Financial Protection and Universal Health Coverage in Nigerian

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Abstract
Universal Coverage and financial protection are the goals of health systems the world over. Using data from the Harmonized Nigerian Living Standard Survey HNLSS 2009/2010 to calculate the catastrophic and impoverishing impacts of out-of-pocket health payment in Nigeria, we discovered that 19.5% of Nigerians suffered financial catastrophe, while 3.5% are pushed below the poverty line. Factors associated with catastrophic health expenditure include; household size, number of spouse in the household, geopolitical zones, place of residence, household sex. We also utilized the tool of financing incidence analysis to show the progressivity of out-of-pocket expenditure across socioeconomic groups in Nigeria. A health system dominated by excessive reliance on out-of-pocket expenditure cannot achieve the goal of financial protection and UC. Vulnerable households with high risks of catastrophic and impoverishing effects of OOP should be targeted.
Keywords: Financial protection, Universal Health Coverage, Catastrophic health expenditure, impoverishment and Out-of-pocket expenditure

Introduction

Universal Health Coverage UHC and Financial Protection has become the priority of health systems around the world since the call by the World Health Organization [WHO], especially, but not exclusively for low and middle income countries, with less functional healthcare systems. The WHO (2010) defines UHC as ensuring that all people obtain good quality health services without suffering financial hardship when paying for them (WHO, 2010). This implies that individuals should not be denied access to needed healthcare services on account of their inability to pay and should not risk impoverishment when using healthcare services. In other words, UHC ensures two priorities of the health financing system: access to health and financial health protection (Onwujekwe, 2011). The generally acceptable nucleus of universal coverage is that health system should be financed according to ability to pay and benefits received in accordance with the need for health care (Mills, et al 2012).

There is a growing consensus among researchers and health policy makers that an equitable health financing system should ensure financial protection of healthcare service users from catastrophic and impoverishing effects and that such a health system should ensure Universal Coverage (UC) of all persons. This is because the financing structure of a healthcare system can disrupt households' living standards by deepening inequalities in income distribution, thus disrupting their positions in the socioeconomic hierarchy (Van Doorslaer, et al 2006). This necessitated the WHO (2010) to advocate for "affordable universal coverage and access for all citizens on the basis of equity and solidarity" hence, countries all over the world are pursuing the goal of universal coverage. A major focus of the WHO (2010) resolution is to reduce reliance on out-of-pocket payments for health care needs and to promote prepayment mechanism of health insurance (Onwujekwe, 2011).

The post 2010 WHO resolution notwithstanding, Nigeria still have very poor Universal Financial Coverage (UFC) as less than 5% of the entire population is covered by prepayment mechanism of health insurance, this is especially severe in the informal sector and rural dwellers and coverage with most healthcare services are very low (Ichoku, Fonta & Araar, 2012; Odeyemi & Nixon, 2013; Onwujekwe 2011). WHO (2010) suggests that, it is only when out-of-pocket direct payments fall below 20% of total health expenditure that a country can achieve financial protection which is demonstrated by a negligible incidence of financial catastrophe and impoverishment. However, in Nigeria public Health Expenditure (PHE) accounts for just 20-30% of Total Health Expenditure (THE) while Private Health Expenditure accounts 68% of THE, the bulk of the private health expenditure comes from households Out-of-Pocket (OOP) expenditure accounting for over 95% (Ichoku et al 2012; Olaniyan & Lawson, 2010; WHO 2015). In a country where over 70% of the population are living below the 1.25 dollar per day, OOP spending curb healthcare consumption, intensify the already inequity in access to quality healthcare and exposes household to financial risk of expensive illness (Onwejekwe, et al., 2010) hence making the goal of UC far from been achieved.

The criteria for meeting the goals of UHC were clearly specified by WHO (2010) to include the fact that THE should not be less than 4-5% of Gross Domestic Product (GDP), OOP spending should not be more than 30-40% of THE, over 90% of the population should be covered by health insurance and other risk pooling schemes and finally close to 100% coverage of the population with social assistance and safety net programmes.

In Nigeria, THE is 0.7% of GDP instead of the required 4-5% by WHO, less than 5% of the entire population covered by National Health Insurance Scheme NHIS instead of the recommended 90% by the WHO, less than 2% coverage of the population with social and safety net programmes instead of the recommended 100% by the WHO (Onwujekwe 2011). From the foregoing Nigeria is not close to achieving the goal of UHC. In a study by Odeyemi and Nixon (2013) it was revealed that Ghana has about 65% of her population covered by health insurance while Nigeria has less than 4% of her population covered by the NHIS.

