

Equity in Healthcare Financing: An Empirical Investigation of Nigerian Situation

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Abstract

This study measures the extent to which healthcare payment in Nigeria deviates from proportionality in healthcare. The methodology is guided by Kakwani Progressivity index (KPI) and data were extracted from the most recent Nigerian Living standard survey (NLSS) conducted in 2018/2019. It was observed that the healthcare payment system is regressive, which suggests negative vertical inequity. Implying that when the size of the income received and size of healthcare payment from income among the five socioeconomic groups is compared, the health payment system favours the non-poor. This paper suggests that an active alternative means of paying for healthcare services should be provided to close the gap between income and healthcare payment that will result to equity in healthcare payment. Specifically, healthcare payment policy that will make the poor to be at par with non-poor should be introduced.

Keywords

Equity, healthcare, financing, health expenditure

Introduction

Healthcare financing implies ways or means of paying for health utilisation or expenditure. In many developing countries, government pools resources together to ameliorate the health sector, but the amount allocated is not enough to sponsor the facilities and services rendered by this sector. Generally, healthcare is majorly financed via public financing (allocation from government budget and social health insurance) and private financing {Out of pocket payments (OOPs)/user fee, private insurance and community financing}. However, among the identified financing methods, out of pocket payments dominate most health system in developing countries.

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Nigeria operates mix method of health financing but the dominating healthcare financing method and the oldest is out of pocket/user fee. The scopes of OOPPs differ and usually involve combination of cost of drugs, cost of treatment, consultation fee and cost of laboratory tests. Out of pocket payments are ranked as highest payment in total health expenditure (THE) in Nigeria. Approximately 65 percent of the total health expenditure account for OOPPs between 1998 and 2002 on an average. In 2003, OOPPs was around 74 percent of THE. It fell to 66 percent in 2004 and later rose by 2 percent in 2005. In 2011, 60.4 percent of total health expenditure was from private health expenditure of which 95.4 percent of this was from OOPPs and the remaining 4.6 percent for private health insurance. Between 2014 and 2017, OOPPs fluctuates between 73.1 and 75.0 and serves as 96 percent of private health expenditure in Nigeria.

This statistic proves that households bear the highest burden of health expenditure in Nigeria. Although, the three tiers of government contribute to health financing but their contribution is relatively low to relief this burden when compared to some selected countries in Africa. The THE as percentage of the gross domestic product (GDP) from 1998 to 2005 was less than 5 percent, which is low compared to what operate in Zambia (6.2 percent), Kenya (5.3 percent), Malawi (7.2 percent), South Africa (7.5 percent) and Tanzania (6.8 percent). To further reaffirm that government expenditure is low in Nigeria, Oaikhean and Umoru (2012) noted that government expenditure in many developing countries is low, yet healthcare needs are increasing all over the world including Nigeria.

The Nigerian health system is poor in the provision of care and accessing healthcare is complicated by the fact that majority of Nigerians including the poor pay for healthcare from their private pockets. Apart from the inefficiency in public healthcare, high price of medical services and disparity in health outcomes, there is also a wide spatial disparity in healthcare expenditure and its delivery across Nigeria, highlighting the concerns of equity (NSHDP, 2010). The World Health Organisation (WHO) described equity in healthcare as the absence of avoidable differences among groups of people, whether those groups are defined socially, economically or geographically in accessing healthcare.

It is usually the case that poorest people benefit less from the health systems than the non-poor and the cost of healthcare usually imposes huge burden on the poor households. According to O'Donell *et al.* (2008), the poor suffer higher rates of mortality and morbidity than the non-poor. They often use health services less, despite having higher levels of need and this is because they have low access to other health related goods and they are more vulnerable to diseases compare to the non-poor (WHO, 2010). However, the burden on household could not have been high if there is low poverty rate, little income disparity and low dependency ratio. In a country where more than three - quarter of the population are poor (over 80 percent of the population live

below poverty line). The implication is that the poor will be spending substantial proportion of their income on health, more so that demand for healthcare is relatively inelastic. This will translate into disproportional spending on health by the poor and the rich.

