



COMMUNITY PARTICIPATION AND HEALTH CARE FINANCING

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ABSTRACT

INTRODUCTION

The main objective of the study was to explore the performance of community participations towards the development of health care financing, the literature review also described and identified past community participation research studies shading more light on out of pocket expenditure in health care and other sector, the level of performance of the community participation is limited, as there is large population to be covered there are indications that the poorest and socially excluded groups are not reached by community financing initiatives, financial protection, community based health financing schemes are systematically reported to reduce the out of pocket spending of their members while increasing their utilization of health care services.

Key words: *community, health finance, equality, health logistics, out of pockets, Diseases, hospital management, out breaks.*

INTRODUCTION

Catastrophic health expenditure (CHE) has been defined as spending on health care that exceeds a certain proportion of the patient's income. It has been observed to be real and sizeable in both rich and poor countries. This, in turn, leads to a continuation in the chain of urban slum-dweller poverty and ill health, a situation almost always linked to worse health outcomes. During illness episodes, families may opt for less costly traditional, sub-optimal care, or altogether forgo healthcare services they need. Having to meet health care costs can pose substantial threats to the provision of basic household necessities such as food, clothing and shelter. In extreme conditions, the need to pay for medical care can make education unaffordable. Having to make these kinds of choices has led to the coining of the term catastrophic health care expenditure. Catastrophic health expenditure has been evaluated in several studies and also at different thresholds, at 5%, 10%, 25% and 40% of household budget. Others advocate the use of 10% of all household expenditure or 40% of nonfood consumption expenditure. The range of CHE differs greatly among many low and middle-income countries (LMIC). Proportion of CHE ranges from as low as 9.1% in India to as high as 25.0% in Nigeria. The risk and occurrence of exorbitant (otherwise catastrophic) expenditures when a health need arises defies the concept of universal health coverage



(UHC). Universal health coverage (UHC) remains an important component for positive health outcomes and a right to access quality health care is a basic human right throughout the world today. Nigeria appears to support the view that health care should be accessible and affordable for all. Nonetheless, disparities in access to health care continue to persist despite promising national health policies. The current health insurance scheme in Nigeria, the National Health Insurance Scheme (NHIS), was implemented in 2005 to offer financial protection for its citizens. Despite this, the NHIS to date only covers the formal [through the Formal Sector Social Health Insurance (FSSHIP)] and organized private sectors which comprise 4.0% of the Nigerian population, and excludes the informal sector. One group, "urban slum dwellers", constitutes an important part of the informal sector and may be more vulnerable to illnesses. Worldwide, it is estimated that between 2000 and 2010, the number of slum dwellers has increased by over 50 million. Slums are rapidly forming in many cities today due to urbanization and population growth that attracts migrants in search of economic opportunities.

Currently, approximations show that one out of three urban dwellers (one out of every six people worldwide) live in a slum. Residents of slums are subjected to a reduced access of basic sanitation and poor urban or regional planning facilities, which may lead to unprecedented health problems compared to non-slum dwellers. This increased risk of ill-health also places slum dwellers at greater risk of catastrophic payments when they fall ill, as they are left to pay for hospital bills via out-of-pocket (OOP) payments.

In Nigeria, OOP expenditure as a percentage of private expenditure on health was reported to be higher than 90% in 2002 and it increased to 95.7% in 2012. The Nigerian health care system is typically structured in three tiers—tertiary, secondary and primary (Ward Health System operating at the local government level). At the secondary level of care, there is a wider array of private and public hospitals. Public hospitals are not-for-profit, usually multidisciplinary, bigger in terms of size and built to serve larger populations. They have a wider array of human resources (core medical team and allied health workers such as radiographers, pharmacists together) and offer both general and specialist services. Private hospitals, on the other hand are usually set up as specialist hospitals in which the services rendered have expertise in a certain field/specialty of medicine. They are usually for-profit, smaller (thus have fewer allied staff) and built to attend to fewer patients (Aregbeshola & Khan, 2018).

General factors that have been identified to influence a preferred choice of facility to access healthcare range from availability of essential drugs, user fees, proximity of facility, cleanliness of the environment, to the reputation of the facilities (quality of services) [26]. From literature, we observe that perceptions of shorter waiting times, flexible access and greater confidentiality are factors that might draw consumers to private facilities compared to public health care facilities. Hospitals that are for-profit (private) or not-for-profit (public) have different approaches to payments and flexibility of payment. This influences preferences, satisfaction, access to care and their ability to pay. A particularly acute example is that of an event that requires emergency surgical care. Such events are usually sudden and unplanned. Certain factors interact with the individual's circumstances that either favor or hinder the ability of a household to afford the hospital costs. Sometimes, one or more of these factors can influence the household's ability to pay. They include socioeconomic status (such as the income of the household) and influencing/ interacting factors (that maybe predisposing, enabling or need factors).



