researchers. Finlay (2007) elucidates that health does play a role in economic growth and development. . He showed that health influences economic growth through education incentive effects. Finlay went further to say that individuals who are healthier live longer, and are encouraged to invest more in education, as returns to education can be enjoyed in the form of higher skilled wages. There are at least three channels that have been identified in arguing that health matters for growth (Aghion, Philippe, Howitt and Murtion, 2010). It is posited that, first, higher life expectancy is likely to translate to higher domestic and national savings which in turn implies higher capital accumulation which again feeds back to higher economic growth. Second, higher life expectancy could imply higher investment in education (individually or by the parents) which implies higher human capital formation which is also expected to translate to growth. Improvements in health raise the incentive to acquire schooling, since investments in schooling can be amortized over a longer working life. Healthier students also have lower absenteeism and higher cognitive functioning, and thus receive a better education for a given level of schooling. It is argued that low child mortality could translate to low fertility rate which in turn slows down population growth and thus could translate to higher per capita GDP. Third, it is posited that better health could imply higher productivity, more creativity and better adaptation to technologies. Healthier people are better workers. They can work harder and longer, and also think more clearly.

Education is widely agreed to affect economic outcomes, and health affects education. A better health care affects a child's attendance at school while poor health directly reduces cognitive potential and indirectly undermines schooling through absenteeism, insufficient attention to lessons, and early dropouts. Also, the effect of a lower mortality and a longer prospective lifespan gives higher incentives to invest on human capital through education. This effect increases the benefit for the individual (Bloom and Canning 2008). The performance of children at school may be hindered by cognitive and physical impairments beginning *in-utero* as a result of the mother's poor health and inadequate nutrition for the fetus. For instance, an estimated 30 million infants are born each year in developing countries with impaired growth due to poor nutrition during fetal life (UN 2000). The failure of children in developing countries to learn in school is often attributed to illness. Under-nutrition among children in developing countries remains one of the impediments to education.

According to WHO (2011), there are 30 million children in Africa and 71 million children in Asia as at 2010 that are underweight as a result of malnutrition and this has stunted their brain development making them to lag behind and perform very poorly academically. The de-worming of children, treatment of anemia, enhanced vitamin A and Iron help promote good health for school attendance. Better education also results in better health for mothers and children because of better access to crucial information and health care. In essence, a good

health care has significant advantages towards education which in turn improves the propensity to generate more income both individually and at the macro level.

Health is a basis for job productivity. Good health has a positive, sizable, and statistically significant effect on aggregate output. Workers' productivity is being enhanced by increasing not just their physical capacities, such as strength and endurance, but also increasing their mental capabilities, such as cognitive functioning and reasoning ability (Bloom and Canning 2005). Healthier workers are more productive and earn higher wages. They are also less likely to be absent from work because of illnesses. Illness and disability reduce hourly wages substantially, with the effect especially strong in developing countries, where a higher proportion of the work force is engaged in manual labour than in industrial countries. Health is a vitally important form of human capital and deserves a high level of attention in the development processes of developing countries.

A better health increases labour productivity which in Poor health affects both the ability to save and the impetus to save (Bloom and Canning 2008). Insofar as increased savings lead to increase investment, workers will have access to more capital and their incomes will rise. A key element in East Asia's economic success was the region's high rate of capital accumulation, driven by an economic high savings rate of around 30% of income (Alsan, Bloom, Canning, and Jamison 2006). A longer lifespan elicits greater savings for retirement. The savings could be transmuted into investments in assets that directly affect productivity such as land, property, machinery etc. On the other hand, infectious disease can lower productivity and deter investments. Health also affects foreign direct investment (FBI). Foreign investors tend to avoid areas where disease is rampant and with limited access to health care. Mushkin (1962) indicates human capital formation with the help of health services and education are based on the argument that people improve themselves when they invest in these assets and will earn a future return with them.

In an early empirical review of the impact of health on economic development, Sorokin (1977) concluded that health, seen through reductions in mortality, had an important impact on economic growth during the early twentieth century. However, he comments that increases in the health status of the population of developed nations will have little impact on economic growth, but the impact could be different for developing nations. For this matter, he points out several ways how health services could have an impact on economic development on developing nations.