It is no longer an argument that most Nigerians still live on at most 1 dollar per day, while the poverty rate is high to the tune of 89.2 percent of which 84 percent are youths and 5.2 percent are elderly people. The major infectious diseases in this country are bacteria and protozoal diarrhea, hepatitis A and E, typhoid fever, malaria, dengue fever and yellow fever, Leptospirosis and schistosomiasis, meningococcal meningitis, Lassa fever and rabies which emanated from food or waterborne diseases, vector borne diseases, water contact diseases, respiratory disease, aerosolized dust or soil contact disease and animal contact disease respectively (CIA, 2014). Nigerians suffering from the identified diseases seek care from either orthodox or/ and traditional health centres. The utilization of either orthodox or traditional treatment by Nigerians depends largely on availability, socioeconomic status, tastes and preferences, distance, belief and type of settlement.

Two forms of medicines exist within the Nigerian health system - orthodox and traditional medicines. The health system is dominated by orthodox medicine which cut across private and public sectors. Both sectors operate alongside each other to provide healthcare services in Nigeria, though the sector is structured along the universal three levels of primary, secondary and tertiary care. In 2005, health facilities stood at 23,640 in Nigeria of which approximately 86 percent are primary healthcare facilities, 14 percent secondary and less than 1 percent is tertiary care in the country. It is not surprising that less than 40 percent of these facilities are privately owned, which provides above 60 percent of healthcare in the country, while 60 percent of the public primary health facilities are located in the Northern zones of the country. These facilities are mainly health posts and dispensaries that provide only basic curative services (FMOH, 2005; NSHDP, 2009).

The number of primary, secondary and tertiary healthcare shows an upward trend from the inception in 1977. In 1992, about 4000 health dispensaries and clinics were responsible for provision of primary healthcare across the country. Around 700 healthcare centers cater for secondary healthcare as well as about 1,670 maternity centers. About 12 university teaching hospitals with 6,500 beds were handling tertiary care. In 1999, there were an estimated less than 1 percent physicians and 1.7 hospital beds per 1,000 people. In terms of facilities in 2011, the Federal Ministry of Health (FMOH) estimated a total of 30,000 health facilities in Nigeria, out of which 88 percent were primary healthcare facilities, 11 percent secondary and 1 percent tertiary. The 53 federal owned tertiary facilities provide specialist services, which are mostly not available at the secondary and primary level, with the teaching hospitals also providing training for health workers and

research (Rio+20 summit June, 2012). Although, this estimated number of healthcare centres and facilities did not ignore the fact that Nigeria health sector is still backward as compare with 191 ranking in the world.

Traditional medicine (TM) had been in existence before the orthodox medicine in Nigeria. It is broadly described as health practices, approaches, knowledge and beliefs incorporating plant, animal and mineral based medicines, spiritual therapies, manual techniques and exercises, applied singularly or in combination to treat, diagnose and prevent illnesses or maintain well-being (WHO, 2013). Despite the expansion of the orthodox medicine in both infrastructure and human resources, some Nigerians still utilize TM because of the efficacy and affordability of some herbal remedies and traditional therapeutic regimen (Traditional Medicine policy for Nigeria, 2007). Adefolaju (2011) averred that TM has impacted significantly on the lives of the people especially in the rural areas, where access to orthodox medicine is minimal as well as the prohibitive cost of orthodox medicine. Hence, most researchers have concluded that integrating both traditional and orthodox medicines will go a long way in promoting healthcare delivery in Nigeria (see Adefolaju, 2011; Abdullahi, 2011 and Afolaju 2014). TM is mostly used in the rural areas where it is difficult to access the orthodox medicine due to distance and cost. This paper sought to empirically investigate the degree of inequity that characterizes the financing of healthcare in Nigeria as a whole and also compares the rural and urban areas results using the Nigerian Living Standard Survey (2018/2019). The paper is divided into five. Following this section of introduction is the review of relevant literature. The third section dwells on theoretical framework and methodology, fourth section is for presentation of empirical result and discussion and final section is for conclusion and recommendation.