An individual with a decent income will probably be able to afford the payment, thus increasing the likelihood of enjoying favorable outcomes. Conversely, a household with poor income is more likely to experience some difficulty with payment or affordability of health care costs. Detention and incarceration of patients within the hospital premises until payments have been paid is a common practice in many sub-Saharan African hospitals. The inability to pay on time invariably predisposes the individual to unfavorable or unpleasant outcomes. Many studies have explored the risks of catastrophic expenditures and impoverishment in emergencies among several populations in different populations. However, a paucity of data exists with respect to the impact of OOP health care expenditure on slum dwellers in emergency conditions. A Research conducted in Nigeria did not explore the influence of OOP healthcare payment on Caesarian Section (CS), however, the residence (whether slum/non-A slum) nor was catastrophic nature of the health care expenses explored. Furthermore, there is a dearth of information on a comparative assessment of catastrophic health spending among slum and non-slum dwellers in the sub-Saharan Africa. Given an increased exposure to catastrophic payments when the medical need is financed on an out-of-pocket basis and the fact that urban slum dwellers constitute a population that is exposed to a higher risk of illness, it thus becomes imperative to study this micro-unit's experience of CHE. PLOS ONE Factors associated with catastrophic health expenditure among slum and non-slum dwellers in Nigeria thus sought to answer the research question, "Is there a significant difference in catastrophic spending between slum and non-slum dwellers when faced with a surgical emergency?" Using emergency surgery as a lens, because of its peculiar characteristics of being unplanned, sudden and often unavoidable, this study examined the relationship between emergency surgery and catastrophic health expenditure among the urban slum and non-slum dwellers in a metropolis of Southwestern Nigeria (Aregbeshola & Khan, 2018).

Among slum dwellers, over two-thirds (78.2%) of the payers are male. The same was observed among the non-slum dwellers where 73.8% of the payers were male compared to 26.2% female. For both slum and non-slum dwellers, most of our payers were aged less than 40 years (65.6% among slum dwellers and 63.9% among non-slum dwellers); married (85.1% among slum dwellers and 93.4% among non-slum dwellers); Yoruba (65.5% among slum dwellers and 78.9% among non-slum dwellers) and Christians (64.4% among slum dwellers and 68.1% among the non-slum dwellers), Significantly more (48.2%) of the non-slum dwellers, attained a level of education that was higher than secondary level compared to the slum dwellers, where only 16.0% had education above the secondary level ($p < 0.001$). Emergency CS accounted for the commonest indication why patients were hospitalized for both slum (82.0%) and non-slum dwellers (83.5%). A breakdown of the indications as presented in Fig 2. More payers from the slums were employed in the informal sector (50.3%) while payers from non-slum dwellers were employed in the formal sector (53.0%) and this was observed to be significant ($p = 0.0025$). Earning capacity between slum and non-slum dwellers was also found to be very significant ($p < 0.001$). Income greater than \$1,389 (N500,000) per annum was found to be common among the non-slum dwellers (71.0%) compared to slum dwellers whose income was less than \$1,389 (N500,000) (71.1%). The proportion of respondents with health insurance coverage was low among the slum dwellers (11.3%) and non-slum dwellers (9.3%); (Id et al., 2021).

The study sought to compare the prevalence and characteristics of people that experienced CHE among urban slum dwellers and non-slum dwellers within a Nigerian metropolis. Findings from the study demonstrate that



the burden of OOP payment for emergency surgery was substantial among both slum and non-slum dwellers, thus reflecting limited financial protection available for both groups. Notably though, CHE was found to be significantly higher among slum dwellers compared to non-slum dwellers. It has been reported in literature that access to social networks and social solidarity schemes which are often used to mitigate CHE are less available in the slums and have been documented as reasons for the level of CHE in the slum population. In addition to the lack of social solidarity schemes to support households during emergency care, slums offer poor or no employment opportunities, amenities or earning capacity (income). The slum dwellers are not only disadvantaged in terms of an inadequate physical environment, but may not be able to save for health-related needs, thus rendering them ill-equipped to handle sudden health emergencies. In a recent study, this ad hoc savings culture was an occurrence reported by both slum and non-slum dwellers who experienced emergency surgery, however, as that was a qualitative study, the prevalence of not saving is not known. The prevalence of CHE among slum dwellers (74.1%) and non-slum dwellers (47.7%) was quite high compared to other studies reported in the literature. Amakon and Ezenekwe (2012) found a 24% prevalence of CHE among the richest income quintiles in Nigeria while another study conducted in Kenya estimated the prevalence of CHE amongst its non-slum dwellers to be 23% [8, 10]. The higher prevalence observed in this study could be due to the fact that respondents in this study were patients scheduled for emergency surgery (which is not only a sudden occurrence but also financially demanding), differing considerably in terms of nature of care sought by the respondents in the Kenyan study that explored care related to seizures, difficult breathing, measles and injury. Considering also that this was a hospital-based study (in which the population recruited for this study are households that were scheduled for surgery) instead of community-based households and by virtue of their status being hospital-based respondents, the vulnerability to CHE is much higher already and as such the plausible explanation for why proportion of CHE was this high in our study. Extrapolation of study findings in comparison with other studies needs to be done bearing this difference in mind. The increased risk and vulnerability to CHE with hospitalization as seen in this study has important policy implications and has been also brought to the fore in a prior study (Id et al., 2021).

