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EXAMINING THE RELATIONSHIP BETWEEN PRIVATE HEALTHCARE FINANCING AND POVERTY IN EDO STATE, NIGERIA

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Abstract

Private out-of-pocket healthcare financing has been identified as having a negative impact on the income of households and contributing to poverty in Nigeria. This study focuses on Edo State and aims to analyze the effect of private healthcare financing on poverty. The study used a survey method in which a structured questionnaire was randomly administered to a cross-section of households in Edo State. Data was analyzed using descriptive and multinomial logistic regression techniques. The study found that out-of-pocket payments for healthcare were the dominant method of private healthcare financing in Edo State, leading to a negative effect on the income of households. The study recommends the introduction of an effective collective healthcare financing mechanism to reduce the financial burden associated with out-of-pocket spending. In addition, the study suggests investing in research and development of locally manufactured drugs with high local content to improve the availability and affordability of effective drugs. The importance of healthcare financing in reducing poverty is highlighted, and the impact of healthcare spending on national income growth is discussed as a theoretical framework for understanding the issue.

Introduction

Healthcare financing is an issue that demands adequate attention given its pivotal role in the overall performance of national health systems, the wellbeing of individuals, and national economies. A national health system is the vehicle through which health care is provided to residents in an economy. It comprises various components in the health sector that interact to bring about a well-functioning system that responds in a balanced way to meet a population's health needs. It functions to improve the health status of individuals, families and communities and protects the community against all forms of problems that may threaten health and income per capita. It requires the provision of infrastructure to facilitate the delivery of medical services, consultation and diagnostic services, care, medications, technology, and financing functions necessary to make them available when required. The Compendium of U.S. Health Systems (2018) defines a health system as an organization that includes at least one hospital and at least one group of physicians that provides comprehensive care. These include primary and specialty care that are connected with each other through common ownership or joint management. Also, the WHO (2018) described a well-functioning health system as that with adequate health

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infrastructure, modern health technologies, trained and motivated health workers, pharmaceutical industries backed by adequate funding, appropriate health plans, and evidence-based policies.

Since no resources can be mobilized for production without adequate financing, an efficient healthcare financing system is essential for a health system to satisfy the health-based needs of a country. Such a system involves three interrelated parts:

i) Raising adequate funds for the health sector,

ii) Reducing financial barriers to access through prepayment and subsequent pooling of funds in preference to direct (out-of-pocket) private payments, iii) Allocating the raised funds in a way that promotes efficiency and equity.

Growth in all these areas of healthcare financing determines whether health services exist and are affordable for everyone who needs it (Uzochukwu et al., 2015).

How a country finances and manages funds available for its healthcare system is a major means of reducing poverty associated with ill health. However, healthcare spending in Nigeria is characterized by personal "out-ofpocket" spending, which constitutes a burden for poor households that make up 40.1% of the population (Varrela, 2020). This has contributed to the low level of healthcare delivery, high health burden, and high rates of morbidity and mortality in the country. This study therefore investigates the appropriateness of the current method of private healthcare financing using evidence from Edo State in Nigeria. To the best of our knowledge, studies based on household surveys that measure the income effect of private "out-of-pocket" healthcare financing are limited.