Literature Review

The application of equity becomes imperative in economics due to scarcity of resources and utility derivation, which is rooted in welfare economics. However, theories of equity or social justice are from philosophical discourse but have been used in relation to health and healthcare. The analysis of healthcare is based on normative theory, which is analysed through welfarism that judge wellbeing from assessing utility only or extra-welfarism using subjective health (Hurley, 2000). Welfarist analysis is mainly dependent on individual's resources or ability to pay as money metric to derive utility or benefit from healthcare. The literature argues that healthcare should not be allocated to maximise consumer's utility but rather to maximise the health of a nation (Feildstein, 1963). This led to application of the utilitarian theory in health economics to maximise social welfare function, which requires adding up individual welfares instead of individual's utility function. But individuals' resources still play dominant role in social welfare function. This similar idea also stems from libertarians in philosophy; private healthcare sector should

dominate the system, with healthcare being rationed primarily according to willingness and ability to pay. Government involvement should be minimal and limited to providing a minimum standard of care for the poor (Wagstaff and Van Doorslaer, 1998).

Proponents of extra-welfarism argue that utility is not the only relevant criterion in the social welfare function but 'need' and outcome of healthcare are important to achieve good health of a nation. Ideally, ability to pay for healthcare should not be the major factor for depriving individual of consuming healthcare. As a matter of fact, some basic goods and services (like healthcare) should be allocated in an egalitarian way than others (Tobin, 1970; Rawls, 1971). On one hand egalitarians consider healthcare as human right, individual is expected to enjoy health related factors equally to protect their health under the equality scenario. On the other hand, healthcare equity is described as equitable access to medical care at a time when individual needs care and at an affordable cost. However, Sen (1992) avers that equality scenario does not mean equality to enjoy all healthcare but rather those with equal needs should be treated equally (horizontal) and those with unequal need should be treated unequally (Vertical). Nonetheless, between welfarism and extra welfarism arguments, two specific theories are identified in the literature in relation to equity in healthcare - Libertarian and Egalitarian. Between the two theories, egalitarian gives room for everyone to participate in the healthcare market irrespective of the types of participants and wealth of the consumers while libertarian encourages the participation of wealthy individuals.

Methodology applied in the literature shows that tabulations method for healthcare payment, Lorenz Dominance analysis, Kakwani Progressivity Index (1977), and Reynolds and Smolensky (1977) are the methods of analysing vertical equity in healthcare financing. At the empirical front, the most prominent methods of financing healthcare in developed countries are taxation, social insurance and private insurance, which have been found in studies to be regressive or progressive, attributable to the duality of the healthcare system's insurance payments. Studies like Mtei *et al.* (2012), Wagstaff and Van Doorslaer (1998), Akazili *et al.* (2012) and Chai Ping *et al.* (2008) found most of them progressive. The other common method of financing in both developing and developed countries is OOPs method of financing healthcare. Majority of the studies found it to be the most regressive method with the burden of OOP expenditures being unequally distributed among income groups (Miroslav and Jadranka, 1999; Mohamad *et al.*, 2008; Cisse *et al.*, 2009; Mtei *et al.*, 2012; Akazili *et al.*, 2012; Mills *et al.*, 2012; Olaniyan *et al.*, 2013; Ewelukwa *et al.*, 2013; Luca and Paola (2014), while few authors like Chai Ping Yu *et al.* (2008) and Ichoku *et al.* (2011) found OOPs to be mildly or moderately progressive.