The reduced earning capacity of slum dwellers increases the chances and risks of suffering CHE. The correlation between income and vulnerability to CHE is validated in this study. Health insurance is yet another factor that is very significant in reducing CHE in literature and which is also observed in this study. The higher coverage of insurance seen among the slum dwellers compared to non-slum dwellers was an intriguing yet unsurprising finding. Popular local savings clubs or community-based health insurance schemes (CBHIS) that are commoner among slum regions might be accountable for this increase. In recent studies, a scale up of community-based health insurance schemes has been stepped up to cater for health needs of informal populations an innovation that has witnessed differing levels of acceptance and coverage in different settings. The functionality of these schemes is still in doubt with respect to the effectiveness of coverage, as we observe that CHE is still much lower among non-slum dwellers compared to the slum dwellers. The protective effect of health insurance from incurring CHE as observed in our study findings validates what is obtainable in literature. The indications for emergency surgery establish that pregnancy is a high-risk period when patients are at a much higher risk of experiencing CHE especially if they have to undergo a caesarian section that was initially



unplanned. The continuous rise in the trend of CS at delivery, observed in the past 30 years, has been attributed to many factors such as improved screening abilities, bad medical histories and physician-driven incentives to perform more CS, which is a perverse outcome of the pay for performance initiative. The mode of delivery is however, not the sole factor or period when CHE likelihood is higher but also the type of residence (slum or not, urban or rural). In a study conducted in Enugu Nigeria, a significantly lower odds of having CS were observed among women living in rural settings compared to residents living in urban settings. These observed differences have been attributed to socio-cultural issues that influence variation and ultimately the acceptance of the procedure across Africa. Despite these socio-cultural issues, CS has been pronounced key to reducing maternal mortality in Africa regardless, coupled with a massive scale-up of health systems. Musgrove and colleagues (2000) further argue that the overall utilization and access to emergency obstetric care are not only dependent on perceived patient need but also the responsiveness of the system (Id et al., 2021).

The involvement of spouses as payers for many of the CS surgeries is not only borne from the fact that Nigeria is patriarchal but equally emphasizes the role of men and their involvement in supporting the reproductive health of women that has been reported in the literature. Our study illustrates that men take responsibility for the reproductive health of their spouses which corroborates the literature that has also been shown in mother to child transmission of HIV research. Correlation between higher incidences of CHE with female gender, private facility utilization in this study is supported by findings from Okedo-Alex et al. (2019). Although Cleopatra and Eunice (2018) found a reduced incidence of CHE with utilization of private facilities [58], a key driver why clients are more likely to experience CHE in private facilities is the relative higher cost at which healthcare services are provided in the quest to provide quality care. As supported by the literature, the finding of an increased odds of catastrophic expenditure in those aged less than 40 years amongst both payers and patients can be explained by this being the childbearing years. The increased odds of impoverishment associated with the unemployment rate is not surprising—as observed in higher thresholds of CHE. Finding that unemployment is linked to CHE in our study confirms what has been documented in the literature. Being the patient and also the payer greatly reduces the ability to seek assistance from social networks to assist with hospital bills in form of loans or monetary gifts. This may well explain the increased susceptibility to CHE that was established in this study (Id et al., 2021).

An urgent need for innovative social or welfare packages for households faced with emergencies is urgently needed. The significant statistical association between the setting of the respondents (whether slum or non-slum) and occurrence of CHE in this study is a contributory factor to earning disparities between the urban slum dwellers and their non-slum counterparts. The increased likelihood of slum dwellers to suffer CHE can be attributed to their relatively limited earning capacity. Slum-dwellers, in general, have lower income earning capacities, which in turn increases their susceptibility to CHE during illness episodes (Id et al., 2021).

Overall, 65.6% (95% CI: 55.6–74.5) of the total population that were admitted for emergency surgery, experienced catastrophic expenditure. The prevalence of catastrophic expenditure at 5% threshold, among the population scheduled for emergency surgeries, was significantly higher for slum dwellers (74.1%) than for non-slum dwellers (47.7%) ($F = 8.59$; $p = 0.019$). Multiple logistic regression models revealed the significant independent factors of catastrophic expenditure at the 5% CHE threshold to include setting of the payer



(whether slum or non-slum dweller) ($p = 0.019$), and health insurance coverage of the payer ($p = 0.012$). Other variables were nonetheless significant in the bivariate analysis were age of the payer ($p = 0.017$), income ($p < 0.001$) and marital status of the payer ($p = 0.022$).