1.1. Conceptual Issues

Healthcare financing is a branch of the healthcare system that is concerned with the mobilization, accumulation, and allocation of financial resources to cover the health needs of the providers, individually and collectively, in a country's national health system. It helps patients and healthcare beneficiaries to pay for medical expenses in the short and long terms, and it involves both private and public healthcare financing mechanisms. In relation to private healthcare financing, the main concern is how it impacts the health status of the community by facilitating payments for healthcare services. Public healthcare financing, on the other hand, involves public expenditures geared towards the provision of health facilities, such as building hospitals, providing the latest medical technologies, training and recruiting medical professionals (doctors, nurses, physicians), establishing pharmaceutical industries for the provision of drugs, and paying salaries of health workers. The volume of public healthcare financing is determined by a range of factors, such as the increase in population of the communities and their health status, initial investment in latest medical technologies, the level of health needs of the communities, and the availability of financial resources. Several mechanisms are employed to mobilize resources for healthcare financing in Nigeria, which include government budget sources, such as tax revenues (direct and indirect) and deficit financing. Other sources include foreign donor funding, contributions from domestic philanthropic organizations/individuals, entrepreneurial spending, the national health insurance scheme, community-based health insurance schemes, and user fees. Notwithstanding the diversity of the sources of funding, Nigeria's health system is characterized by inadequate availability of beds, high population to medical professional ratios, and poor health outcomes, such as low life expectancy, and high infant and maternal mortality rates. These may be attributed to grossly inadequate public investment in the health sector and poor health insurance coverage leading to extensive private out-of-pocket payments. According to Aregbesola (2017), the average federal government health spending as a percentage of total government spending is 4% instead of the international benchmark of 15% of government spending for developing countries, and it is less than 1% of GDP. Also, collection of user fees is low because of low capacity and lack of willingness and ability to pay for quality health services due to the high level of poverty as 40.1% of Nigerians live below the poverty line (Varrela, 2020). Poverty, as noted earlier, has many dimensions, including lack of adequate income and lack of opportunities to procure or access basic necessities, such as food, clothing, shelter, health services and education. It is a pronounced deprivation in well-being due to the inability to acquire basic goods and services necessary for

survival with dignity leading to lack of self-esteem and lack of self-actualization. These derivations may include inadequate health facilities and education, lack of clean water and sanitation, inadequate physical security, lack of voice, and insufficient capacity and opportunity to better one's life. Poverty is therefore a denial of choices and opportunities, and a violation of human dignity. It also means a lack of the basic capacity to participate effectively in society, not being able to attend school, being ill and not having a clinic to attend or money to procure quality health care, not having land on which to grow one's own food, or a job to earn one's living, and not having access to credit. Also, poverty may mean more than lack of private resources. If a village has no quality healthcare facilities, no amount of money may be enough to purchase effective and convenient health care within such a village. If a country's healthcare system is weak, all the residents of that nation may not be able to access health care during lockdowns or war as was the case during the COVID-19 global lockdowns.

However, despite the breadth of its concerns, social scientists still find it practical to define poverty largely as lack of adequate income. Hence, the poverty line is measured in monetary terms as a critically low income level below which a basic quality of life may not be sustained. An individual who has an availability of less than 137.4 thousand naira (roughly US$ 361) per year in Nigeria is considered poor (Varrela, 2020). The primary reason for this is that inadequate income is clear, measurable, and of immediate concern for individuals. Another reason is that low incomes tend to correlate strongly with other concerns that are important but harder to measure. For example, those with the lowest health and social statuses tend to come from the bottom of the income distribution ladder, and lack of money also serves as a rough but quantifiable proxy for a host of deprivations (Olusola, 2018).

2. Literature Review

Scheffler (2004) and Bloom, Sachs, Collier, & Udry (1998) stressed that ill health is one of the major causes of poverty hence the importance of universal access to quality health care to reduce poverty. According to Soyibo (2005), a bidirectional causal relationship exists between health and economic growth. Also, Gyimah-Brempong & Wilson (2004) established the existence of a positive relation between investment in health and economic growth in both Sub-Saharan African and OECD countries.

To measure the impact of health spending on national income growth in Nigeria, Obansa, Idris, & Benedict (2013) employed the vector autoregressive method and identified a causal relationship between public health spending and health outcomes. Health is considered a fundamental commodity in the analyses of economic performance of individuals, and Andrew, Nigel, & Paul (2012) observed that health spending is an investment in human capital that aids productivity and growth. Acemoglu, Johnson, & Robinson (2003) also maintained that poor health conditions in Africa determines the differences between the growth rates in Africa and the average growth rates of other countries to a great extent.

Their study further identified three mechanisms through which health could impact the aggregate economic outcomes. These are (i) unhealthy people are less productive, (ii) poor health reduces life expectancy, and (iii) poor health may directly reduce human capital investment. Thus, the human capital theory has identified spending on health as a component of human capital development which promotes health outcomes and thereby growth in national and per capita income levels.

