

## **HEALTH CAPITAL AND POVERTY REDUCTION IN RURAL CROSS RIVER STATE, NIGERIA**

*BY*

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### **ABSTRACT**

The study evaluates the relationship between health capital and poverty reduction in rural Cross River State, Nigeria. It was a survey research. Data for the study were collected through the use of structured questionnaires administered to six rural communities. Oral interview was also used to supplement the information collected. Three-stage sampling technique was employed for the study. The generated data revealed that the health capital variables of health care demand, accessibility and affordability of health care services and the proportion of household income dedicated to health care significantly relate with rural poverty reduction. It was concluded that the reduction of rural poverty independent of improvements in physical and financial access to health would have only a negligible effect on rural health care choices.

**Key words:** Health capital, poverty reduction, rural.

## Introduction

Good health is vital to socio-economic development given that it enables people to participate in economic, social and political development. It is also an important indicator of quality of life and a major contributor to human capital. Improved health leads to improvement in life expectancy and reduces production time wasted, thus resulting in economic development. The linkages of health to poverty reduction and to long-term economic growth is powerful, it can be seen as a vicious cycle. Jeugmans (2001) describe poverty and health as forming a vicious cycle. He asserts that ill health creates and increases poverty while poverty exposes the poor to malnutrition, overcrowding and other health risk as well as affect accessibility and affordability of production hours thus perpetuating the poverty status.

Health is a priority in its own right, the most important asset a human being has as well as a central input in development and poverty reduction. This fact explains the dedication of three of the Eight Millennium Development Goals to Health related interventions. The National Economic Empowerment and Development Strategy (NEEDS) states that the goal of the Needs health component is to improve the health status of Nigerians in order to reduce poverty (NPC2004). This would be achieved by enhancing accessibility and affordability of health services by the rural poor who form the bulk or majority of Nigeria population. It is also indisputable that one's health status determines future income, wealth and consumption.

Economic growth and health indicators have continued to show a strong positive correlation in Nigeria. Nigeria has a GNP of US\$ 36 billion (41 percent of West Africa's GNP). The annual per capita income has been estimated to be \$260, with a Gini Index of 37.5. The incidence of poverty in Nigeria is widespread and increasing with some of the worst poverty linked health indicators in Africa: a life expectancy of 49 for male and 52 for female, nearly 15% of Nigerian children do not survive to their fifth birthday (World Bank, 2000). There is a growing incidence and prevalence of non-communicable diseases. Same trends can be observed in literacy rates. Whereas there have been new challenges, such as increased HIV/AIDS, economic growth still remains a great contributor to health status.

The objectives of the health sector in Nigeria have included reducing mortality, morbidity and fertility through promotion of health care and increasing access to health care services. The government policy is to have affordable and efficient health care system which can be accessed by all people. Strategies towards fighting disease, illiteracy and poverty top the government agenda. The three levels of government – the federal, state and local government areas have responsibilities for the provision of health care. Primary Health Care (PHC) services are the direct responsibility of LGAs while Secondary Health Care (SHC) services come under the State Hospital

Management Board (HMB) and tertiary health services come under the responsibility of the federal government (FMH, 2000).

Most of the Nigerian rural poor attribute their poverty to poor health, unemployment, lack of assets, inaccessible markets, illiteracy, insecurity and economic shocks. This is particularly a serious concern in the rural areas where the number of the rural poor is roughly twice that of the urban poor. Here the depth of poverty has more than doubled. Of the extremely poor, about 85 percent are in rural areas and two thirds of them live on farms. Income inequality is worse with attendant implications for health care demand, access to health care and proportion of income dedicated to health care. The most valuable asset of the poor is their labour, and the productivity of this poor is dependent on their health status. According to the World Bank (2001), the rural poor are often exposed to ill-treatment by social welfare institutions of the state and society and are powerless to influence key decisions affecting their lives. This calls for a stronger integration of the health concerns into the efforts of fighting poverty. Therefore, this study was designed to find out whether poverty reduction has to do with health care capital. The specific health care capital variables considered included; health care demand, access to health care and household income dedicated to health care services.