Protection from financial hardship while accessing quality health services is core to achieving the agenda 2030 target of universal health coverage (UHC) without leaving anyone behind. The two components of UHC are health service and financial coverage both of which need to be assessed at the level of the whole population. UHC is not an end in itself: Its goal is to improve the chances of every person attaining the highest level of health and well-being and contributing to socio-economic and sustainable development. A major barrier to universal coverage is an overreliance on direct payments at the time people need care (user fees), and this obligation to pay directly for services at the moment of need prevents millions of people receiving health care when they need it. Every year, some 100 million people fall below the poverty line as a result of out-of-pocket expenditures on health, and a further 1.2 billion, already living in poverty, are pushed further into penury for the same reason. Because of the dynamic dual interlink between health and poverty, many households will not be able to escape the trap of ill-health and poverty once they fall into it.^{3,4} Health expenditures that result in financial hardship or impoverishment are said to be catastrophic and reflect the degree of financial risk protection. Catastrophic health expenditure (CHE) is usually measured by setting a reference or standard and counting the number of households for whom their level of health expenditure in a given period can be said to be catastrophic or by ascertaining whether health spending pushes a household's post payment consumption below the poverty line.^{5,6} The most widely used thresholds are 10% of the household's total consumption and 40% of the household's consumption net of expenditures on basic necessities (capacity to pay), and the poverty line may be exemplified by an international poverty line such as \$1.25 per person per day in 2005 purchasing power parity terms. CHEs usually result from high levels of out-of-pocket spending (OOPS) on health care by households.⁶ However, OOPS is not the only cause of catastrophic payments; poverty, poor health care service accessibility, and lack of risk pooling all contribute to the occurrence of CHE; and CHE is a big issue when all these three factors are most pronounced.^{8,9} Nigeria currently spends less than 5% of her gross domestic product (GDP) on the health of its citizens and is yet to implement the Abuja Declaration earmarking at least 15% of their annual budget to improve the health sector.¹⁰ In Nigeria, private expenditure on health as a percentage of total health expenditure remains high at about 70% with OOPS as a percent of private expenditure on health being consistently higher than 90%. Countries with a higher share of out-of-pocket payments in total health expenditures are more likely to have a higher proportion of households facing catastrophic expenditure.⁸ UHC is said to be more of a political than an economic challenge, thus highlighting the need to make its achievement a political priority in Nigeria (Okedo-alex et al., 2019).

Three key preconditions for catastrophic payments have been identified to be availability of health services requiring payment, low capacity to pay, and the lack of prepayment or health insurance. In the Nigerian context, these three preconditions for CHE are operational as OOPS accounts for more than 90% of household health care payments paid for user fees and other related costs of illness. User fees were introduced as cost containment and cost recovery strategies in order to maintain the integrity of the public/primary health care system. However, its indiscriminate use has resulted in catastrophic levels of health expenditure to households. Also,



about 70% of the Nigerian population live below the poverty line with increasing proportions each year, thus depicting the low capacity of most Nigerians to pay for health services.¹⁸ As a third criterion for CHE, the status of health insurance in Nigeria predisposes to CHE because since the inception of the National Health Insurance Scheme (NHIS) (a form of social health insurance) in 2005, only those employed in the federal formal sector, which represents less than 5% of the working population of Nigeria, have been enrolled.¹⁹ The informal sector that includes the poor and vulnerable who are worst hit by OOPS leading to CHE is yet to be captured by the scheme. These preconditions are further exacerbated by underlying factors of economic recession, security challenges, and large population size amidst others. Financial risk protection for health care should, therefore, be a priority for Nigeria. Varying incidence of CHE from spending on specific health conditions in Nigeria has been documented including non-communicable chronic diseases, sickle cell disease, tuberculosis, outpatient and inpatient services, drugs for human immunodeficiency virus (HIV), and malaria treatment. The objective of this review is to systematically review scientific data from studies conducted in Nigeria that provide information on incidence and factors associated with CHE (Okedo-alex et al., 2019).

Incidence of catastrophic health expenditure

Eighteen studies reported on the quantitative incidence of CHE in Nigeria. There were 13 cross-sectional surveys, one prospective longitudinal study, and four secondary data analyses. Different thresholds were used to define CHE in the different studies; however, 40% of nonfood expenditure was the most commonly used single threshold. Some studies also estimated CHE at multiple thresholds. Catastrophic spending on health differed depending on the threshold used for estimation, health condition studied, and inpatient/outpatient status of the patient. The studies on incidence of CHE included in the review cut across different health concerns. Seven studies assessed the incidence of CHE arising from general health care, five studies assessed CHE on infectious diseases (HIV, malaria, tuberculosis, and Buruli ulcer), while five studies focused on CHE in non-communicable diseases (diabetes, sickle cell disease, and childhood epilepsy) and health of the elderly. Two of the studies only examined the determinants of CHE and impoverishment from CHE without reporting on incidence of CHE. Two studies assessed the incidence of CHE using 10% of total household income and found that 20.7% to 50% of the study population faced CHE. Three of the studies utilized 10% of consumption expenditure and 5% and 30% of nonfood expenditure to define CHE. At 10% of consumption expenditure, 9.6% of households experienced CHE. At 5% and 30% of nonfood expenditure, 8.2% and 45% of households experienced CHE respectively. Six studies utilized 40% of nonfood expenditure to define CHE. The incidence of CHE in different health conditions ranged from 6.6% to 63.6%. This was highest for inpatient treatment of childhood epilepsy at 63.6% while tuberculosis had the highest incidence of outpatient CHE at 44%. Seven studies utilized multiple thresholds for estimating CHE. Four studies utilized nonfood expenditure (10%, 20%, and 40%) in estimating CHE. At 40%, the incidence of CHE ranged from 7.7% to 94.3% and was highest for inpatient HIV care. All (100%) of HIV patients incurred CHE on inpatient care at 10% of nonfood expenditure in one of the studies.³⁵ Two of the studies defined CHE using household expenditure (5% and 10%). These found that 21.5% to 25.4% of the households incurred CHE (Okedo-alex et al., 2019)

This review was conducted to determine the incidence and factors affecting CHE in Nigeria and the policy implications for UHC. Studies included in the review utilized various thresholds and study designs to measure



CHE. We found that Nigerians incurred CHE for common ailments (communicable and non-communicable) for which they sought health care. Our findings suggest that there is high incidence of catastrophic spending among Nigerians regardless of the CHE threshold definition used.