When a large proportion of a country's population are excluded from financial risk protection mechanism of health insurance, Catastrophic Health Expenditure CHE, defined as a situation where health payment exceeds a threshold level of household income necessitating households to forgo the consumption of other items necessary for their wellbeing, is bound to occur (Onoka, Onwujekwe, Hanson, & Uzochukwu, 2011; Xu, et al., 2003) majority of the households will fall below the poverty line hence becoming impoverished as a result of health care payment. This is the case with Nigeria where households pay for every healthcare cost directly on a 'cash and carry' basis as a result of lack of health insurance coverage for the majority of the population (Ichoku et al 2011).

It has been estimated that about 150 million people suffer from financial crippling as a result of health payments annually and 100 million people are pushed below the poverty line simply because they must seek health care services and pay directly out-of-pocket (WHO, 2013) a significant proportion of these statistics must be from poor and middle income countries where health system performance is very poor with poor health outcomes. For instance, the National Population Commission NPC (2013) in Nigeria reported that just about 38% of women deliver under the supervision of qualified attendants, 36% of women delivered in health facility. This was far lower in three states of Jigawa (7.6%), Kano (13.7%), and Bauchi (16.3%). This implies that for these states over 80% of pregnant women delivers outside the health facility either at home or with traditional care givers. Generally, about 25% of the under-five are fully immunized. Nationally the proportion of fully immunized children aged 12 to 23 months ranges from 4.7% in the North-West zone to 40.7 % in the South West zone. Coverage in rural areas is 13.4% compared with 32.6% in the urban areas, malaria contributes 30% to childhood mortality (WHO Country Co-operation Strategy, 2014). It was also observed by the WHO (2014). A weak health system such as Nigeria needs assessment of the level of UHC and financial protection with equity implications.

Studies relating to UHC and financial protection internationally have had mixed results regarding the equity implication of OOP expenditure (Ataguba, Akazili & Mclntyre 2011; Chuma & Maina 2012; Chuma & Okungu, 2011; Devlin & Richardson 1993; Elgazzar et al., 2010; Mills et al. 2012; Moradi 2010; O'Donnell et al. 2005; Sanwald & Theurl 2015; Wagstaff & Van Doorslaer, 1992; 2003) some found out-of-pocket expenditure to be progressive, others found it to be regressive. A lot of these works are not centered on the orientation of UHC as they majorly concentrate on financing incidence analysis leaving out catastrophic spending and the extent of impoverishment.

For Nigeria most studies relating to UHC and financial protection were carried out using state level data (Ewelukwa, Onoka & Onwujekwe, 2013; Ichoku et al. 2011; Ichoku & Fonta 2006; Onoka et al. 2008; Onoka et al. 2011; Onwujekwe et al. 2012; Oyibo 2011; Uzochukwu et al 2015). Others were carried out using a nationally representative household survey (Olaniyan et al 2013; Amakom & Ezenekwe 2012) concentrating on equity in healthcare and CHE respectively.

Our paper departs from existing literature by utilizing a more recent nationally representative household survey (HNLSS 2009/2010) to produce evidences that were previously non-existing. We show the progressivity/regressivity of out-of-pocket expenditure across socioeconomic groups using financing incidence analysis. This is necessary because the objective of UHC includes an important equity dimension (WHO, 2013) and we used internationally acceptable threshold to calculate the proportion of household facing catastrophic health expenditure, particularly utilizing the methodology proposed by Xu, (2005) for the WHO which has not been applied to any Nigerian case study. Our paper is oriented in the light the global trend of financial protection and UHC and we utilized a nationally representative household survey to depict a better view of financial health protection and UHC in Nigeria than state level data would depict.

The WHO (2010) posits that the most feasible approach for countries if they are to achieve the human right to health is UHC and without a functional health care financing system, the later can only be achieved for an insignificant proportion of the population. Hence, there is need to measure healthcare system performance by assessing the equity implication of OOP expenditure on health, proportion of households incurring CHE, proportion of households impoverished by OOP and the determinants of CHE. This would help to improve policy targeting, particularly in identifying the most vulnerable groups as well as improve universal coverage of the national population.