The first way is through productivity gains and' increasing man-hours of work. Jack (1999) explains that productivity of labor depends on factors like physical and mental capabilities, investments in human capital and efficiency of labor organization and management, and emphasizes that changes in health could affect labor productivity. Also, labor productivity could be reduced by the need to care for sick relatives or by reducing years of schooling if parents are chronically ill. On the other hand, improvements in health could positively affect the experience level of the work force by increasing their life expectancy and good health status.

The second way is making feasible the development of previously unsettled regions. Sorokin (1977) mentions that a major health program could initiate the development of areas where economic activity was deterred by unfavorable health matters. Bryant (1969) indicates that health services can improve or retard economic development and social and economic changes within a region.

The third way is improving innovation and entrepreneurship by changing the attitudes of people. Malenbaum (1970) used a step wide regression equation with macroeconomic data of 22 poor countries, using agricultural output as the independent variable, with several social, economic and health data as dependent variables. With this, he showed how the influence of health factors on output seems to be larger compared with other economic and social variables. As a conclusion, he suggests that health could change the happenings of the lives of the poor by taking their own decisions and to have the feeling to influence the events on their everyday activities.

Cole and Neumayer (2005) stated that disease and poor health represent a great burden to affected individuals. Also, the welfare losses of sickness are difficult to quantify, but are significant especially in developing countries where some of the world's lowest life expectancies - less than 50 years- are experienced in those sub-saharan African countries that typically also suffer from extremely low levels of per capita income and often lack the resources needed to invest in health care systems, it also seems likely that poor

health will itself retard growth and hence, income. Developing countries would therefore appear to be in a vicious cycle resulting in persistent underdevelopment (Schultz 2005).

Longer life expectancy increases the time over which investment in human capital can be amortized, and therefore should raise investment in schooling. Lower adult mortality also reduces the number of orphans who receive less schooling than children with living parents. (Case, Paxson, and Ableidinger, 2004). There is some evidence that healthier children are also better able to take advantage of schooling, for example through reduced absenteeism and greater mental alertness while at school (Bleakley, 2007). Children may be kept out of school to provide care for family members who are ill. Another channel is the so-called "quality-quantity" trade-off. If disease eradication and the resulting decline in fertility result in households having fewer surviving children, the household budget constraint may be loosened, allowing a greater investment in each child (Kalemli-ozcan, 2002).

One indirect effect of expenditure on education may be its effects on health. Within developing countries, the children of educated parents face lower risks of premature death. This is apparent from analysis of both the World Fertility Surveys and the subsequent Demographic and Health Surveys (Hobcroft, 1993). Parental education is also associated with better child anthropometric status (weight and height), although the association is less marked than that with mortality. However, in socio-economic surveys, educated parents are often more likely to report that their children have been ill. This suggests that educated parents are better at recognizing medical problems in their children. Part of the association between parental education and child mortality may work via household income.

In Uganda, recent work found educated mothers to be better informed about various diseases and that such information was strongly associated with lower child mortality (Mackinnon, 1995). Similarly, in Morocco, mothers' education appears to improve child anthropometric status by providing cognitive skills which increase knowledge about health (Glewwe, 1997). In Cote d'Ivoire and Kenya, educated mothers are more likely to send sick children for treatment (Appleton, 1992).

World Health Organisation (1999), vividly captured the link between health and income. There is proven evidence that adult health depends on child health and itself directly influences labour productivity. In other words, improvements in child health, for instance, which implies reduction in child mortality rates, translate into improvements in adult health in subsequent years. Arising from this, several options are noticeable. First, better adult health implies a reduction in middle-age mortality and reduction in premature retirement. This improves the demographic transition by reducing dependency ratio in the economy with ultimate improvements in per capita income. Besides, improved adult health means longer period of working life. This means higher savings with improvements in the savings-investment ratio. The improved labour productivity emanating from this contributes positively to per capita income. Most studies on the education/health-economic outcomes nexus, both at the micro and macro levels, have generally examined two types of education/health indicators. According to Jafaroy and Gunnarsson (2008) performance indicators are divided into desired outcome and intermediate output indicators.