Good health is both an investment and consumption good. It is an investment good because it enables people to engage in the production process effectively and consumption good because it enables people to enjoy life to its full extent (without pain). Ill-health leads to losses in productivity and time put into production, resulting in poverty. Conversely, poverty leads to poor living conditions, malnutrition and illiteracy, thereby leading to ill-health, thus the vicious cycle of ill-health and poverty.

The health status of the majority of Nigerians and the Nigeria's national health profile continues to be a huge source of concern especially at international fora about global progress towards the attainment of the health related MDGs by 2011. The description of Nigeria as a paradox by the World Bank has continued to be confirmed by events and statistics in the country. The paradox is that the poverty level in Nigeria contradicts the country immense wealth (Obadan, 2003). With an estimated total population of over 150 million people, the health capital has been affected by absence of a better performing health system and health engendering social and economic interventions thus exacerbating poverty in rural communities. Although Nigeria is endowed with the human and material resources, the rural communities have suffered from ineffective primary health care delivery that incorporates qualitative, accessible and affordable health care services, expanded access to potable water, specific health promotion campaign and female schooling (Ahonsi, 2010).

The health value of the human life in rural communities has been degraded because of poverty. The criticality of health capital to rural development should be

accepted because countries which take good care of their citizens' health have much lower levels of poverty irrespective of their per capita incomes. Self treatment and no treatment is dangerous to the long term adverse effects on health, time loss and pain. There is need to establish the critical factors that can boost health capital. This will ensure a healthy rural populace hence reducing poverty level.

### **Objectives of the study**

The overarching objective of this study was to examine the influence of health capital on poverty reduction in Southern Cross River State, Nigeria. The specific objectives of the study were:

- To determine the relationship between health care demand (in terms of choice and affordability) and poverty reduction in rural Cross River State.
- To find out the relationship between access to health care and poverty reduction in rural Cross River State.
- To examine the relationship between household incomes dedicated to health care and poverty reduction in rural Cross River State.

### **Research hypotheses**

1. There is no significant relationship between health care demand and poverty reduction.
2. Access to health care has no significant relationship with poverty reduction.
3. The proportion of household income dedicated to medical services and poverty reduction.

### **Literature review**

#### **Theoretical literature**

Grossman (1972) developed a theoretical model based on the neoclassical framework. This model assumed the existence of certainty in demand for health. In his theoretical formulation, demand for health is considered to have consumption elements (utility is derived from feeling healthy) and investment elements (sound health enables an individual to participate in economic activities and earn income). In this model, the consumer maximizes an inter-temporal utility under conditions of certainty. Health care services enter the utility function indirectly through health capital. The budget constraint in the model is the discounted lifetime full income (Action, 1995). A consumer will therefore demand for health care, hence increase health stock as long as marginal cost of investment in health is lower than the marginal rate of return. Consumption will continue until equilibrium (where the marginal cost of the investment is equal to the marginal rate of return) point is attained. In this model, when the health stock declines beyond a certain positive minimum, death results. The assumption of certainty is a major shortfall since it is

hard to calculate the marginal rate of return (in terms of extra healthy days) against marginal cost (in terms of extra expenditure on health care). With such certainty, rational individual would evaluate the extra resources to be spent to obtain extra healthy days against the extra resources to be gained as a result of the extra healthy days and choose when it is economical to die (Mugilwa, Wasala and Oyugi, 2005).

Christianson (1996) noted that demand decisions for health services are made in stages. After realizing that there is a medical problem an individual has to decide on where to seek care. The final decision is the number of visits to make to a particular or a number of facilities. Overall, Grossman's model implies that the choice of health care services, cost or prices charged by the health facilities available and the distance of health care facilities and proportion of income designed by household to medical services affect the state of health capital thus causing poverty and equally too poverty causes the state of health capital. Both are seen by the model as causes and consequences of each other.