In addition, a poor national health system induces the outflow of medical tourism as high net worth households tend to solve their health problems abroad. This drains the nation's foreign reserves and contributes to national debt. In Nigeria, about one billion dollars is spent on medical tourism annually according to government sources (Ayodele, 2016).

Thus, a poor national health system also affects economic development by diverting demand for healthcare services offshore, increasing mortality among those who cannot afford offshore healthcare services, and whenever overseas travel is impossible, the mortality among high net worth individuals also rises as was experienced in Nigeria during the COVID-19 lockdown. The quality of a national health system is therefore not only a challenge to the health status of a nation, it also adversely affects national income, aggregate demand, foreign exchange reserve and national security.

3. Theoretical Framework

Individual demand for a good health status is both a consumption and an investment as it promotes a person's wellness and enhances their productivity and income, which enables them to avoid aspects of poverty associated with ill health. Social demand for a healthy society, on the other hand, is mainly an investment demand as a healthy society has increased productivity, aggregate spending, and increases revenue for the government. Thus, healthcare delivery is both a private and social good. However, the desirable level of social delivery may be higher than the level that could be sustained if health spending is mainly determined by poor people's willingness to pay. This is because the immediate and direct impact of private "out-of-pocket" payments on poor and vulnerable households may further increase their vulnerability. However, this adversity could be mitigated with a sustainable healthcare financing mechanism, which would reduce private out-of-pocket payments.

A healthy society has reduced absenteeism at work and school leading to higher productivity in the short and long runs. A higher level of productivity increases per capita income and the productivity of government revenue sources. These may raise subsequent levels of both private and public health spending and lead to a more efficient healthcare system that could reverse the direction of health tourism from outwards to inwards leading to an increase in employment and national productivity. However, if private out-of-pocket financing is the dominant mode of healthcare financing, the level of health outcomes achievable may not be up to the level required to achieve the optimum level of economic growth and development.

Figure 1 shows that healthcare financing may come from both private and public sources. Adequate and sustainable healthcare financing may have a positive effect on productivity and increase per capita income and government revenue leading to enhanced capacity for higher private and public healthcare funding in the future. On the other hand, private out-of-pocket funding may adversely affect the personal income of vulnerable households leading to reduced capacity for sustained private healthcare financing.

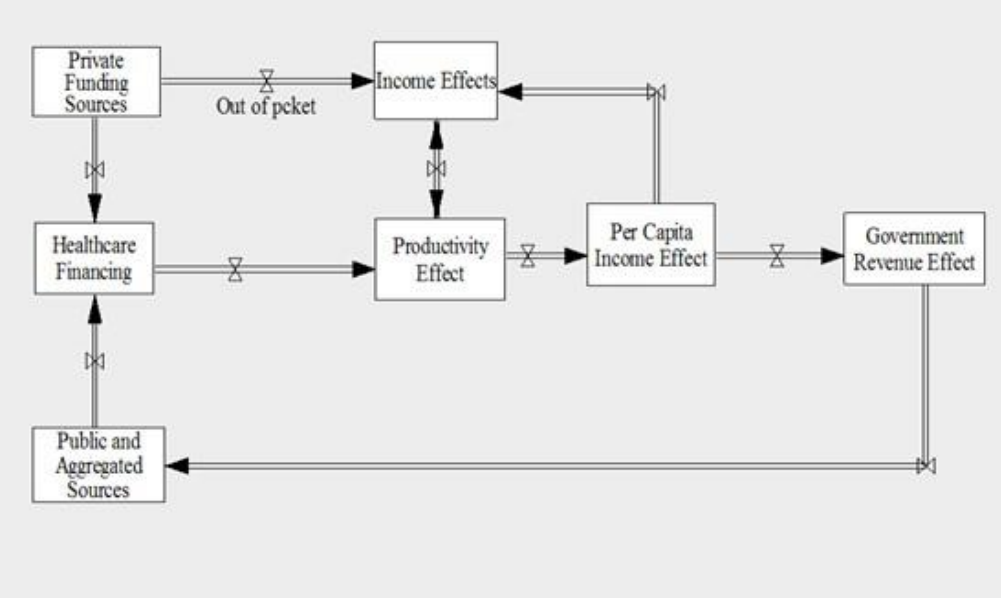

Figure 1. Income effect of health care financing.