Theoretical Framework

The egalitarian approach gives room for everyone to participate in the healthcare market irrespective of the types of participants and also allows for everyone to enjoy health related factor equally. Going by Sen (1992) argument that everyone can not equally enjoy all healthcare but rather those with equal needs should be treated equally (horizontal approach) and those with unequal need should be treated unequally (vertical approach), the underlying approach for this paper is the vertical approach under the egalitarian theory/approach. Meanwhile, the vertical approach is more understandable through the Kakwani index. Kakwani index is the method of estimation in this paper, which is explained with empirical and geometric representation. A positive (negative) Kakwani Index indicates a progressive (regressive) financing mechanism and zero Kakwani index is an indicative of proportional financing. The geometric illustration of the index is recognised as the Lorenz curve (shows the extent of income inequality in a society) and CI is the payment concentration curve (indicates the cumulative proportion of the population), categorized from the first income quintile to the highest income quintile, in relation to the cumulative proportion of Healthcare payments. The cumulative proportion of income and payments are on the vertical axis, while the cumulative proportion of the population is on the horizontal axis. Thus, for the payment concentration curve to (G_{pay}) be above the Lorenz curve (G_{exp}), it is an indication that the lower income groups contribute a larger portion to total healthcare payments than the proportion of income they earned, implying that the system is therefore inequitable. If the reverse is the case, it is also an indication of an inequitable system. If the concentration curve is on top of the Lorenz curve, it indicates direct proportionality. In a rear occasion, the financing curve may cross Lorenz curve, which suggests that the financing system is more than one i.e. is regressive for some income groups and progressive for others. If the financing curve crosses the Lorenz curve, negative and positive values cancel each other out, and the overall index is ambiguous (Shakarishvili, 2006 cited in Olaniyan *et al.*, 2013).

Methodology

The underlying theory used for this work is the egalitarian approach. Both vertical and horizontal equity are attributed to egalitarian approach in area of healthcare financing, the vertical principle emphasizes that households with dissimilar treatment be treated as not the same that is treatment should be according to ability to pay. The extent of vertical inequity can be measured using Kakwani Progressivity Index (KPI) which explains the degree to which payments schedule departs from proportionality. Kakwani is an important index, which provides details about the deviation from proportionality. It is a synopsis measure, and its detail may be sometimes misguided if the distributions underlying the Kakwani index are not seen as the same (Luca and

Paola, 2014). An important feature of Kakwani's index is that the total index for a financing system with two or more sources of finance is a weighted average of the indices for the single sources, where the weights are the share of each source in total revenue. Thus, the progressivity features of a healthcare financing system rely on the proportion of total revenues generated from each source and the degree of progressivity of each of these sources. However, it is possible for a financing source (or a tax) to be regressive (or progressive) at low income levels but progressive (or regressive) at high income levels (Wagstaff and Van Doorslaer, 1998).

The framework for the model adopted in this paper is adapted from the work of Luca and Paola (2014). The model estimates the health payment concentration Index and Gini coefficient to affirm the extent of variation in the payment proportionality. Although in their work, geopolitical zones dominate their analysis but it is excluded in this work. In this framework, we assume a model that captures total aggregate payment because the available data did not cover other different sources of payment for healthcare except OOPPs which is of the below form:

$$K_p = CI - Gini_pre \quad \text{-----} \quad [1]$$

Where K_p represents Kakwani Progressivity Index, CI as concentration index and Gini_pre as Gini coefficient. Kakwani index is generated as the dissimilarity between the concentration index (post healthcare income) of each financing source and the Gini index calculated on the households' income before taking into account any healthcare expenditures (prepayment income). If the two indices value is the same, the difference between the CI and the Gini index is zero and the source of financing can be considered as proportional to income. The kakwani index for this paper could have measured different financing sources but due to unavailability of data and the most common expenditure on health expenditure in Nigeria is OOPPs as such only OOPPs is considered.