At 10% of total household and nonfood expenditure, the incidence of CHE in this review ranged from 8.2% to 45%. Similarly, in a systematic review to estimate the incidence of CHE in 133 countries found that at the 10% non-food expenditure threshold, incidence of CHE was 0.3% to 44.5% with a mean incidence of 9.2% across countries. One of the studies reviewed showed that 9.6% of elderly households incurred CHE for general health care services.

In contrast, an Indian study found that a higher proportion of the elderly (15.8%) experienced CHE while accessing health services. Both studies utilized 10% or more of the total family income/consumption expenditure as the CHE definition. The higher proportion could be because the Indian study included indirect costs of care in the measurement of CHE while this was excluded in our reviewed study. At 40% of capacity to pay, 6.6% to 63.6% of Nigerian households incurred financial catastrophe while accessing health care. In contrast, similar reviews have found that smaller proportions of households experienced CHE at this same threshold. Similarly, a study conducted using the Kenya Household Health Expenditures and Utilization Survey data of 2007 found that 11.7% of households experienced catastrophic expenditures and 4% were impoverished by health care payments.⁴⁶ Additionally, studies conducted in Burkina Faso, Kenya, China, Malawi for different health conditions have found CHE incidence to range between 0.73% and 66.8%. Such high rates of CHE are often inequitable and unsuitable for the achievement of UHC as it inhibits access especially for poor households, who must often choose between paying for health and paying for other necessities such as food or rent. For households who go ahead to seek treatment using out-of-pocket funds, there is the risk of impoverishment. CHE has also been shown by the need to sell assets or borrow money or even to resort to begging. In contrast, most developed countries have advanced social institutions such as social insurance or tax-funded health systems that protect households from catastrophic spending. Thus, only about 0.5% of households in these developed countries face catastrophe from health spending.⁸ Nonetheless, Ghana and Rwanda, which are also developing countries located in Sub-Saharan Africa, have introduced community-based health insurance schemes with effective government control and support coupled with intensive implementation programmes. These would serve as case studies for other developing countries to learn from, in order to reduce OOPS and CHE. Financial catastrophe occurs in countries at all income levels⁵⁴ and thus underscores the importance of concerted global partnership in curbing the scourge of financial barriers to quality, equitable, and effective health care. In the studies that measured and reported CHE differently for inpatient and outpatient care in childhood epilepsy and HIV care, CHE was highest for inpatient care regardless of the underlying health condition. All (100%) of households that received inpatient care incurred catastrophic spending in one of the studies. Hospitalization for such medical conditions are usually as emergencies and are associated with high costing diagnostic tests, treatment, and nonmedical costs such as food in addition to the low-income level and lost earnings of the primary income earner who may be the patient or caregiver. Given the chronicity of HIV and epilepsy care, such CHE could affect continuity of care and increase mortality from these diseases. It was revealing to find that the incidence of outpatient CHE was highest for type 2 diabetes and tuberculosis while



HIV care incurred the most CHE among inpatients. This could be mostly attributed to the chronic course and long-term care associated with these diseases. Although CHE was highest in the southeastern part of Nigeria, this finding should be interpreted with caution as the region contributed the highest number of publications included in the review. Thus, this finding could be purely spurious and not reflective of the true country regional disparities in CHE. Similar to our findings, the incidence of CHE increased with lower threshold definitions in one of the reviews. However, it has been argued that lower thresholds are more equitable in measuring CHE among the poor than using the same threshold for all income levels. This is because relatively small expenditures on health can lead to financial hardships for poor households who spend almost all their available resources on basic needs and are thus ill-prepared to cope with even small health expenditures. Information on determinants is useful to policymakers seeking to protect those people most at risk from financial hardship while accessing health services. We identified several determinants of CHE in this review, but it is worthy to note that household poverty/low socio-economic status was the most common factor that increased CHE in six out of the eight studies that assessed determinants of CHE. Similarly, poverty has also been recognized as a determinant of CHE in other studies. This is especially so given that even small costs for common illnesses can be financially disastrous for poor households with no insurance cover. In Nigeria, such poor households typically belong to the informal sector that is yet to be covered by the National Health Insurance programme and thus resort largely to OOPe in order to cater for their health needs. To further reflect the role of income status on CHE, one of the studies also found that patients who were primary income earners had increased odds of CHE. We also observed that households without health insurance were more likely to incur CHE than the insured. This is similar to findings from studies in other countries. Currently in Nigeria, only the federal formal sector employees are beneficiaries/ enrolees under NHIS. Even with only formal sector enrolees, NHIS has been besought with a lot of operational challenges since its inception in 1999 such that only less than 5% of Nigerians have been captured in the scheme. Some of these challenges in addition to poor coverage are inadequate political commitment, gaps in the area of stewardship and governance, governance issues with the NHIS and poor buy-in by the states limiting coverage, large number of services on exclusion list, poor awareness on NHIS, and inefficient and poor-quality services. It is however interesting to note that households who had informal health financing arrangements were less likely to suffer CHE regardless of their insurance coverage status. Informal financing arrangements may present a viable option and platform for integration of the informal sector into the national social health insurance programme. The northeast and north central geopolitical zones of Nigeria were found to be more prone to CHE than other zones with only one publication in the review from that part of the country. This may be due to the continuing internal security issues in that part of the country with its attendant economic, health, and social effects. Similarly, other studies have noted increased CHE in marginalized areas. There was conflicting evidence on the role of place of residence on CHE with some studies reporting increased CHE among rural dwellers while others reported CHE to be more among urban residents; however, both views can be explained. Some studies have also documented that rural residence increased the risk of CHE while others have found similar effects with urban residence. Rural dwellers are usually poorer, less educated, and without access to expensive/sophisticated health care services, which are commonly available in the urban areas. These could affect their experience and reporting of CHE. Also, there are usually more