Methodology
The theory applied in this study is based on the premise that health care expenditure should be financed

according to ability to pay. It is drawn from the public finance theory relating to tax system (Musgrave & Musgrave, 2004). Assessing equity in health care financing involves relating health care payments to households' income or some measure of Ability to pay (ATP) (Kakwani, Wagstaff & Van Doorslaer, 1997). This implies that health expenditure should be progressive with household income and the burden equitably distributed. Household per capita equivalent consumption is used as a measure of socioeconomic status. We compare concentration curve of household health expenditure with the Lorenz curve of household income (O'Donnell, Van Doorslaer, Wagstaff & Lindelow, 2008). The Lorenz curve depicts the distribution of income or consumption across households ordered from the poorest to the better-off. It shows the distribution of income inequality in the society (Olaniyan et al 2013). If all households had an equal share of income, the Lorenz curve would lie on the 45° line (i.e., 1% of households would have 1% of income etc). The financing concentration curve plots the cumulative percentage share of health-care payments for each household with the same ordering as for the Lorenz curve. If the concentration curve lies between the 45° line and the Lorenz curve (or above the 45° line), the percentage share of health-care payments for poorer households is greater than their percentage share of income or consumption expenditure and vice versa for richer households (Mills, et al, 2012). This implies that the financing mechanism is regressive. Conversely, if the concentration curve lies outside the Lorenz curve, the share of health-care payments is progressive. If the concentration curve lies on the Lorenz curve, the financing mechanism of health care payment is said to be proportional.

It is also possible for the concentration curve to cross the Lorenz curve; this would imply that the financing mechanism is mixed i.e. progressive for some income groups and regressive for others. If the concentration curve crosses the Lorenz curve, negative and positive values cancel out each other and the financing mechanism is therefore ambiguous (O'Donnell et al 2008; Olaniyan et al., 2013). We also used a summary index known as the Kakwani index to further depicts inequality in health care payment. It compares the distribution of health care payments (plotted on the concentration curve) with the distribution of income or consumption expenditure (plotted on the Lorenz curve) (Limwattanon et al., 2011; Mills et al., 2012) A positive Kakwani Index depicts a progressive health care financing mechanism and a negative index a regressive mechanism. Proportionality would imply that Kakwani index is 0 (Abu-Zahien, 2009).

Concentration indices are bounded between negative 1and positive 1, a negative value meaning that the concentration curve lie above the line of equality, a positive value implies that the line of equality lie above the concentration curve (Ataguba, 2012). Following (Kakwani, et al., 2007) Gini index for a distribution is given as;

$$G = 1 - 2 \int_0^1 L_y(P)\,dp$$

Or equivalently for a discrete distribution

$$G = \frac{2}{N\mu} \sum_{i=1}^n y_i r_i - 1 - \frac{1}{N}$$

Where $L_y(P)$ is the Lorenz curve co-ordinate of income at percentile p in the distribution of income y. μ is the mean income. $r_i = \frac{i}{N}$ Is the fractional rank of individual i in the income distribution, and N is the total number of observation. The concentration indices are analogously defined by replacing $L_y(P)$ with the concentration curve co-ordinate and μ with the mean of the variable of interest.

Kakwani, et al., (2007) explained further that for the purpose of easy computation either index can be defined using the convenience covariance formulation $C = \frac{2}{\mu} cov(y.r)$

Where C could be the Gini or Concentration index and y could be income (for the Gini index) or health care payment (for the concentration index)

Thus, for a given pre-payment income distribution,LX, and the health care payment LT, the two summary indices can be defined and assessed mathematically as follows:

$$kpi = 2 \int_0^1 [Lx(r) - LT(r)]\,dr = CT - GT$$

Where, r in parenthesis here indicates the rank of household in the pre-payment income distribution (Olaniyan, et al., 2013). According to (Lambert (1993) as cited in Ataguba, (2012) an underlying assumption of the summary index (Kakwani index) is that the payment schedule does not produce any change in the rank order of income units in the transition from pre-payment to post-payment income.

Catastrophic health expenditure is calculated as the percentage of household consumption expenditure devoted to out-of-pocket payments on health services. Spending is judged catastrophic if it exceeds the commonly used threshold of 40% or more of household capacity to pay ctp (Mills et al 2009; Xu et al. 2003; Xu, 2005). We use the formula proposed by Xu (2005) to calculate ctp with the following steps;

- We generate food expenditure share $foodexp_h$ for each household by dividing the household's food expenditure by it total expenditure.

$$foodexp_h = \frac{food_h}{exp_h}$$

- We generate the equivalence household size for each household as $eqsize_h = hhsize_h^{0.56}$ Where $hhsize_h$ is the household size, the value 0.56 is the household scale multiplier obtained from a regression equation based on 59 countries in the form which implies that food consumption increases with additional household members, but that the increase in consumption is less than proportional to the increase in household size (Xu, et al., 2003).