CI doubles the area between the concentration curve of the source of health payment and the 45⁰ line. It specifically explains whether the considered variable for the analysis is more concentrated among the poor (index is negative for the equality line below the concentration curve) or among the non-poor (the curve lies below the equality line and the index has a positive value). Due to unavailability of data, the data used for the Gini_pre is calculated using household expenditure. Gini can be calculated as of the form:

$$Gini = \frac{\text{Area A}}{\text{Area A} + \text{Area B}} \quad 0 \leq Gini \leq 1 \quad \text{-----} \quad [2]$$

Value 0 implies perfect equity and 1 implies perfect inequity

Area A is calculated using Trapezoid:

$$\text{Area A} = \sum \left[\frac{a+b}{2} h \right] \quad (\text{between } 45^0 \text{ and Lorenz curve}) \quad \text{-----} \quad [3]$$

- a- base
- b- base
- h- height

In the normal trapezoid, \sum is not included but because the area required involves different trapezoids.

$$\text{Area B} = \frac{1}{2} bh \quad (\text{entire area below } 45^0 \text{ line}) \quad \text{-----} \quad [4]$$

From equation (1), CI is of the form:

$$CI = 1 - 2 \int_0^1 L(p) dp \quad \text{-----} \quad [5]$$

Method of Analysis

To empirically explain and estimate the direction of equity in financing healthcare in Nigeria, we used the most recent Nigeria Living Standards Survey (NLSS) data of the year 2018/2019 to generate Kakwani index. The recent NLSS was designed and computed through the Computer-Assisted Personal Interviewing (CAPI) devices. The survey sampled 22,110 households in the country with exclusion of Borno state due to security challenges. In the survey, overall average household size is 5.06 per family, 5.42 persons per family for rural and 4.50 for urban. The ratio of males to females is 49.2 to 50.3. On average, households in Nigeria are mostly headed by males (81.2 percent) and 18.8 percent households are headed by female household member. The data extracted from the survey for this paper are socioeconomic factors, which are income and residence area (urban or rural). Data on income is difficult to source due to high dependency ratio and different sources of income (income includes both formal and informal sources, which is not captured in the survey) as such household income was proxied by household expenditure (food and non-food consumption). In order to specifically figure out the most affected income group, this paper divides household expenditure into quintiles ranging from first quintile (poorest group) to fifth quintile (richest group). However, there is a caveat on the data; the household data were adjusted for household size to do proper analysis.

Results and Discussion

The results of the analysis in this paper are the major focus of this section. The output of the results presented in the below tables are generated using the Adept 6.0 software package. The number of observations reduced from 22,110 to 22,080 due to unmerged household identification numbers that were

dropped. Table 1 shows that the number of observations for out of pocket (OOP) is lower than others. This is as a result of missing value, which is expected since some households were not reported ill/injure to have paid for treatment cost. The mean for OOP amounts to ₦20,978.1 and ranges between ₦100 and ₦557,000. The median is ₦10,725.0 and it is less than the mean, which is an indication of expected right skewed distribution of health expenditure variable. On average, household size is 5.3 and ranges between 1 person and 42 persons per household. An average household spent ₦665,743.4 per year, with a minimum value of ₦1,200 and maximum value of ₦33,969,060 annually. The mean age of the head of household is approximately 48 years with 12 years and 120 years representing minimum and maximum age respectively.

Table 1: Descriptive statistics

Variables	N	mean	min	max	p1	p50
Household size	22,080	5.3	1.0	42.0	1.0	5.0
Total consumption	22,080	665,743.4	1,200.0	33,969,060.0	55,290.0	495,175.0
Out-of-pocket	664	20,978.1	100.0	557,000.0	500.0	10,725.0
Age	22,080	48.4	12.0	120.0	22.0	46.0