This study is therefore anchored on investment theory whereby optimal health stock is attained when the marginal cost of health (MC_H) equals its marginal benefits (MB_H). Like capital stock, which depends on the cost of capital and depreciation rates, health stock depends on the cost of obtaining and maintaining good health ($r+\delta$), where r represents of the cost of transport to access medical care, consultation/diagnosis fees, cost of medication, hospitalization, paying care givers and the cost of the time of unpaid care givers, while δ represents the additional cost of sustaining a healthy status in old age (depreciation cost). This study investigated the income effect of private healthcare financing in Edo State. The income effect of healthcare financing is made a function of private out-of-pocket spending on health care, which includes cost of transport, consultation fees, cost of drugs and the financial burden of medical care using the number of residents with health insurance as a proxy.

This is because the level of public funding and/or funding through an aggregative funding mechanism is inversely proportional to private out-of-pocket spending. For example, if an individual is covered by a health insurance program or the government provides free or subsidized drugs to patients, builds public hospitals and equips and staffs them adequately, out-of-pocket spending on drugs, transportation and consultations will reduce. Therefore, ceteris paribus, high out-of-pocket spending on each of the cost elements is indicative of low levels of public and aggregative spending on those aspects of health care.

3.1. Study Area

The survey was conducted in Edo State, Nigeria. Edo State is located in the northern fringe of the South-South zone of Nigeria and it shares borders with the Kogi, Ondo and Delta States in the North Central, Southwest and South-South zones of the country, respectively. Anambra State in the Southeast zone is just across its boundary with the River Niger. This proximity to four out of six zones of the federation and the presence of residents from across the country makes Edo State fairly representative of the nation. The state is made up of four major ethnic groups – Bini, Esan, Etsako and Owan. Edo State is regarded as the seventh largest Nigerian state with a gross domestic product (GDP) of 11,888 million US dollars. It is therefore neither one of the richest nor poorest states in the nation. The population of the entire state is approximately five million based on the 2016 projected population figure by the national bureau of statistics (Nigeria Bureau of Statistics, 2009). The study adequately covers the state as it sampled residents in six local governments: Etsako West, Etsako East, Esan Central, Esan West, Egor and Oredo, i.e., two local government areas in each of the three senatorial zones of the state.

3.2. Data Collection and Analysis Methods

The study used a survey method in which a structured questionnaire was randomly administered to a crosssection of households in Edo State after subjecting the instrument to a pilot study to test its validity and reliability. Descriptive and multinomial logistic regression techniques were used to analyze the effect of healthcare financing on the income of individual households in the state. The exponential function of the estimated parameters measured the responses of the probability impulse of direct (out-of-pocket) healthcare spending on the income of individual households. The study used primary data obtained from the questionnaires, which were administered from October to December 2018.

3.3. Model Specification

The multinomial logistic regression model was employed for the estimation of the parameters because of its superiority in measuring dichotomous (binary) response variables. It is functionally specified as follows:

$$lnDSHI = (ASTH, ASOD, CD, EHIS) \quad (1)$$

Where: *lnDSHI* is the natural logarithm of the respondents' perceptions on the income effect of private out-of-pocket healthcare financing,

ASTH = the amount spent by respondents on transportation for each hospital visit,

ASOD = the amount spent on medication by respondents, *CD*

= the cost of consultation/medical diagnosis,

EHIS = enrollment in a health insurance program.

The multinomial logistic regression model estimated is as follows:

$$ln\hat{Y} = \beta 0 + \sum \beta 1X1 + \beta 2X2 + \beta 3X3 + \beta 4X4 + ei \quad (2)$$

Since a better health outcome leads to higher productivity and income, the explanatory variables are expected to positively impact the incomes of the respondents. However, given the prevailing high level of poverty in Nigeria, the direct impact of out-of-pocket private expenditure on health care may be catastrophic for poor households and thereby negatively impact their income (Idris & Olaniyi, 2020).