- We divided each household food expenditure by the equivalent household size to get equivalized food expenditures $eqfood_h$

$$eqfood_h = \frac{food_h}{eqsize_h}$$

- We identify the food expenditure share of total household expenditure that are at the 45th and 55th percentile across the whole sample, name these two variable as $food45$ and $food55$.

- We calculated the weighted average of food expenditure in the 45th to 55th percentile range to give the subsistence expenditure per (equivalent) capita, which is also the poverty line (pl)

$$pl = \frac{\sum w_h * eqfood_h}{\sum w_h}$$ Where $food45 < foodexp_h < food55$

- We calculated the subsistence expenditure for each household (se_h) as

$$se_h = pl * eqsize_h$$

A household is regarded as poor $(poor_h)$ when its total household expenditure is less than its subsistence spending.

$$poor_h = 1 \text{ If } exp_h < se_h$$

$$poor_h = 0 \text{ if } exp_h \geq se_h$$

- Household capacity to pay is defined as total household consumption net of subsistence requirements for equivalent household size.

$$ctp_h = exp_h - se_h \text{ if } se_h <= food_h$$
$$ctp_h = exp_h - food_h \text{ if } se_h > food_h$$

Some households may report food expenditure that is lower than subsistence spending $(se_h > food_h)$. This implies that the household's food expenditure is less than the estimated poverty standard. In such a case the non food expenditure is used as non-subsistence spending.

$$cata_h = 1 \text{ if } \frac{oop_h}{ctp_h} \geq 0.4$$

$$cata_h = 0 \text{ if } \frac{oop_h}{ctp_h} \leq 0.4$$

The idea behind this degree of healthcare payments implies that households will have to go into debt or sale assets, jeopardizing households livelihoods or in a situation where households seek care, it is at great displacement effect of other essential household needs (Damme, et.al. 2004; Ichoku et al. 2012). For determinants of catastrophic health expenditure we utilized Xu, (2005) methodology proposed for the WHO is used. We utilized the logistic regression below;

$$y = \alpha + \Sigma \beta_i X_i + \varepsilon$$

Where y is the dependent variable, 1 for CHE, and 0 other wise. $y = \ln\{p|1-p\}$. α Is the constant, X_i is one of the independent variable, β_i is the coefficient of independent variable, p is the probability of a household facing CHE.

A household is said to become impoverished if after paying for healthcare services it becomes poor (Xu, 2005). Also following Xu, (2005) the variable created to reflect poverty impact of health payments $impoor_h$ is defined as 1 when household expenditure is equal to or higher than subsistence spending but is lower than subsistence spending net of out-of-pocket health payments, and 0 otherwise.

Data and Results

The HNLSS 2009/2010 was designed to have Local government areas as reporting domain. However, the sample design for the survey also facilitated the provision of estimates at national and sub national levels (national, Zone and States). A two stage sample design was adopted in the survey of which selection of Enumeration Areas (EAs) constituted the first stage/Primary sampling units (PSUs), while selection of households formed the second stage/Secondary or Ultimate Sampling Units (USUs). Generally the survey covers a households' observation of 39400 and a population sample size of 27, 222,000.

We present the distribution of total health expenditure as percentage of total expenditure by location (urban and rural areas) and by household head (Male or Female headed households)

Table 1: health expenditure as % of total expenditure in Nigeria

Sector	Total expenditure (food and non-food)	Health expenditure	Total expenditure as % of health expenditure
Urban	376,996.91	118,583.99	31.45
Rural	316,547.84	115,538.76	36.44
Household heads			
Male	341,808.74	115,850.38	33.89
Female	332,844.84	118,344.12	41.89

Source: Researchers' computation from HNLSS 2009/2010

The above result shows that on average, individuals in the urban areas spent 31.45% of their total income on health, while individuals in the rural areas on average, spent 36.44%. Individuals in the rural areas spent 4.99% more on health as a percentage of total income than those in the urban areas. Male headed households spent 33.89% of their total income on health, while female headed household spent 41.89% of their total income on health. This shows that female headed households spent 8% more on health as percentage of total income than the male headed households. The results were further presented below:

Table 2: Per Capita Health Expenditure (PCHE) as % of Per Capita Total Expenditure (PCTE) location (urban and rural areas)

quintile	URBAN AREAS			RURAL AREARS		
	PCHE	PCTE	PCHE as % of PCTE	PCHE	PCTE	PCHE as % of PCTE
1	831.647	18078.33	4.6	489.119	11475.13	4.26
2	3059.783	3260.13	8.44	1716.423	23797.07	7.21
3	6655.868	56132.59	11.85	4155.016	38287.16	10.85
4	14758.95	90873.21	16.24	11640.18	64566.72	18.03
5	119398.5	320609.8	37.24	101374.5	236299.6	42.9