Data source: NLSS 2018/2019

Table 2 shows the per capita consumption before payment for healthcare and after payment for healthcare including the share of each group as well as the healthcare payment (out of pocket). We observe a variation in income among the socioeconomic groups in Nigeria (see Table 2). Out of the total per capita expenditure, the first quintile has a share of 4.2 percent, second quintile has 8.6 percent, third quintile accounted for 13.8 percent, fourth quintile claimed a share of 22 percent and the last quintile has a largest share of 51.4 percent of the total expenditure. This implies that an individual in the first, second and third groups are worse-off compared to other groups since they do not get up to 20 percent of the total expenditure. An individual in the last quintile got approximately 12 times of what an individual in the first quintile got, 6 times of an individual in the second quintile, 4 times of an individual in the third quintile and more than double of what an individual in fourth quintile would share. An individual in the fourth quintile got almost 5 times of an individual in the first quintile, more than double of an individual in the second group and almost one and half of the third group in terms of share of expenditure. The implication of this, is that 20 percent in the fourth and fifth have more than 20 percent of the total per capita expenditure which invariably implies that the fifth quintile has the highest percentage share of income, follow by the fourth quintile in the country. By implication, there exist inequitable distributions of income in Nigeria.

Another result discernable from table 2 is that out of the total per capita consumption, the percentage share of healthcare payment is just 10 percent, which suggests that the remaining amount is used for other consumption goods. Looking at the share of OOP, it is obvious that as the income is increasing, the share of OOP is increasing too. For instance, the share of per capita consumption for the poorest (Q₁) household is 4.2 percent and the corresponding share of OOP is 6.8 percent, which is 12 times and 5 times lesser than the richest (non-poor) household (Q₅) respectively. A closer scrutiny of the percentage share of healthcare payment indicates that the poorest household pays 20 percent of his/her income on healthcare while other income groups pay 10 percent each. This indicates that the share of OOP from per capita consumption is double for the poorest household than any other groups. A further scrutiny of the table also indicates that the percentage share of OOP from per capita consumption for Q₂ to Q₅ is the same, which may be adjudged equity in payment among the last four income groups on mere percentage calculation.

Table 2: Average Per Capita consumption and Health Finance

Group	Per capita consumption, gross	Out-of-pocket	share of per capita consumption	share of OOP	% share of healthcare payment
Q ₁	26,595.8	40.6	4.2	6.8	0.2
Q ₂	54,272.1	81.2	8.6	13.5	0.1
Q ₃	87,156.4	102.9	13.8	17.2	0.1
Q ₄	139,556.9	155.2	22.0	25.9	0.1
Q ₅	325,346.5	219.9	51.4	36.7	0.1
Total	632,927.7	559.9	100.0	100.0	0.1

Data source: NLSS 2018/2019

Q₁- 1st quintile (poorest), Q₂- 2nd quintile (2nd poorest), Q₃-3rd quintile (middle), Q₄ - 4th quintile (2nd richest) and Q₅-5th quintile (richest)

Table 3 shows the Gini coefficient, concentration index and Kakwani index for the entire country, rural and urban outcomes. Recall that in section 3.1, Kakwani is the dissimilarity between concentration index and Gini coefficient. The value of Gini coefficient ranges between 0 and 1. A zero coefficient represents an equal society where there is no income gap. This case is a situation where the line of equality and Lorenz curve lies on each other. The value of the Gini coefficient increases as the Lorenz curve move farther from the line of equality. Also, when a group of individuals or an individual owns the entire income in a society, the Gini coefficient is 1 or 100. The result shown in Table 3 is a clear indication of an income inequality in Nigeria in 2018/2019. The Gini index is about 0.47, which is not different from studies (e.g. Hyacinth, 2004; Olaniyan, *et al.*, 2013) that established that the Gini coefficient for Nigeria is about 0.5. The concentration index result is positive

and it is around 0.3 in magnitude, affirming that the non-poor paid larger share of healthcare cost. A further discernable outcome from this table is that the Gini coefficient in the rural areas is higher than that of urban areas, which suggests that income inequality is higher for rural areas than urban areas. Similarly, the concentration index for rural areas is higher than urban areas, which suggests that the non-poor households in the rural bear more cost of healthcare payment than the non-poor households in the urban areas. Contrarily, when size of income is compared to the size of healthcare payment using Kakwani, the result indicates alternative.