Desired outcomes correspond to the underlying objectives sought by policy makers. Intermediate outputs are thought to be related to desired outcomes but can be more closely associated with current spending. For health care, the intermediate output indicators are the density of physicians, pharmacists, and health care workers, the number of hospital beds, and the number of immunization vaccines. The key outcome variables include infant, child and maternal mortality rates; the standardized death rate from all causes per 1,000 people as defined by the World Health Organisation; incidence of tuberculosis and average life expectancy (as defined by WHO). For education, the key intermediate output indicators are primary school pupil/teacher ratio, enrolment rate, rates of progression to secondary education and graduation. The main outcome indicator is the average score on an international standardized test in mathematics (secondary education). It must be noted at this point that the intermediate output indicators are highly influenced by government policies in developing countries through fiscal budgetary expenditure. In explaining the performance of health and education sectors in some selected countries, United Nations Development Programme (2008) admitted that in the last quarter of the century, many countries made remarkable advances in education and health. For instance, all 80 countries for which data were available for both 1980 and 2006 have registered progress in education. For most, there have been fairly stable progress over time, although, there was a notable handful of countries which had setbacks during this period. For instance, there were five countries (out of 110 with data) for which education attainment levels were no better than what they were in 1990: Armenia, the Maldives, the Federation of Russia, Tajikistan, and Trinidad and Tobago.

The picture of health was rather worse. There were about 30 countries (out of 180 with data) for which life expectancy were no better today than what they were in 1990. Most of these countries are in sub-Saharan Africa, but many transition countries in Eastern and Central Europe were also in this group as well as Jamaica, and Trinidad and Tobago in the Caribbean.

According to Yesufu (2000), a good health policy is a means by which government can at once ensure that manpower is generated in the right mixes distributed in accordance with national priorities and ensure the highest level of labour productivity. Health improvement influences morbidity and labour force productivity. Thereby enhancing the process and speeding of economic development. Most developing countries have given serious attention to the provision of public health, education and social welfare services. This is because; it is believed that such measures could improve the quality of life of their people and their efficiency as productive agents thereby accelerating the general socio-economic development of their nation. Since health and education status affects the individual participation in economic activities and consequently the level of labour force in an economy, a re-examination of the level of investment in human capital and sustainable growth is highly imperative.

Aigbokan, Imahe and Ailemen(2007) who noted that a cursory look at the magnitude and trend of increase in allocation to health and education sector in Nigeria might be misleading in passing judgment on budgetary performance until they are placed side by side with their percentage allocation. He further opines that the characteristics pattern of the government allocation to education and health in Nigeria as a percentage of focal budget revealed inconsistency and that health and education were not considered as policy target in the overall budgeting or else, they would have maintained an increasing proportion of the yearly budget of the Nation. It would be recalled that the UN international recommended standard for allocation to education sector is 20% of the annual budget in which Nigeria has not for once exceeded 10%, the 2011 budget benchmark stipulated just 8%=

Health comes next to education in the development of human resources (Olayemi, 2010). There is symbiotic nexus between health and education. Education facilitates general enlightenment in the production as well as acquisition of the varied and much needed skills for the transformation of the society, have the tendency to foster a change in the attitudes and habits which may be conducive to the attainment of high health status particularly, amongst people in developing countries where the major causes of death are largely preventable. So also, for the manpower and resources of a nation to be utilized to harness the other resources of a nation, the population must be healthy. Without good health, productivity is low and to ensure adequate productivity, the majority of the population needs to be protected from illnesses. A strong and healthy labour force is an essential factor in development; it signifies not only absence of disease, but also a high life expectancy and absence of disability and discomfort.