Source: Researchers' computation from HNLSS 2009/2010

The result is a pointer to the fact that poorer households are grossly under spending on health compared to the richer households. The poorest quintile spent 4.60% of their per capita total expenditure on health. The richest quintile spent 37.24% of their per capita total expenditure on health. The result shows increase in health spending as one move from the poorest to the richest quintile. The richest households spent approximately 8 times more on per capita health expenditure than households in the poorest quintile.

For the rural areas households in the richest quintile spent 42.90% of their per capita total expenditure on health. The households in poorest quintile spent less than 5% on health. These further shows poorer households are grossly under spending on health. The richest quintile spent about 10 times more on per capita health expenditure as a percentage of per capita total income than households in the poorest quintile. Hence, the reason for this result could be attributed to the fact that, poorer households since they could not afford healthcare costs choose not to seek care.

Figure 1: concnetration curve for urban areas

figure 2 concentration curve for rural areas
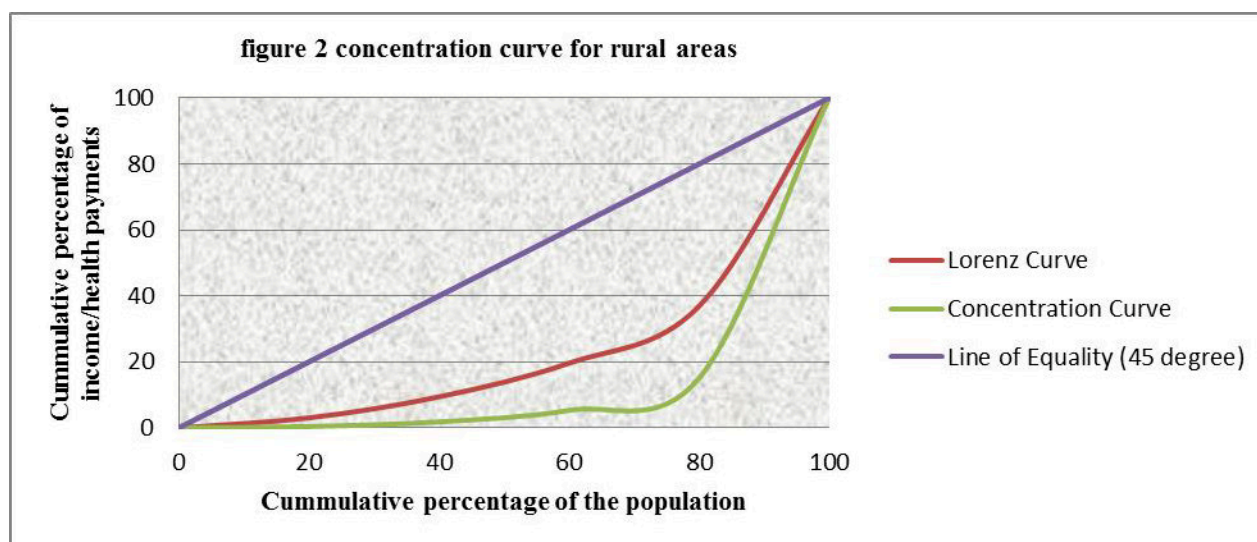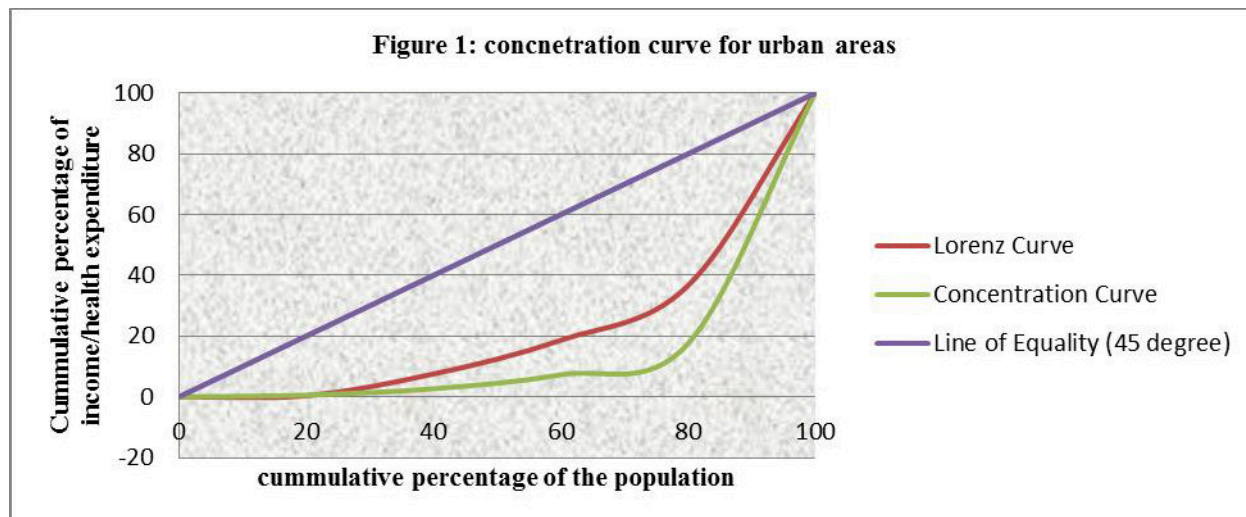
The concentration curves depicts similar scenario; poorer households' share of health expenditure is less than their share of income for both the urban and rural areas in Nigeria. For the urban areas the first 20% of the population gets less than 4% of the total income, and just 0.57% share of per capita health expenditure. For the rural areas, the poorest quintile (first 20% of the population) gets just 3% of the entire income and 0.41% share of health expenditure. This accounts for why the Lorenz curve lies outside the 45 degree line depicting income inequality in both rural and urban areas. The financing mechanism (out-of-pocket expenditure) is therefore progressive across income quintiles for both urban and rural households in Nigeria.