In theory, the rationale of Kakwani index values range from -2 (indicating severe regressivity) to +1 (indicating strong progressivity). The obtained Kakwani indices for national, rural and urban are negative, which suggests that healthcare payment is regressive. The more household's income is increasing; the lower is the healthcare payment from the size of household's resources. The implication is that the proportion of healthcare payment skewed towards the poor income group. The negative result of Kakwani indicates a moderate vertical inequity favoring the non-poor (i.e. a system of negative discrimination) of approximately 0.2 for national, 0.1 for rural and 0.2 for urban in magnitude. It is also the case in table 3 that the magnitude of Kakwani index for urban areas is greater than that of rural areas, which implies that the non-poor households in the urban areas are more favoured than the non-poor in rural areas.

Table 3: Concentration and Kakwani Index

	National	Rural	Urban
Gini Coefficient	0.4665	0.4467	0.4119
Concentration Index	0.2934	0.3522	0.2589
Kakwani Index	-0.1731	-0.0945	-0.1531

Computed from Adept 6.0 using NLSS 2018/2019

Geometrically, the nature of the curves indicates regressivity because the Lorenz curve lies below the payment concentration curve. An observation of the two curves at the origin and the end shows an outcome of similarity but it is obvious that above the origin, the payment concentration curve lies above the Lorenz curve, which signifies that the healthcare financing method is regressive (See Figures 1, 2 and 3). Alternatively, seeing the payment concentration curve below the Lorenz curve means that the lower income groups (poor) contribute a larger portion to total healthcare payments than the proportion of income they earned. The geometric curves buttress the values of Kakwani indices that appear negative in Table 3.

Figure 1: Lorenz and Concentration Curves (National)

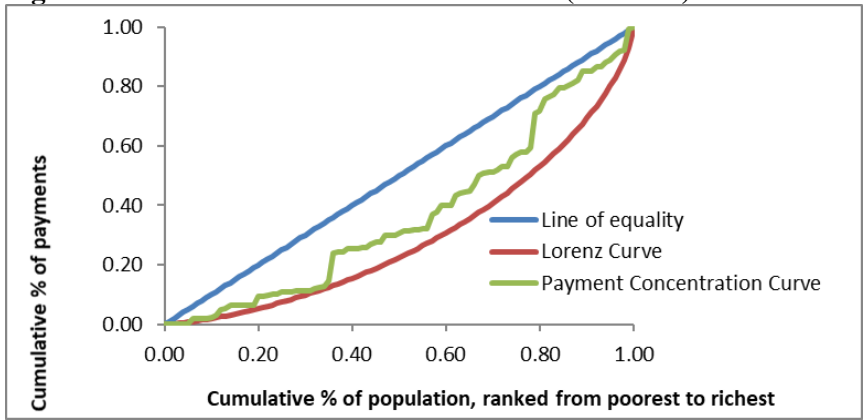


Figure 2: Lorenz and Concentration Curves (Urban)