private health facilities in urban areas with probably higher medical costs of care compared with their rural counterparts; thus, patronage in such urban facilities will imply higher costs of care and risk of CHE. Likewise, we also found that utilization of health services in private health facilities increased CHE. These facilities being profit-oriented would usually charge higher user fees (paid out of pocket) than their public hospital counterparts, thus incurring CHE. This finding was however conflicting as one of the studies found lower odds of CHE among households that utilized health services from private facilities. Also, use of public health facilities has been associated with increased odds of CHE from other studies. This may be related to the high cost of specialized services especially in public tertiary hospitals compared with their private counterparts; hence, households tend to pay more at public health care facilities than private facilities. Regarding educational status, this review found that both the educated and uneducated were more likely to incur CHE. The educated may be more likely to seek and utilize health care, thus spending more on their health and increasing the risk of financial catastrophe while doing so. Similar findings have been documented in other studies. The increased odds of CHE among the uneducated could be due to their low-income status and reduced capacity to pay for health services, and this has been found to increase CHE in other studies. Older age of the household head and having an elderly household member was found to increase risk of CHE similar to other studies. The elderly are usually no longer gainfully employed and are prone to chronic diseases leading to increased use of health services and subsequent economic burden on the household. This is similar to findings from another study conducted in China. One of the studies among patients with tuberculosis found that male patients were more likely to incur CHE compared with their female counterparts. This could be because in the study setting, men were the primary income earners. Likewise, another study in this review reported a reduced risk of CHE among female household heads and adduced this to be because African women tend to spend less on health because of low financial status compared with their male counterparts. Our findings also showed that large household size and smaller household size among the elderly predisposed to CHE. Large households especially those with a higher number of dependents will have to take care of the health care costs of its members amidst other basic needs, and this can lead to catastrophe if the conditions for CHE are met. The elderly especially those whose adult income earning children have left home tend to have smaller households, may lack socio-economic support, and be afflicted with a variety of age-related chronic diseases that can further predispose to CHE. The protective effect of smaller household size on CHE has also been reported from other studies. The type of illness was found to be associated with CHE incidence as reported in one of the reviewed studies (Okedo-alex et al., 2019).

However, this study did not specify the type of illness associated with increased risk of CHE. In two of the studies, households with children who had current illness requiring treatment and tuberculosis patients co-infected with HIV were more likely to suffer CHE. This is probably due to associated increased financial demands of care. Also, other studies have found that non-communicable diseases were associated with higher incidence of CHE compared with other illnesses (Okedo-alex et al., 2019).

The high incidence of CHE and its varied determinants as shown by this review has implications for achievement of UHC in Nigeria and calls for action. Since CHE constitutes a strong deterrent to the achievement of UHC, there is need to move away from OOPS to progressive compulsory prepayment insurance



mechanisms. This should capture those vulnerable to CHE such as the poor, rural dwellers, elderly, chronically ill, and disabled. As most of them may be too poor to make contributions to the fund pool, special exemptions and caveats (safety nets) should be created with mechanisms in place to curb corruption and ensure transparency and accountability. Existing informal/- indigenous institutional pooling mechanisms exist in different parts of Nigeria using avenues such as cooperative societies, church associations, town unions, and kinship/age grade associations. These could be explored as possible platforms on which to build mandatory prepayment insurance schemes. This is especially as studies have shown that such pooling mechanisms are utilized by those identified to be at risk for CHE from this review (Okedo-alex et al., 2019).

Community-based health insurance schemes should be strengthened by the government and formation of more supported. This will achieve wider coverage of the informal sector and additionally garner more client goodwill and participation. Outright removal of user fees given the current Nigerian situation (economic recession, poor budgetary allocation for health, and dependence on private expenditure cum OOPS) without a worthy alternative in place can have untoward effects on other components of the health system however, a graded reduction to the point where it is affordable to most of the population is recommended. This is because studies have shown that Nigerians would prefer paying user fees if they are affordable and health services are efficient and of sufficient quality. Multisectoral stakeholder engagement and intersectoral collaborations between government ministries such as finance, health, agriculture, labour, women affairs, media and the private sector is equally important as it will foster Health-in-All policies and provide solutions for the identified contextual determinants of CHE. The low capacity to pay for health services (due to poverty, unemployment, poor educational status, and gender), misdistribution of health facilities, and country geographical differences are some of the areas that can be addressed by inter- sectoral collaboration (Okedo-alex et al., 2019).