### **Additions to empirical literature review**

In a study carried by Akande (2002) in Oluyoro Catholic Hospital in Ibadan on poverty on social exclusion from health care services, household income and accessibility were identified as factors that affect health care demand. He reiterated that access determines whether an interested individual is able to make contact with services and once contact is made, certain factors may affect a potential client decisions whether or not to use a health care services or facility. His findings revealed that 40 per cent choose cost of treatment as their reason for using Oluyola catholic Hospital, 38.6 per cent used it due to closeness to their houses, and 36.7 per cent preferred the facility due to the caring nature of health personnel. Waiting period for services was not a significant factor.

On the choice of health care services, Philips (1990) revealed that, most poor households must consider their financial situation before deciding on whether or not to take an ill member or the family for medical service due to the problem of free-for-service.

In a study carried out by Onkerhoroye (1999) in Bayelsa State on choice for health care services he identified the following factors as determinants level of income, cost of services, availability of alternative medical services in the locality, perception of attention received in the health care facility, distance to health care facility which involve cost of travel and time spent to reach health facility.

Conducting a household survey on determinants of choice of health care services in Akinleye LGA of Oyo State, Ika and Bornadi LGA in Delta State, Ayodele et al (2001)

observed specifically that Nigerians were faced with cost of medical services and that fees charged were likely to discourage people particularly the poor from choosing

medical health care service. They assert that this trend has increase patronage of herbal and spiritual healers prolonging period of illness, loss of productive hours on illness and care of the sick thus perpetuating the poverty illness vicious cycle.

A survey carried out in Osogbo western Nigeria by INITIATIVE IN Nigeria (2002) showed that the low income population patronized a variety of health care providers; formal medical personnel, private mostly, traditional and spiritual services and seeking high quality services and treatment outcome, preferred centres with kind personnel, prompt service, affordable rate and flexible payment options. The researchers concluded that health care demand (choice) by the low income group is based on quality care service and not distant, low services with flexible method of payment.

The Nigerian constitution guarantees the right to health care but according to Alubo et al (1995) only about 35 per cent of the country's population is estimated to have access to the available health care service due to some socio-cultural factors. Philips (1990) identified the following physical barriers to access to health care as distance, transport cost and time lost as factors which may pave too much for poor people to be able to access health care.

Fields (2000) asserts that poverty does not only act as a barrier or prevents access to health care but also restricts them from participating in decisions that affect their health. Akande (2002) opined that, for the mass of the people at the lower income level found mostly in the rural communities, dwindling resources have severe implications for the people access to and ability to the basic necessities of life. The low purchasing power coupled with high cost of drugs and treatment combine to keep health out of the reach of many Nigerians. This has lead to inadequate access to basic health care.

Fisher et al (2001) stated that, health is a central component of human capital, a building block that can provide people with the capacity to different assets to income, food and other necessities. He explained further that poor families may priorities spending to health services over and above other expenditures in order to ensure that all household members either work or study. In many developing countries such as Nigeria, poor families have to decide whether to use the limited money for medical treatment of one member or food for other members. Adeoti (2009) opined that the cost of medical services causes a huge demand on low income homes which cause some sacrifices on business, selling of household properties, food, school fees, rent and other basic requirements. He concluded interventions to improve household welfare status would assist households provide the means to expend on health and on health inputs necessary to reduce poverty and promote health.

**Empirical literature**

Acton (1995) researched on the non-momentary factors in the demand for medical services. He used a utility maximization model to develop precisions for free and non-free care of users in New York. A simultaneous equation system was used for the outpatients departments and municipal hospitals. The study results showed that non-monetary factors such as distance (economic costs) act like prices in discouraging demand. It also showed that earned income and non-earned income have different impacts, i.e. as money prices out-of-pocket reduced, because of private or public insurance schemes, demand becomes more responsive to time, prices and other non-monetary factors. Acton concluded that access to health care is affected by time taken to health facilities, distance and cost of health services.

Heller (1982) analyzed the determinants of health care services in Peninsular Malaysia. The study sought to determine the sensitivity of households' demand for outpatients and inpatients care to changes in time costs and financial resources, properties of household income dedicated to health care, financial resources available, income and households behaviour of seeking traditional medical practitioners as opposed to modern health facilities and self medication. The study used a logit model and estimated using the two-stage least squares (2 SLS) method after transforming the dependent variable. The results showed that demand for health services as measured by number of visits was very inelastic to cash price, cost in time and income. Consumers were found to respond to the relative prices of alternative sources of health care. As income increased, consumers shifted away from self medication and traditional to modern practitioners. The study concluded that the number of visits to health facilities alongside choice of facilities has a close affinity with household income.