Several other mitigating factors relating to human capital development emanate from the health sector. For instance, the Federal Ministry of Health (2005) reported that communicable diseases account for 72% of deaths while non-communicable diseases account for 21%. It further reported that 38% of children are stunted, 29% are underweight, infant mortality rate is 100 deaths per 1000, while under-5 mortality rate is 201 per 1000. These reports are reflections that the health care system in Nigeria is currently weak, thus, limiting the chances of the people and impeding their capability to be part of contributing to the growth of the economy. According to WHO (2001), the preponderance of health-related problems could be attributed to the observed shortage of skilled medical workers at the level of primary health care. The study reported that only 41.9% of primary health care facilities provide antenatal and delivery services and 57.73% of these health facilities works without any midwife. Besides, 18.03% of such facilities operate without midwives or senior community health extension workers (SCHEWs). This calls for the need to support the health system with adequately trained workers in order to improve the provision of health services.

A study by Ahuja and Jutting (2003) examines the design of incentives hi community-based health insurance schemes. According to the study the best way of providing incentives depends very much on the context, that is, the characteristics of the target population and the health risk profile. The study states that 'Health security is increasingly being recognized as integral to any poverty reduction strategy'. The state has not been able to fulfill the health care needs of the poorer sections of its population. The shrinking budget support of health care services, inefficiency in public health provision, unacceptably low quality of public health services, and the recent imposition of user charges all indicate that the state is unable to meet the health care needs of the poor.

Health is central to well-being, and education is essential for satisfying and rewarding life; both are fundamental to the broader notion of expanded human capabilities that lie at the heart of the meaning of development. (Todaro and Stephen, 1982). At the same time, education plays a key role in the ability of a developing country to absorb modern technology and to develop the capacity for self-sustaining growth and development. To them health is prerequisite for increases in productivity, while successful education relies on adequate health as veil. Thus both health and education can also be seen as vital components of growth and development, as inputs to the aggregate production function. Their dual role as both inputs and outputs gives health and education their central importance \pm economic development. Greater health capital may improve the return to investments in education, in part because health is an important factor in school attendance and in the formal learning process of child. A longer life raises the return to investments in education; better health at any point during working life may in effect lower the rate of depreciation of education capital

Goodness of fit: This was done using the adjusted R^2 , the coefficient of multiple determination adjusted for degrees of freedom to establish the goodness of fit of the regression plane. It shows or explains the percentage in the total variation of the dependent variable explained by the change in the explanatory variables.

Overall significance of the model: In order to determine if all the explanatory variables have significant effect on the dependent variable, the f -test was applied.

Decision rule: reject the null hypothesis if f -probability is less than 0.05 level of significance. The analysis was carried out under the hypothesis below:

HQ: $\rho = 0$ (all slope coefficients are zero). HI: $\rho \neq 0$ (all slope coefficients are not zero).

Auto correlation test: The Durbin Watson method was used to test if there is correlation between members of series of observations ordered in time. To achieve this, it was assumed that the values of the random variables are temporarily independent by employing the techniques of Durbin-Watson (D.W).

Decision rule: If d is the lower critical value, d_u is the upper critical value and d is the Durbin-Watson calculated, then, if d is less than d , we reject the null hypothesis of no correlation. If d is greater than d_u , we accept the null hypothesis of no correlation. If d lies between d and d_u , there is inconclusive evidence regarding the presence or absence of positive first order serial correlation.

Normality test: This test was carried out to check if the error term follows the normal distribution by using the Jarque-Bera test for normality.

The analysis was carried out under the hypothesis below; m $H_0: \epsilon \sim N(0, \sigma^2)$ (the error term follows a normal distribution). HI: $\epsilon \not\sim N(0, \sigma^2)$ (the error term does not follow a normal distribution)

Decision rule: reject the null hypothesis if the probability of the Jarque-Bera is less than 0.05 level of significance.

Heteroscedasticity test: To ascertain if the variance of the error term is constant or not, the white heteroscedasticity test was conducted.

The analysis was carried out under the hypothesis below:

H_0 : There is homoscedasticity.

HI: There is heteroscedasticity.

Decision rule: reject the null hypothesis if probability of f -statistics is less than 0.05 level of significance.

Test for Multicollinearity: Multicollinearity is a situation in which two or more explanatory variables in a multiple regression model are highly linearly related. The correlation matrix which is a matrix that gives the correlations between pairs of data sets was used in testing for multicollinearity.

Decision rule: From the rule of thumb, if correlation coefficient is 0.8 and above, we conclude that there is the existence of high degree of multicollinearity.