To improve health financing, innovative financing mechanisms such as sin taxes on tobacco products and sugared drinks, mobilization and engagement of the private sector (such as telecommunications and banks), and local philanthropists should be employed. For the telecommunications industry, an arrangement whereby a predetermined percentage of each recharge card purchased goes into the revenue pool for financing health can be implemented. Additionally, there is need for donors to do more to meet their stated international commitments for development and assistance to developing countries with less focus on vertical programme funding in order to provide more sustainable financing to the Nigerian health system. It is especially important to expedite the release of funds and implementation of the basic health care fund so as to promote universal coverage in Nigeria. One limitation of this study has to do with the scope of the reviewed publications. There was paucity of literature from some parts of the country such as the North and Middle Belt with most studies conducted in Eastern and Western Nigeria. Consequently, it may be inappropriate to generalize the findings because of the diverse socioeconomic and cultural settings of Nigeria (Okedo-alex et al., 2019)

Out-of-pocket share of total health expenditure compared with percentage of households with catastrophic health expenditure

Catastrophic health spending may push some households over into impoverishment. The percentage of impoverished households attributed to health payments in the sample ranges from 0.1% to 5%. For some countries, including Egypt, Lebanon and Yemen, such an observation is a major concern for health care



financing policies. It is also important to note that some households may choose not to seek health care in order not to become impoverished.

Economic growth and increase in per capita income will make more resources available for the health system. However, the problem of catastrophic health spending may persist. There is a need for development of alternative health financing options to deal with the problem. Xu et al used multivariate regression in order to identify the determinants of catastrophic health spending. The results indicate that of out-of-pocket share of total health expenditure, total health expenditure share of GDP and percentage of households below the poverty line significantly affect the percentage of households with catastrophic health spending. There are good justifications to explain the impact of share of GDP spent on health on percentage of households exposed to catastrophic health spending. First, once services become available as a result of investment in capacity-building in health services, households will try to utilize them, sometimes to the extent that they become impoverished. Second, the capacity to provide service creates its own demand, causing higher overall health expenditure; the so called “induced demand” hypothesis. Therefore, countries need to consider not only how much they spend on health but also what that money is spent on. In other words, availability of, and paying for, certain expensive services may result in a higher percentage of households facing catastrophic health spending.

The results of Xu’s study proved to be robust to changes in the cut-off points used to define poverty line and catastrophic payments. According to the findings, a 1% increase in the out-of-pocket payment share of total health expenditure leads to an average 2.2% increase in the percentage of households facing catastrophic payments. Furthermore, a 1% increase in the total health expenditure share of GDP or a 1% increase in percentage of households below the poverty line are associated with a 1.6% and a 0.2% increase in the percentage of households exposed to catastrophic spending, respectively.

The results strongly suggest that out-of-pocket spending is the main cause of households’ exposure to catastrophic spending. The development of prepayment schemes provides a direct route to reduce catastrophic health spending. However, there are alternative strategies. Programmes that subsidize highly expensive health services, or provision of certain services for the poor would protect the largest segment of the population against catastrophic health spending.

Xu et al used household expenditure surveys and national health account information from 59 countries for which the necessary data were available to calculate the percentage of households exposed to catastrophic health spending and to analyze its determinants.

The percentage of households facing catastrophic spending from out-of-pocket health-related expenses varied widely between countries, from less than 0.01% in the Czech Republic and Slovakia to 10.5% in Viet Nam. With the exception of Greece, Portugal, Switzerland and the United States of America (USA), the percentage of households with catastrophic spending in countries that have well developed social health insurance or tax-funded health systems was less than 0.5%. There were five countries from the Eastern Mediterranean Region in the sample: Djibouti, Egypt, Lebanon, Morocco and Yemen. The percentage of households facing catastrophic spending ranged from 0.17% in Morocco to 5.17% in Lebanon.

In most middle-income and low-income countries, including countries in the Eastern Mediterranean Region, households seeking health services are often forced to borrow money, sometimes at very high interest rates, or



to sell their assets, in order to pay for health services. The alternative for such households is to forgo health services and live with their illness and suffer the short-term and long-term consequences (Rc, 2004).

It is worth noting that catastrophic health expenditure is not always synonymous with hospitalization or high-tech medical treatment. For some households, medication can represent catastrophic expenditure. Households' ability to pay depends on the relative size of the cost of health services in relation to their income.

Health care spending is taken to be catastrophic when a household must reduce its expenditure on basic items, such as food, in order to cope with health costs. In this paper, following Xu et al, health expenditure is defined as catastrophic if the proportion of the household's out-of-pocket health spending compared to the remaining income after basic subsistence needs have been met is at least

Out-of-pocket expenditure on health includes all direct types of health-related expenses incurred at the point of receiving service, such as consultation fee, purchase of medicine, laboratory services, diagnostic services and hospitalization. All reimbursements from third-party payers are deducted. Indirect costs of seeking health care, such as transport and lost earning, are not included. Therefore, the percentage of households exposed to catastrophic spending will probably be underestimated. A household's subsistence level for each society is calculated based on the total expenditure on food adjusted for household's size.

Positive association between the percentage of households facing catastrophic spending and the share of out-of-pocket payment in total health expenditure, results also show that at any given level of share of out-of-pocket payment in total health expenditure, the percentage of households facing catastrophic spending varies substantially. These findings suggest that, first, in some countries the impact of catastrophic health spending is on selected households. Second, there are other contributing factors that explain the observed pattern of the catastrophic health spending (Rc, 2004).