Table 3: PCHE as percentage of PCTE across households' head

quintile	FEMALE HEADED HOUSEHOLDS			MALE HEADED HOUSEHOLDS		
	PCHE	PCTE	PCHE as % of PCTE	PCHE	PCTE	PCHE as % of PCTE
1	589.765	14725.63	4	589.3296	13200.18	4.46
2	1852.859	28904.06	6.41	2127.205	27087.07	7.85
3	4634.736	45550.81	10.17	4835.621	42556.71	11.36
4	11322.68	74177.04	15.26	12682.24	70970.23	17.87
5	13697.69	283590.3	4.83	98047.68	252097.3	38.89

Source: Researchers' computation from HNLSS 2009/2010

The result for female headed households shows that the poorest quintile spent approximately 4% of per capita total income on health. The middle quintile spent 10.17% of their per capita total expenditure on health, while the richest quintile spent 4.83% of their per capita total income on per capita health expenditure. The result shows progressivity from the first quintile down to the 4th quintile. From the last quintile (richest) out-of-pocket expenditure was regressive. Here the richest quintile in the female headed households spent less than 5% of their

per capita total income on health. Result from the male headed household shows individuals in poorest quintile spent approximately 4.46% of their per capita total income on health. The middle income quintile spent 17.87% of their per capita total income on health while the richest quintile in the male headed households spent 38.89% of their per capita total income on health. The richest quintile in the male headed households spent over 30% more on per capita health expenditure as a percentage of per capita total expenditure than the poorest quintile.