Thus, *X1,X2 , X3 and X4* may be positive, zero or negative; e_i = the error term and is assumed to be normally distributed with a zero mean and constant variance, that is *ei~N[0,1/Nipi(1-Pi)]*.

4. Results

Table 1 shows that 19 (5.5%) of the respondents spent N3,100–N4,000 on transportation to access hospital services, 44 (12.8%) of the respondents spent N2,100–N3,000 and 79 (23%) spent N1,100–N2,000. However,

the majority of respondents, i.e., 181 (52.6%) spent between N100 and N1,000 on transportation to access hospital services. The variation in the amount spent is attributed to differences in distance to hospitals. Thus, the longer the distance, the greater the financial burden for patients. Building more hospitals closer to people's homes will therefore reduce the transportation component of out-of-pocket spending on health care.

Table 1. Distribution of the average amount spent on transportation to hospital.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Unspecified	20	5.8	5.8	5.8
	N3,100–N4,000	19	5.5	5.5	11.4
	N2,100–N3,000	44	12.8	12.8	24.2
	N1,100–N2,000	79	23.0	23.0	47.2
	N100–N1,000	181	52.6	52.8	100.0
	Total	343	99.7	100.0	
Missing	System	1	0.3		
Total		344	100.0		

Source: Field survey, 2018.

Table 2 shows that ten (2.9%) of the respondents spent N16,000 or more monthly on medication, 20 (5.8%) of the respondents spent N11,000–N15,000, and 44 (12.8%) of the respondents spent N6,000–N10,000. Also, the majority of the respondents, that is, 249 (72.4%) spent the least amount N1,000–N5,000 on medication monthly. The differences in the amount spent on medication could be associated with the gravity of the health challenges of patients as approximately 70% of health problems require only primary health care and drugs that are largely inexpensive. Another reason is the availability of health insurance cover, such as the National Health Insurance Scheme (NHIS) or Community-based Health Insurance Scheme (CBHIS), as enrollees of the NHIS pay only 10% of the cost of drugs.

Table 2. Respondents' monthly spend on drugs.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Unspecified	20	5.8	5.8	5.8
	N16,000 and above	10	2.9	2.9	8.7
	N11,000–N15,000	20	5.8	5.8	14.6
	N6,000–N10,000	44	12.8	12.8	27.4
	N1,000–N5,000	249	72.4	72.6	100.0
	Total	343	99.7	100.0	
Missing	System	1	0.3		
Total		344	100.0		

Source: Field survey, 2018.

Table 3 indicates the amounts spent by respondents on medical diagnostic services and consultations. It was revealed that 54 (15.7%) of the respondents spent about N8,100 or more per month on diagnostic services, while 109 (31.7%) spent N4,100–N6,000, 39 (11.3%) spent N2,100–N4,000, and 141 (41%) spent N1,000–N2,000.

Table 3. Respondents' monthly spend on diagnosis.

	Frequency	Percent	Valid Percent	Cumulative Percent

Valid	N8,100 and above	54	15.7	15.7	15.7
	N4,100–N6,000	109	31.7	31.8	47.5
	N2,100–N4,000	39	11.3	11.4	58.9
	N1,000–N2,000	141	41.0	41.1	100.0
	Total	343	99.7	100.0	
Missing	System	1	0.3		
Total		344	100.0		

Source: Field survey, 2018.

Table 4 shows the distribution of respondents' enrollment in any government health intervention programs, such as NHIS or CBHIS, in Edo State. The results reveal that about 189 (54.9%) of the respondents have not enrolled in any government intervention programs to finance their healthcare services, while about 154 (44.8%) have enrolled in either NHIS or CBHIS.

Table 4. Distribution of respondents enrolled in a government health intervention program.

		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	No	189	54.9	55.1	55.1
	Yes	154	44.8	44.9	100.0
	Total	343	99.7	100.0	
Missing	System	1	0.3		
Total		344	100.0		

Note: The estimated multinomial logistic regression results are presented hereunder:

$\ln\acute{Y} = 4.434 + 0.458_{ASTH} - 0.626_{ASOD} - 0.404_{CDG} - 0.687_{EHIS}$

Table 5. Summary of the estimated multinomial logistic results of the model.