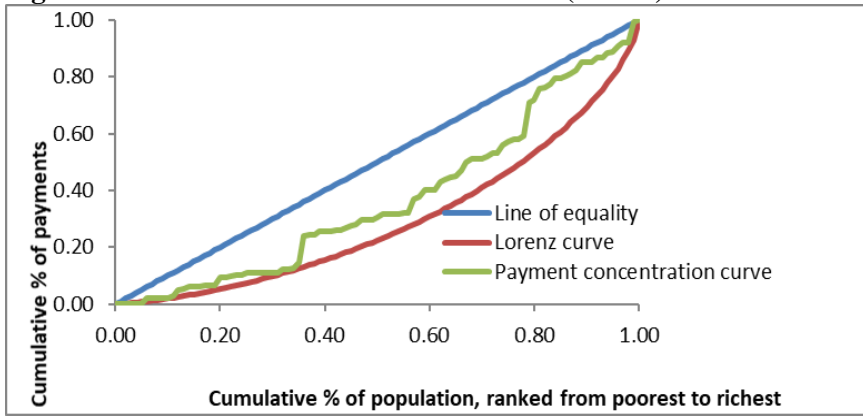
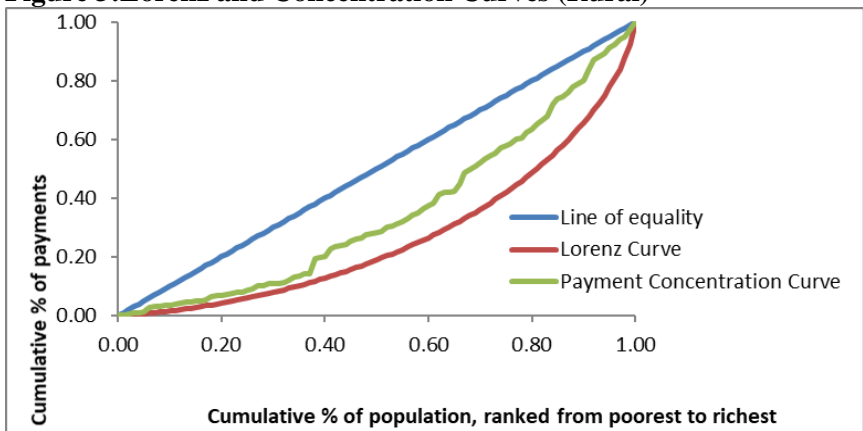


Figure 3: Lorenz and Concentration Curves (Rural)



Conclusion and Recommendation

Nigeria operates mix method of healthcare financing but the most commonly used financing is out of pocket payments which accounted for more than 70 percent of the total health expenditure. This implies that household bears the highest burden of health expenditure in Nigeria. The burden could not have been much if the government structured health plans were practically financed as top priority in the country. Despite the responsibilities saddled on the shoulder of the government in the health system, government responsibilities remain whit as compared to household financing. This study yielded about some empirical results. The computation of Gini coefficient yielded positive value of about 0.47 in magnitude, indicating that there is income inequality among the 5 income groups. The last group got more than half of the entire income while the fourth group got more than 20 percent of the entire income. The first group is the less privilege acquiring 4.2 percent of the entire income compare to the fourth and the last group. The implication of this is that, there exist uneven distributions of income in the economy. For the entire country, the estimated payment concentration index reflects that the better-off (non-poor) paid larger share for healthcare and it is at least about 0.3 in magnitude. Similarly, the concentration coefficients for rural and urban areas are both positive with rural value higher than urban generated value. Contrarily, the resulting kakwani index from concentration index and Gini coefficient is negative, which confirm that the financing system of healthcare is regressive using out of pocket payments. The value of Kakwani index is -0.1731 implying that healthcare payments depend on ability to pay. The higher is the size of income, the lower is the size of payment for healthcare. This result affirms the result from Olaniyan *et al.* (2013) and Ewelukwa *et al.* (2013) which could mean that the poor and the non-poor pay the same amount for any healthcare service received from health centers. It could also be negative because more than 60 percent of the medical facilities consumed are provided by the private health centers in which there is no discrimination in payment for healthcare. Conclusively, the result of Kakwani index indicates that there is vertical inequity in the Nigerian health financing system. It is obvious from the overall result that there is no proportionality as regards the healthcare payment and income. Also, the Kakwani result of the urban areas is higher than that of rural, which suggests that the non-poor in urban areas are more favoured than the non-poor in the rural areas. Therefore, this study recommends that an active alternative means of paying for healthcare services should be provided to close the gap between income and healthcare payment that will result to equity in healthcare payment. Specifically, healthcare payment policy that will make the poor to be at par with non-poor should be introduced.

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