Stationarity test: To avoid the generation of spurious results, there was need to test for Stationarity using the Augmented Dickey Fuller (ADF) test.

The analysis was carried out under the hypothesis below. H_0 : There is unit root HI: There is no unit root.

Decision rule: If the Augmented Dickey Fuller (ADF) statistics is greater than the critical values (in absolute terms), we reject the null hypothesis.

Test of long run relationship: Theoretically, it is expected that a regression involving non-stationary time series may produce spurious results. Co-integration test reveals whether the combination of stationary and non-stationary variables at a given level do have a long term stable relationship. The Angel and Granger co-integration test was used.

The analysis was carried out under the hypothesis below: H_0 : There is no long run relationship.

HI: There is long run relationship.

Decision rule: If the ADF statistics is greater than the critical value at chosen significance level, we reject the null hypothesis.

In answering the research question, the coefficient of the independent variables was used.

TEST OF HYPOTHESES

The probability of t-statistics of the parameter estimate was used in testing the hypotheses. The hypotheses were tested at 5% level of significance.

Decision rule: Reject the null hypothesis if probability of t-statistics is less than 0.05 otherwise we do not reject the null hypothesis.

METHOD OF DATA ANALYSIS

The method of analyzing the data is the Ordinary Least Squares (OLS) techniques of the classical linear regression model. The choice of this technique is justified by the BLUE properties of OLS.

SOURCES OF DATA

Data used in this analysis are secondary data from the statistical bulletin of the Central Bank of Nigeria (CBN).

FINDINGS.

Health programmes have a positive relationship with economic growth in Nigeria.

This is shown by the positive coefficient of health programmes with a value of 123.45. This finding conforms with the a priori expectation based on economic theory that health programmes is supposed to have a positive relationship with economic growth. This finding also agrees with the findings of Bakare and Sanmi (2011) who reported that there is a positive relationship between health and economic growth. Thus, for a unit change in health programmes about 123.45 of the change will be transmitted to economic growth.

Health programmes have a significant impact on economic growth in Nigeria.

This finding is shown by the t-probability value of health programmes with a value of 0.0000. This implies that health programmes have real impact on economic growth in Nigeria. This finding also agrees with the findings of Aguayo-Rico and Irish (2005) who reported a significant impact of health on economic growth. Since health programmes have a real impact on economic growth, there is need for increased spending on health infrastructure so as to improve the quality of health in Nigeria which will lead to economic growth

Health programmes have a positive relationship with human capital development in Nigeria.

This is shown by the positive coefficient of health programmes with a value of 1.258626 in this finding conforms with the prior expectation based on economic theory that health programmes is supposed to have a positive relationship with human capital development. This finding also agrees with the findings of Bils and Klenow (2001) who reported that there is a positive relationship between health and human capital development. Thus, for a unit change in health programmes about 1.26 of the change will be transmitted to human capital.

Health programmes have a significant impact on human capital development in Nigeria.

This finding is shown by the t-probability value of health programmes with a value of 0.0000 in table 4.16. This implies that health programmes have real impact on human capital development in Nigeria. This finding also agrees with the findings of Bils and Klenow (2001) who reported a significant impact of health on human capital development.

Since health programmes have a significant impact on human capital development, efforts should be geared towards developing health quality through increased funding of health infrastructure so as to improve human capital since health is a basic component of human capital.

Recommendations

These are the recommendations:

1. Government should increase not just the amount of expenditure made on the health sector, but also the percentage of its total expenditure accorded to this sector. The ten percent proffered by the national plan as contained in the National Economic Empowerment and Development strategy (NEEDs) should be geared towards the UNESCO twenty percent international standard. infrastructure and provision of quality health services since inadequate health infrastructure negatively affects social welfare.

3. Efforts should be made to train more health workers with incentives provided to attract more people to take up health related professions.
4. High priority should be given to improving governance at all levels in order to improve health and promote growth. This should go hand in hand with policies to ensure that all sectors of society should have access to affordable health care.
5. Government should encourage private investment in the health sector. Such initiative would provide room for strengthening public health institutions as well as increasing overall efficiency in health service delivery.
6. There should be greater investment in human capital of which health is a basic component as this would increase labour productivity and thereby lead to greater economic growth and generate more income.
7. Finally, there should be less political interference in the management of health institutions so as to leave room for efficient delivery of health care.