Perception of the income effect of healthcare financing (DSHI) (Dependent) variable.					
	B	**SE**	**Wald**	**Exp(B) OR**	**Sig. (P-value)**
Constant	4.434	0.779	32.421		0.001*
ASTH	0.458	0.139	10.818	1.581	0.001*
ASOD	-0.626	0.180	12.080	0.535	0.001*
CD	-0.404	0.101	15.931	0.668	0.001*
EHIS	-0.687	0.150	20.987	0.503	0.001*
Summary Stat. Likelihood (X^2) = 65.769, df = 4, p < 0.001 Nagelkerke's R^2 = 0.234 (23.4%)					

Note: * $p < 0.05$.

Similar to the ordinary least squares (OLS), the summary statistics of the predictors in the model indicates that together they explain about 23.4% of the variance in the outcome as revealed by the Nagelkerke Pseudo-R^2 (see Table 5). However, in the logistic regression, especially when it involves dummy dependent variables, the value of the Pseudo-R^2 normally may come out low. This should not be overly emphasized, as noted by Cox (1958) and cited in Obansa (2011). Gujarati (2004) also stressed that where the regressands are dichotomous, goodness of fit (R^2) is not particularly meaningful. What is important are the signs of the coefficients and their statistical significance. The chi-square (X^2) value of 65.769, df = 4, $P < 0.01$ revealed that, put together, all the variables have a significant effect on the income of the respondents. In addition, each of the independent variables is significant at the 5% level.

With respect to the individual predictors, Table 5 reveals that the parameter estimates of the amounts spent by respondents on transportation to access hospital services (ASTH) are $\beta = 0.458$, Wald Stat. =10.818 and $p < 0.01$, indicating that it is statistically significant at the 5% level. This implies that a unit change in ASTH leads to an increase of 0.458 units in income. This positive relationship may be attributed to the fact that residents get better after-hospital treatment. Consequently, they become more productive and are able to earn more income as the cost of transportation is not a burden to most of them. The low cost of transportation to hospital (see Table 1) eases access to medical care and enhances their health status, leading to higher productivity and higher income. However, the antilog of the parameter (ASTH) shown in Table 5, row 3 column 5, the Exp (B) or the odds ratio (OR) reveals that respondents who visited hospital less frequently for medical care are 58.1% less likely to incur adverse effects on their income than those who needed hospital services more frequently. This shows that those who seek treatment less frequently are less likely to experience negative income effects than those who have to visit hospitals regularly for medical care.

Also, the estimates for the amount spent on medication (ASOD) are as follows: $\beta = -0.626$, Wald Stat. =12.080 and $p < 0.01$.

This implies that a unit change in the amount spent on medication leads to a decrease in income of the respondents by about 0.63%, showing a negative relationship between income and the cost of medication. The odds ratio (OR) Exp(B) of 0.535 (46.5%), estimated as 0.465, showed that, on average, respondents who engage in more out-of-pocket spending on medications are 46.5% more likely to be vulnerable to the negative income effects of healthcare spending than those who spend less. Since obtaining health care should ordinarily stimulate an increase in productivity and higher income, the negative income effect underscores the low income status of a large segment of the population and the catastrophic effect of private out-of-pocket spending on poor households (Idris & Olaniyi, 2020).

The amount spent on medical consultation/diagnosis (CD) also has the following statistics: $\beta = -0.404$, Wald stat.= 15.931 and $p < 0.1$. This implies that a unit change in CD leads to a decrease in income of the patients by 0.404 units of naira.

This showed a negative relationship between the respondents' income and the amount spent on medical diagnosis, which is significant at the 5% level. The estimated odds ratio (OR) of 0.331 indicates that patients who spend more of their income on medical consultation/diagnosis are 33.3% more likely to have adverse income effects than respondents who spend less. The EHIS variable statistics ($\beta = 0.687$, Wald stat. = 20.987 and $p < 0.01$) measured the respondents' perceptions on the burden of healthcare financing on patients who are not enrolled in any health intervention scheme. It indicates that healthcare financing is perceived to exert a 0.68% burden on the income of patients who are not enrolled in any health insurance scheme, and this is statistically significant at the 5% level.