Figure 3: Concentration curve for female headed households

figure 5.9: concentration curve for male headed households
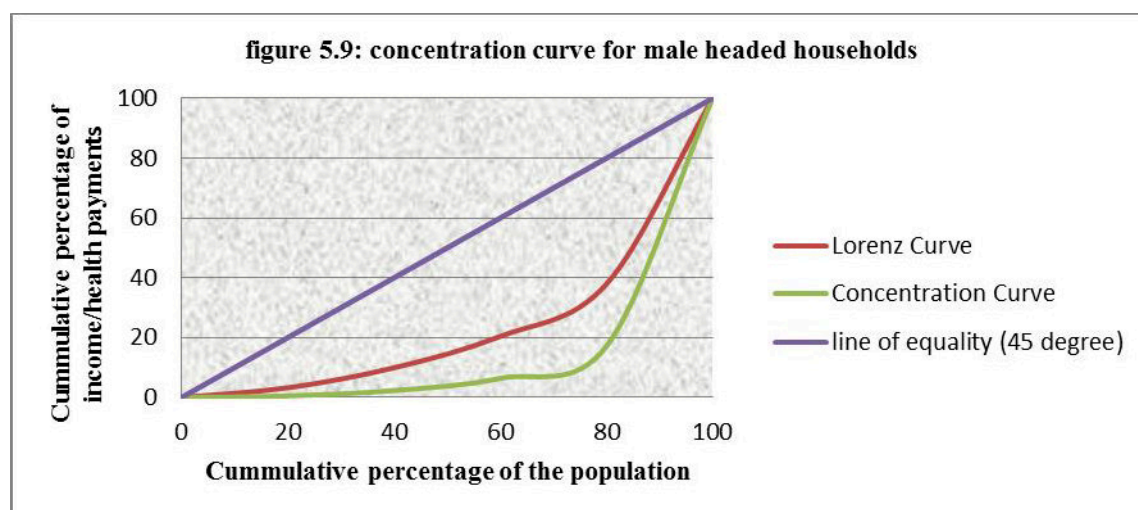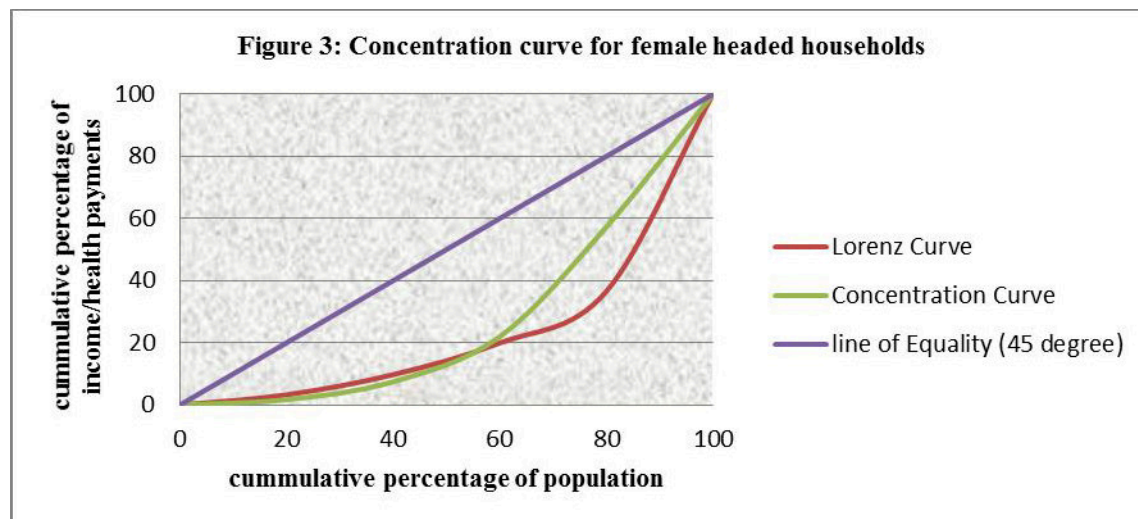
Since the concentration curve crosses the Lorenz curve, this shows that health payment was progressive for some groups and regressive for others within the female headed households. The first 40% of the population within the female headed households had their share of health payment progressive. The curve intersects at point 60% of the population showing proportionality of health payment. Female headed households above 60% of the population had their health payment regressive. For the male headed household since the concentration curve lies outside the Lorenz curve showing progressivity in healthcare payments across male headed households, it implies poorer households' are suppressing their health needs.

Table 4: Concentration indexes, Gini indexes and Kakwani indexes across socioeconomic groups in Nigeria

Socioeconomic groups	Concentration indexes	Gini indexes	Kakawani indexes
Urban Areas	0.587	0.547	0.14
Rural Areas	0.609	0.524	0.185
Female headed households	0.446	0.522	-0.185
Male headed households	0.622	0.15	0.181

Source: Researchers' computation from HNLSS 2009/2010

For all the groups (female headed households, male headed households, urban areas and rural areas) the concentration indexes were positive indicating health payments are concentrated among the rich. The Gini indexes were also positive but less than 1 depicting the existence of inequality in income distribution. The kakwani index, which is a summary index that indicates whether the financing mechanism (out-of-pocket

expenditure) is progressive or regressive were positive except for female headed households. It was regressive for female headed households with a negative kakwani index of -0.08.

The result for CHE shows that 19.5% of the Nigerian population faces CHE, this implies that those household would have to forgo other essential household needs to seek healthcare. We also show the distribution of CHE across geopolitical zones in Nigeria. North Central 8.7%, North East 8.1%, North West 4.4%, South East 5.5%, South South 5.6% and South West 5.8%. The result shows that North Central, North East and South South geopolitical zones have the highest proportions of people incurring CHE. We also present the distribution of CHE across income quintile, the lowest income quintile has 29.98% proportion of household incurring CHE, the second quintile 12.10%, the middle quintile 7.49%, the rich quintile (forth) 3.94 and the richest quintile 1.99%. The result shows that the proportion of individuals incurring CHE is more pronounced in the poorest quintile.