REFERENCES

- Acemoglu, D. and Johnson, S. (2007). "Disease and Development: the Effect of Life Expectancy on Economic Growth." *Journal of Political Economy*, Vol. 115, pp. 925-985.
- Adeniyi, M. and Abiodun, L. (2011). "Health Expenditure and Nigerian Economic Growth." *European Journal of Economics, Finance and Administration Sciences*, Vol.30, pp.126-129.
- Aghion, M., Philippe, T., Howitt, P. and Murtion, F. (2010) "The Relationship Between Health and Growth: When Lucas Meets Nelson-Phelps." *National Bureau of Economic Research (NBER) Working Paper No. 15813*.
- Aguayo-Rico, A. and Irish, A. (2005). "Empirical Evidence of the Impact of Health on Economic Growth." *Issues in Political Economy*. Vol. 25, pp. 112- 114.
- Ahuja, R, and Jutting, J. (2003). "Design of Incentives in Community Based Health Insurance Schemes". ICR1ER Working Paper No. 95,
- Aigbokhan B., Imahe O. and Ailemen, M. (2007) "Education Expenditure and Human Capital Development in Nigeria: Any Correlation So far". *Research Paper*. Ekpoma, Nigeria: Ambrose Ali University.
- Akram, N. I. Haq, P. and Khan, M. (2008) "The Long Term Impact of Health on Economic Growth in Pakistan." *Pakistan Development Review* 41 : 4 Part II) pp. 487-500.
- Alsan, M., Bloom, D.E., Canning, D. and Jamison, D. (2006). "The consequences of Population Health for Economic Performance." *PGDA Working Paper No. 13*. pp. 14-15.
- Appleton, S. (1992), *Socioeconomic determinants of education, health and fertility in Africa*, un-published Phd. thesis, University of Oxford.
- Arora, S. (2001). "Health, Human Productivity, and Long-Term Economic Growth." *The Journal of Economic History*, pp. 699-749.
- Aurangzeb, P. (2001), "Relationship Between Health Expenditure and GDP in an Augmented Solow Growth Model for Pakistan: An Application of Cointegration and Error-Correction Modeling." *The Lahore Journal of Economics*., Vol.8(2), pp.1-18.
- Bakare, A.S. and Sanmi, O. (2011). "Health Care Expenditure and Economic Growth in Nigeria: An Empirical Study." *Journal of Emerging Trends in Economics and Management Sciences*, Vol.2(2), pp.83-87.