Mwaba (1994) developed theoretical and empirical frameworks for analyzing choices of health care facilities by households during episodes of illness. Data for the study were collected in Meru district of Kenya. The study considered the quality of health care facilities and that consumer have partial knowledge about the facilities because of low level of affordability. The study established that education, quality of health care facilities, income and religion had a statistically significant effect on the choice of facility. The study found economic variables such as time and money costs to marginally influence demand for medical care.

Akin, Griffin, Guilkey and Popkin (1986) developed a model of demand for primary health care in the developing world. The main objectives of the study were to examine medical facility use, household expenditure patterns and to provide an analysis of the demand for medical services. Conditional probit was used for infant immunization, tobit for prenatal care and multiple logit for estimation of outpatient and delivery services. Data were obtained from household surveys from one of the poorest regions of the Philippines conducted in 1978 and 1981. Economic variables

were found to be statistically insignificant, implying poverty and costs have little influence on demand for health care. However, education, rural residence and perceived seriousness of the illness played greater roles in determining utilization patterns of health services.

Nwabu and Ellis (1990) sought to test the effect of the pricing reforms to health care demand on Kenya. They tested the hypothesis that user-charges have a negative effect on demand for health care. They used data on when user-charges have a negative effect on demand for health care. They used data on when user-charges were in place and when the government had suspended it. They used a utility maximization model. The results showed that user-charges discourage the utilization of health facilities.

Glick, Razafindravonong and Randretza (2000) researched on utilization patterns and demand determinants for education and health services in Madagascar. They used nested logit models in their estimation. They found that cost of treatment (price) has negative and significant effects on hospital care. Household income, as represented by household expenditures per capita had strong effects on choice of care, as the better off individuals were more likely to seek care from private doctors, private clinics and private pharmacies than the poor. Availability of health facilities such as vaccines in hospitals and availability of vaccines and malaria increased demand at these facilities. Thus, their study concluded that household income and facilities attributes were significant predictors of health capital.

Lindelov (2002) tested the demand for health care in rural Mozambique using the 1996/97 household survey data in a multinomial logit model. The study findings were that household characteristics (e.g age, education, household income and reported symptoms) significantly affect the demand for health care. Prices, defined in the study as the composite user fees and time costs associated with consultations at different providers were found to be important determinants of choice. The results indicated that the eradication of poverty, independent of improvements in physical access to healthcare and education, would have only a negligible effect on healthcare choices.

At the level of health care provider, (supplier specific characteristics – cost and distance) quality of health care is held as one of the key determinants of choice of health care provider. Studies use different indicators of quality such as: total expenditure per person in the population served (Akin, et al, 1996); presence of well functioning diagnostic equipment such as x-ray machines and number of medical staff (Nwabu et al, 1993); drug availability and physical infrastructure (Ellis et al, 1994). The findings indicated that the availability of essential inputs such as drugs and medical staff is positively associated with the use of medical services.

An individual's level of income and education play a significant role in decision making regarding seeking health care. In developing countries, a strong



relationship has been found between low income and education and the absence of antenatal care. Wong, Porkin, Guilkey and Akin (1997) found that for both rural and urban mothers, the likelihood of choosing public care as the most frequently used option increases as income and education levels increase. Similarly, preference for private modern care to public care and traditional care increased with income and education. Improving the rural dwellers levels of income and education were shown to facilitate the adoption of preventive medicine, particularly in more rural communities (Juarez, 2002). Studies that looked at both rural and urban communities had similar findings. Individuals in households with higher levels of income and education were more likely to use curative care than the less education (Hutchinson, 1999).

The importance of households in the funding of health care not only suggest that households are willing to expend considerable resources on health care, but also underscores the importance of understanding the determinants of household health care expenditure. The percentage of total household expenditures used for health care services increases with the level of household income (Akin, Guilkey and Denton, 1995).