The odds ratio Exp (B) denotes that patients who are not enrolled in any health insurance scheme are 49.7% more likely to perceive medical care financing as a burden. The behavior of ASOD, CD and EHIS in the model supports the postulation that there is a statistically significant relationship between private out-of-pocket healthcare financing and an individual's income. This finding is in line with those of Scheffler (2004) and Bloom et al. (1998), who state that ill health is a major cause of poverty. Also in line with these findings is Rosenthal

(2001) and Kassalow (2001), who discovered that illness is the leading reason why families in China fall below the poverty line.

5. Summary of Major Findings

This study was motivated by the need to analyze the effect on income of private out-of-pocket spending on health care and how any perceived adverse effects on households could be remedied. Acquiring a good national health status is the goal of every national health system and it entails both direct and indirect costs financed either by individuals (patients) or the public sector. Individuals undertake healthcare financing or spending to improve their health status. This should increase an individual's productivity leading to higher income, improved wellbeing and longer life expectancy. Paradoxically, health spending could be a critical decision for low income households, especially for those without sufficient public support or insurance coverage, as out-of-pocket health financing among poor households may be catastrophic and lead to further impoverishment.

The descriptive analysis of the study revealed that the majority of the households undertook out-of-pocket expenditure, as 189 (54.9%) of the respondents were not enrolled in any form of health insurance scheme at either national or state levels, and only 154 (44.8%) were enrolled. The case is even worse at the national level as less than 5% of Nigerians, who are mainly federal government workers and their dependents, were covered by the NHIS scheme as of June 2017 (Aregbesola, 2017). Thus, out-of-pocket health financing is the main source of private healthcare financing in Edo State, which constitutes a financial burden for low income families.

This study has established that health financing, especially direct out-of-pocket payments, is a major public health challenge for the majority of households in Edo State who are low income earners. The cost of transportation to hospital did not constitute much of a problem, as the distance to hospital for the majority of respondents is relatively short. However, those who attend hospital less frequently have a less adverse effect on their income. This shows that eliminating the cost of transport to hospital will enhance the effect of healthcare delivery on income. This can be partly achieved by removing the cost of ambulance services at least for critically ill patients. The cost of drugs and medical diagnosis are negatively related to the respondents' perceived income effect. This shows the need for increased public healthcare financing through research and development of drugs with high local content to reduce the cost of medication. In addition, the cost of medical diagnosis should be reduced by equipping public health facilities with diagnostic equipment so that services can be accessed at a lower cost. Also, the parameter that measures enrollment in healthcare intervention programs show a low level of patronage of such programs, hence the negative impact which shows that healthcare financing is a burden to the majority of respondents. Governments at both state and federal levels should therefore reorganize the healthcare intervention schemes to make them more user friendly and more efficient. This study also observed that the poor health outcomes of the national health system leads to the outflow of medical tourism, depletes available foreign exchange and, through the multiplier effect, reduces national productivity and the employment generation capacity of the economy. Furthermore, the occurrences of death of high net worth individuals in the country during the COVID-19 global lockdown that put foreign medical services out of their reach shows that a strong national health system is also a national security concern.

6. Conclusion and Policy Recommendations

In conclusion, the government should increase healthcare financing by allocating funds more efficiently among the various components of the national health system, such as the provision and distribution of primary, secondary and tertiary health facilities. Also, investment in medical, pharmaceutical and pharmacological research should increase in order to produce drugs with high local content so that the cost of drugs can be reduced. In addition, professional hospital managers should be recruited to manage available resources efficiently to reduce the burden of healthcare financing. Last, the health insurance schemes at the national and state levels should be made more attractive to encourage enrollment so that out-of-pocket healthcare spending can be reduced to a minimum.

Although the study is limited to the analysis of the income effect of out-of-pocket health spending in Edo State, the findings can be extended to all of Nigeria and other parts of Africa where similar conditions prevail. We

therefore suggest a national survey on the income effects of healthcare financing and its impact on poverty reduction in Nigeria and other parts of Africa.

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