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Logistic regression                                    Number of obs    =      34900
                                                       LR chi2(10)      =     755.78
                                                       Prob > chi2      =     0.0000
Log likelihood = -20346.333                            Pseudo R2        =     0.0182
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cata1	Odds Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
1.hhsize1	1.474186	.0412908	13.86	0.000	1.395439	1.557377
1.hhagey1	1.36879	.0429254	10.01	0.000	1.287192	1.455562
1.spouses1	1.101476	.0434608	2.45	0.014	1.019504	1.190037
zone						
2	1.119815	.0511694	2.48	0.013	1.023885	1.224733
3	1.260511	.0508996	5.73	0.000	1.164595	1.364326
4	1.958698	.0886887	14.85	0.000	1.792361	2.140471
5	1.513225	.0670033	9.36	0.000	1.387438	1.650416
6	1.237595	.0569821	4.63	0.000	1.130803	1.354472
2.rururb	.7746458	.0235294	-8.41	0.000	.7298749	.8221629
2.hhsex	1.169166	.0411514	4.44	0.000	1.09123	1.252669
_cons	.2554739	.0089003	-39.17	0.000	.2386118	.2735277

For determinants of CHE, literature has shown that the availability of health insurance reduces the probability of incurring CHE (Xu, 2003; Galarraga, Sosa-Rubi, Rodriguez & Sesma-Vazquez 2010) households having members hospitalized, household with chronically ill member and household utilizing private hospitals increases the likelihood of incurring CHE (Limwattananon, Tangcharoensathien, Prakongsai, 2007). Our result shows that Household head with age >/= 65 years increases the likelihood of catastrophe by 1.39 times compared with households whose head has age less than 65 years. Households' with spouse greater than 1 increases the likelihood of catastrophe by 1.1 times as compared with households with 1 spouse and below. Households in the North east zone are 1.1 times more likely to incur CHE than household in the North central; households in the North West are 1.2 times more likely to incur CHE than household in the North central zone. Households in the South East are 2 times more likely to incur CHE as compared with households' in the North Central. Households in the South South are 1.5 times and households in the South east are 1.3 times more likely to incur CHE as compared with households in the North Central.

Our result reveals that 3.5% of the Nigerian households are pushed below the poverty line after paying for healthcare. This is done using our excel spreadsheet 2007 and Xu, (2005) methodology

Conclusion and Recommendation

Out-of-pocket expenditures were found to be progressive for all the groups except for female headed households were it is found to be regressive with a kakwani index of -0.08. Given that those in the poorer groups usually have greater health needs (Onoka, et al, 2008). It is likely that a significant proportion of such health needs are unmet with resultant inequalities in access to healthcare. This may bring about increased inequality in health outcomes; hence, the progressivity of out-of-pocket payments may be brought about by poorer households not

seeking care. For catastrophic health expenditure, the study found that 19.5% of Nigerians are affected and its prevalence is more pronounced in the poorest quintile, the North Central, North east and South south geopolitical zones of Nigeria. This implies that households in these categories, having to make this degree of out-of-pocket payments would probably mean they have to go into debt, sale assets and possibly sacrificed the consumption of other essential items necessary for their wellbeing, thus, jeopardizing households' livelihoods. (Mills et al 2012). 3.5% proportion of the Nigerian households is further pushed into poverty as a result of health care payments.

From the foregoing it can be seen that Nigeria is not close to achieving financial protection and universal coverage for her population. There is need to move away from, out-of-pocket payments to prepayment mechanism of health insurance or a subsidized healthcare system as this is the key to reducing financial catastrophe. Otherwise it would be difficult to improve the performance of the Nigerian health system. The NHIS should be expanded to cover more of those in the rural areas and the poor and then subsequently 100% of the Nigerian population in line with WHO (2010) declaration. Community based health insurance should also be strengthened to provide the necessary risk protection to these vulnerable groups. Nigerian government should device a means of pooling resources for health care that will not impose financial hardship on the vulnerable groups.

Using a fixed threshold to measure catastrophe, irrespective of households' income or expenditure, fails to capture how the absolute level of expenditure that remains after making health care payments to spend on other goods and services differs among groups of different income levels (Onoka et al., 2011) this is particularly so because of the high inequality in income distribution. Secondly since our study is a cross sectional design, we cannot make causal inferences and examine how CHE and impoverishment evolve overtime.

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