- Baldacci, E.B. (2004). "The impact of Poor Health on Total Factor Productivity"
The Journal of Development Studies, Vol. 42(6), pp. 918 - 938.
- Baltagi, B.H. and Moscone, F. (2010). "Health Care Expenditure and Income
in the OECD Reconsidered: Evidence from Panel Data." *Economics
Modelling*, Vol.27, pp.804-811.
- Barro, R. J., (1996). "Health, Human Capital and Economic Growth", Program
on Public Policy and Health, Division of Health and Human Development, Paper prepared
for the American Health Organization, November.
- Bhargava, A., Jamison, D. T., Lau, L. J. and Murray, C. J. (2001). "Modeling
the Effects of Health on Economic Growth." *Journal of Health Economics*, Vol. 35, pp.
423-440.
- Bils, M. and Klenow, P.J. (2001). "Does schooling cause growth?" *American
Economic Interview* Vol.90(5), pp.1160-1183.
- Bleakley, H. (2007). "Disease and Development: Evidence from Hookworm
Eradication in the American South," *Quarterly Journal of Economics*. Vol. 27, pp. 201-
210.
- Bloom, D. E. and Canning, D. (2003). " Health and wealth of nations." *Science
Journal*. Vol.287,pp.1207-1209.
- Bloom, D. E. and Canning, D. (2005). "Health and Economic growth:
Reconciling the Micro and Macro Evidence". Center on Democracy, Development and the
Rule of Law. Working Paper No. 42. Pp 2, 3. Stanford Institute on International Studies.
- Bloom, D.E., David E., Canning, D. and Sevilla, J. (2001). "The Effect of
Health on Economic Growth: Theory and Evidence." *NBER Working Paper* No. 8587.
- Bloom, D.E. and Canning, D. (2008). "Population Health and Economic
Growth" *Commission on Growth and Development*. Working Paper No.24
- Bloom, D.E., Canning, D. and Sevilla, J. (2004). "The Effect of Health on
Economic Growth: A Production Function Approach". *World Development*. Vol. 32, No.1,
pp. 1 -13.
- Bryant, J. (1969). *Health and the Developing World*. Ithaca, New York: Cornell
University Press
- Case, A., Paxson, C. and Ableidinger, J. (2004). "Orphans in Africa: Parental
death, poverty, and school enrollment. *Demography journal* Vol. 41(2), pp. 483-508.
- CBN. (2012). "Annual Reports and Statement of Accounts, Various Issues"
Abuja: CBN Publications.
- Chete, C. and Adeoye, O. (2002). "Human Resources Development in Africa".
The Nigerian Economic Society Journal. Selected Papers for the 2002 Annual Conference,
pp 79-102.
- Cole, M. A. and Neumayer, E. (2005). "The Impact of Poor Health on Total
Factor Productivity."
- Dauda, R.S. (2004). "Health Care Spending and the Empirics of Economic

Growth". *Journal of Society ,Development and Public Health*, Vol. 1, pp. 72 - 82.

- Dauda, R.S. (2011). "Health as a Component of Human Capital Formation: Does it Matter for the Growth of the Nigerian Economy?" *Canadian Social Science*, Vol.7(4), pp.207-218.
- Dreiger, C. and Reimers, H. (2005). "Health Care Expenditures in OECD Countries: A Panel Unit Roots and Co-integration Analysis. *Discussion Paper Series*, TZA DP No.1469.
- Duraisamy, P. and A. Mahal (2005) "Health Poverty and Economic Growth in India: In Financing and Delivery of Health Care Services in India," *Background Papers of the National Commission on Macroeconomics and Health*. Ministry of Health and Family Welfare, Government of India.
- FMoH. (2005). "National HIV-AIDS and reproduction health survey."
- Finlay, J. (2007). "The Role of Health In Economic Development". Program on the Global Demography of Aging. PGDA Working Paper No. 21:
- Gallup, J. and Sachs, J. (2000). "The Economic Burden of Malaria." Working Paper No. 52, Center for International Development, Harvard University, Cambridge, MA.
- Glewwe, P. (1997), "How Does Schooling of Mothers Improve Child Health?" *Living Standards Measurement study*. Washington DC: World Bank.
- Grossman, M. (1972). "On The Concept Of Health Capital And The Demand For Health." *Journal of Political Economy*, Vol.80, pp. 223-255.
- Gyimah-Brempong, K. and Wilson, M. (2004). "Health Human Capital and Economic Growth in Sub-Saharan African and OECD Countries." *The Quarterly Review of Economics and Finance*, pp.296-320.
- Hamoudi, A. and Sachs, J. (1999). "Economic Consequences of Health Status: a review of the evidence." Working Paper No. 30. Harvard Center for International Development, Cambridge, MA.
- Hartwig, J. (2010). "Is Health Capital Formation Good for Long Term Economic Growth? Panel Granger-Causality Evidence for OECD Countries." *Journal of Macroeconomics*, Vol.32, pp.314-325.
- Hobcroft, J. (1993) "Women's Education, Child Welfare and Child Survival: a review of the evidence", *Health Transition Review*, Vol.3, No.2.
- Jack, W. (1999). "Principles of Health Economics for Developing Countries." Washington, D.C.: World Bank Institute Development Studies.
- Jafaroy, E. and Gunnarsson, V. (2008):"Government Spending on Health Care and Education in Croatia: Efficiency and Reform Options" *IMF Working Paper Series* 08/136. International Monetary Fund.
- Jamison, D. T. (2003). "Health's Contribution to Economic Growth in an Environment of Partially Endogenous Technical Progress." *Disease Control Priorities Project Working Paper No. 10*.
- Kalemli-Ozcan, S. (2002). "Does Mortality Decline Promote Economic