### **Overview of the literature**

The results of the empirical studies have differed in several ways. Some of the studies reviewed have found a statistically insignificant positive relationship between income (wage rate) and the demand for health care. Prices have also been insignificant in some studies. These are not in line with economic theory. This is the reason that stimulated many researches especially in rural sub-Saharan Africa. However, no general conclusive results have been reached. Whereas much work has been done for demand for health care all over the world, little has been done for rural Cross River State, Nigeria. Also there is no recent study done for rural Cross River State, despite the numerous changes that have taken place and the anticipated changes in future. Studies have used different variables but little has been done on health care demand, access to health care and household income dedicated to health care as health capital variables.

### **Methodology**

Data for the study was collected through the use of structured questionnaires which were administered to the rural community dwellers. Oral interview was also used to supplement the information collected.

Three-stage sampling technique was employed for the study. Three Senatorial Districts in the state were selected for the study. From each of the Senatorial District, the following Local Government Areas (LGAs) were randomly selected: Obudu LGAs were selected in the Northern Senatorial District; Akamkpa LGA was selected

in the Southern Senatorial District and Boki LGA was selected from the Central Senatorial District. From these LGAs, rural communities were randomly selected: Six communities were selected from these three local government areas (that is, two communities per local government area). The respondents for the study were systematically selected from the various communities.

Thirty questionnaires were administered in each of the community making a total of one hundred and eighty (180) in all. In each household, the head of the household or an adult female preferably the mother of the house was interviewed. The dominant annual income of the respondents was between the range of N101, 000 and N500, 000.

## Results

### Hypothesis one:

Health care demand has no significant relationship with poverty reduction in rural Cross River State. Pearson product Moment Correlation Coefficient (r<sub>xy</sub>) was employed to explore the relationship between the two variables measured continuously (see table 1).

**Table 1**  
**Pearson Product Moment Analysis of the relationship between health care demand and rural poverty reduction (N = 180)**

Variables	$\Sigma y$	$\Sigma y^2$	$\Sigma xy$	r-cal
	$\Sigma x$	$\Sigma x^2$		
Rural poverty reduction (Y)	1800	4250		
			42153	0.541*
Health care demand (X <sub>1</sub> )	1920	4215		

\*Correlation significant at .05, df = 178, critical r = .118

From table 1, the calculated r-value of 0.541 was found to be higher than the critical r-value of 0.118 tested at 0.05 alpha level of significance with 178 degrees of freedom. From this significant r-value, the null hypothesis was rejected. This meant that health care demand has a significant relationship rural poverty reduction.

### Hypothesis two:

There is no significant relationship between accessibility/affordability of health care services and rural poverty reduction. Pearson Product Moment Correlation

Coefficient ( $r_{xy}$ ) was employed to explore the relationship between the two variables measured continuously (see table 2).

**Table 2**  
**Pearson Product Moment Analysis of the relationship between accessibility/affordability of health care services and rural poverty reduction (N = 180)**

Variables	$\Sigma y$	$\Sigma y^2$	$\Sigma xy$	r-cal
	$\Sigma x$	$\Sigma x^2$		
Rural poverty reduction (Y)	1800	4250		
			43251	0.611*
Accessibility/affordability of health care services ( $X_2$ )	1920	4025		

\*Correlation significant at .05,  $df = 178$ , critical  $r = .118$

From table 2, the calculated value of 0.611 was found to be higher than the critical r-value of 0.118 needed for significance at 0.05 alpha level of significant with 178 degrees of freedom. From this significant r-value, the null hypothesis was rejected. This meant that accessibility/affordability of health care services has a significant relationship with rural poverty reduction.

### Hypothesis three:

The proportion of household income dedicated to health care has a significant relationship with rural poverty reduction. Pearson Product Moment Correlation Coefficient ( $r_{xy}$ ) was used to explore the relationship between the two variables measured continuously (see table 3).