- Growth?" *Journal of Economic Growth* Vol.7(4), pp.411-439.
- Kalemli-ozcan, S., Ryder, E. and Well, D.N. (2000). "Mortality Decline, Human Capital Investment, and Economic Growth." *Journal of Development Economics*, Vol. 62(1). pp.1-23.
- Lorentzen, P., McMillan, J. and Wacziarg, R. (2005). "Death and development." *NBER Working Paper 11620*.
- Mackinnon, J. (1995), "Health as an Informational Good: The Determinants of child nutrition and mortality during political and economic recovery in Uganda" *Centre for the Study of African Economies Working Paper*, pp.95-99, Oxford: University of Oxford.
- Malenbaum, W. (1970). "Health and Productivity in Poor Areas." *Empirical Studies in Health Economics*. Baltimore, MD: The Johns Hopkins University Press.
- Malik, G. (2005). "An Examination Of The Relationship between Health and Economic Growth." *ICRIER Working Paper No. 185*.
- Mayer, D. (2001). "The Long Term Impact of Health of Economic Growth." *World Development No.1025-1031.Va*. 29 (6), pp. 1025-33.
- Mehrara, M. and Musai, M. (2011). "Health Expenditure and Economic Growth: An ARDL Approach for the Case of Iran." *Journal of Economics and Behavioral Studies*, Vol.3(4), pp.249-256.
- Mushkin, S. J. (1962). "Health as an Investment." *Journal of Political Economy* Vol.70, pp. 129-57.
- Odior, E.S. (2011). "Government Expenditure on Health, Economics Growth and Long Waves in A CGE Micro-Simulation Analysis." *European Journal of Economics, Finance and Administration Sciences*, Vol.31, pp.100-113.
- Olaniyi O.O. and Adams A.A. (2000). "Public expenditures and Human Development in Nigeria" *Human Resource Development in Africa. 2002 Annual Conference papers*, NES, U.L Ibadan pp 157- 198.
- Olayemi, S.O. (2010). "Human Capital Investment and Industrial Productivity in Nigeria"
- Scheffler, R. M. (2004). "Health Expenditure and Economic Growth: An International Perspective." *Occasional Papers On Globalization*, University Of South Florida.
- Schultz, T. P. (2005), "Productive Benefits of Health: Evidence from Low-Income Countries." *Economic Growth Centre Discussion Paper No. 903*, Yale University.
- Sorkin, A.L. (1977). *Health Economics in Developing Countries*. Lexington, MA: Lexington Books.
- Sulku, S.N. and Cancer, A. (2011). "Health Care Expenditures and Gross Domestic Product: The Turkish Case." *European Journal of Health Economics*, Vol.12, pp.29-38.
- Tallinn, I. (2006). "The Economic Consequences of Ill-health in Estonia."

PRAXIS Center for Policy Studies.

Todaro, M.P. and Stephen, C.S. (1982). *Economics for Developing countries.*
Ibadan: Longman publishers.

World Economic Forum (2010-2011), *Global Competitiveness Report 2010-2011.*

UNDP. (2008): *Human development report.* New York: Oxford University press.

UNDP. (2012): *Human development report.* New York: Oxford University press.

United Nations. (2000). *4th Report on the World Nutrition Situation: Nutrition Throughout the Lifecycle.*

Weil, D. (2001) "Accounting For the Effects of Health on Economic Growth." Economics Department, Brown University.

WHO. (1999). "WHO on Health and Economic Productivity" *Population and Development Review*, Vol.25(2), pp. 396-401.

WHO. (2001). "Macroeconomics and Health: Investing in Health for Economic Development. Report of the Commission on Macroeconomics and Health."

Yesufu, T.M. (2000). *The Human Factor in Development.* Nigeria, Ibadan: Spectrum Books Nigeria Limited.

Zon, A. V. (2001). "Health and endogenous growth." *Journal of Health Economics*, pp.169-185.