**Table 3**  
**Pearson Product Moment Analysis of the relationship between income dedicated to health care and rural poverty reduction (N = 180)**

Variables	$\Sigma y$	$\Sigma y^2$	$\Sigma xy$	r-cal
	$\Sigma x$	$\Sigma x^2$		
Rural poverty reduction (Y)	1800	4250		
			43256	0.782*

Household income dedicated to health care ( $X_3$ )	1740	4123
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\*Correlation significant at  $P < 0.005$ ,  $df = 178$ , critical  $r = .118$

From table 3, the calculated value of  $r$  of 0.782 was found to be higher than the critical  $r$ -value of 0.118 tested at 0.05 alpha level of significance with 118 degrees of freedom. From the significance  $r$ -value, the null hypothesis was rejected. This means that the proportion of household income dedicated to health care has a significant relationship with rural poverty reduction.

## Discussion

The result presented in the previous section is indicative of generally positive relationship between health capital variables of (health care demand, accessibility and affordability of health care and proportion of household income dedicated to health care) and rural poverty reduction.

The findings support Acton (1995) who researched on non monetary factors in the demand for medical services. He discovered that non-monetary factors such as distance, (economic cost) and prices discourage demand for health care services. Acton also found out that earned income and non earned income have different impacts. As money (prices out-of-pocket) reduce because of private or public insurance scheme, demand become more responsive to time prices and other non-monetary factors.

The study revealed that health care demand by the rural poor is dependent on finance, cost of transportation, cost of services and distance. This finding agree with the observation from a household survey carried out by Ayodele, Idenudia and Madu (2001) in Oyo State, that, Nigerians were faced with cost of medical services, fees charged were likely to discourage people particularly the poor from choosing medical care services. They assert that this trend has increase patronage of herbal and spiritual healers prolonging period of illness, loss of productive hours on illness and care of the sick thus perpetuating the poverty – illness cycle.

As revealed by the study, there is a significant relationship between access/affordability of health care services and rural poverty reduction. The study found out that access to health services depends on the distance to health centre, availability and affordability of services, attitude of health care personnel and flexible method of treatment. This supports the findings of a survey by INITIATIVE in Nigeria (2002) that, the low income population patronize a variety of health care providers, formal, private, traditional and spiritualists. They preferred centers with kind personnel, prompt services, affordable rate and flexible payment options. The findings also validated Philips (1990) assertion that, cost of treatment has negative and significant effect on accessibility to medical care. He identified the following

physical barriers to access to medical care as; distance, transport cost and time lost as factors which may prove too much for poor people to be able to access health care.

According to Lindelow's (2002) household characteristics sickness significant, income level and reported sickness significantly affect the demand for health care. The findings of this study strongly support this assertion. The proportion of household income dedicated to health care is significantly related with rural poverty reduction. Fisher, Holland and James (2001) observed that, in many developing countries such as Nigeria, poor families have to decide whether to use the limited money for medical treatment of one member or for food for other members. Narayan (2001) opined that interventions to improve household welfare status would assist household provide the means to expend on health and non-health inputs necessary to reduce poverty. From this study, it can be derived that household with high income are likely to spend more money on seeking medical care than household with low income.

The importance of households in the finding of the health care not only suggest that households are willing to expend considerable resources on health care, but also underscores the important of understanding the determinants of household health care expenditure. The percentage of total household expenditures used for health care services with the level of household income (Akin, Guilkey and Denton, 1995).

## **Conclusion**

Using communities in rural Cross River State, this study presented a survey analysis of health capital and poverty reduction. The results of the analysis indicate a correlation exists between health capital components of health care demand, accessibility and affordability and household expenditure on health. The study concluded that rural households are less likely to seek care when they become ill but the prevalence and the severity of illness is higher here. The severity of illness may be greater because illnesses suffered in rural areas may be more disabling or perhaps because rural households lack accessibility and affordability to the use of modern health care practitioners.

Based on this study, the reduction of rural poverty independent of improvements in physical access to health, affordability and education would have only a negligible effect on rural health care choices.

While these findings are encouraging, more research is clearly needed on governments can improve the efficiency and financial viability of health service delivery systems in rural Nigeria particularly in light of renewed commitments to improve the conditions for the poor.

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