Total health expenditure as a share of world gross domestic product increased from 3% in 1948 to over 8% today. The world spent US\$ 3.8 trillion on health in 2001. However, there is wide variation in per capita health expenditure between and within the different countries of the world and the Eastern Mediterranean Region. Most governments of the Region have had to cut the real per capita budget for health because of poor economic performance. In order to maintain the integrity of the public health system, public health policy-makers have introduced cost containment and cost recovery strategies, including indiscriminate user fees. As a result, households have increasingly been facing financial difficulties in paying for necessary health services. Some households, especially poor households, have to pay such a substantial share of their income for health services that they are pushed into poverty, with catastrophic consequences. Many households facing large health expenditures, relative to their income, have to borrow, sell their assets or forgo the health services needed and to live (or die) with their illness and suffer the consequences. Moreover, as a result of the dynamic dual interlink between health and poverty, many households will not be able to escape the trap of ill-health and poverty once they fall into it (Rc, 2004).

Empirical results strongly suggest that out-of-pocket spending for health services is the main culprit behind catastrophic health expenditures. In most poor and middle-income countries of the Region out-of-pocket spending accounts for more than 50% of total health expenditure. Prepayment schemes provide a direct route to elimination of catastrophic health expenditures. There are several alternative health care financing options in



order to develop prepayment schemes and universal coverage, including tax-funded government-sponsored schemes and social, private and community-based health insurance schemes. There is no unique prepayment scheme appropriate for all countries of the Region (Aregbeshola & Khan, 2018).

The experience of the countries of the world that have achieved universal coverage shows that they all go through a transition. During the transition, the share of public spending through taxation and/or social health insurance increases, while the share of out-of-pocket spending decreases. The transition period and exact pathway is determined by many factors, including the political will of policy-makers and the economic performance of the country (Rc, 2004)

There is an overall positive relation between the proportion of households with catastrophic health expenditures and the share of out-of-pocket payments in total health expenditure. At any level of the share of out-of-pocket payments in total health expenditure, the proportion of households facing catastrophic health expenditure varies substantially. For example, in Belgium, Hungary, Israel, USA, Guyana, and Lithuania out-of-pocket payments range from 20% to 25% of total health expenditure. In these countries, catastrophic payments range from 0.09% in Belgium to 1.34% in Lithuania; despite the small volume of health payments through out-of-pocket expenditures the consequences could be on selected households. As the volume of total health expenditure met by out-of-pocket payments increases, the range of catastrophic payments also increases. Argentina, Colombia, Mexico, and Thailand have between 40 and 45% of total health expenditure through out-of-pocket payments and catastrophic expenditures ranging from 0.8% in Thailand to 6.3% in Colombia. Additional factors must, therefore, play a part in leading to catastrophic payment. Given that catastrophic payments occur when households pay large shares of their capacities to pay for health services, we expected, holding everything else constant, that the probability of catastrophic payments would be greater where levels of poverty and health-care use are higher (Xu et al., 2003). The results are robust to changes in the cut-off points used to define poverty and catastrophic payments. They confirm that countries with a higher share of out-of-pocket payments in total health expenditures are more likely to have a higher proportion of households facing catastrophic expenditure after controlling for other possible determinants. A 1% increase in the proportion of total health expenditure provided by out-of-pocket payments is associated with an average increase in the proportion of households facing catastrophic payments of 2.2%. The coefficients of the proportion of the population living below the poverty line and the share of total health expenditure in the GDP are significant, and positively correlated with the proportion of households with catastrophic expenditure as postulated. A 1% increase in poverty will increase catastrophic payments by 0.2% and a 1.0% increase in the share of the gross domestic product spent on health will increase catastrophic payment by 1.6%. The overall fit of the equation is good, with 77.2% of the variation in the share of households facing catastrophic payments across countries explained by variation in the independent variables. About 23% of the variation is not, however, explained by the chosen explanatory variables and other possible determinants need to be identified. Geographical or regional dummies not significant, and some additional explanatory power might be found by including country-specific factors that influence the way that health systems are organized and funded. These are not, however, easy to define in a way that is amenable to cross-country regression analysis and remain a priority for future analysis (Xu et al., 2003).



Measuring Catastrophic Effect of Out-of-Pocket Health Payments

There is no consensus in the existing literature and among health economists on the threshold proportion of household expenditure. However, there is an agreement that catastrophic health expenditure are medical spending or OOP health expenditure that exceed a defined threshold of household's total consumption or non-food consumption expenditure annually. Two methods are generally used in measuring catastrophic health payments. They include estimating catastrophic health expenditures with health expenditures as a share of total expenditures and non-food expenditures and as a share of capacity to pay. Some scholars have argued that these two methods do not consider household's external resources. Regardless of the arbitrary nature of thresholds used, majority of previous studies on defining catastrophic payments used methods proposed by Wagstaff and van Doorslaer, O'Donnell et al, and Xu. This study employed the approach used by Wagstaff and van Doorslaer to measure catastrophic payments for healthcare as in previous studies. The method for estimating catastrophic effect of OOP health payment is well known and described in details elsewhere (Aregbeshola & Khan, 2018).

Catastrophic Effect of Out-of-Pocket Health Payments

The distribution of catastrophic health payment at thresholds ranging between 5% to 40% for both total household expenditure and household non-food expenditure at the threshold of 5% of total consumption expenditure catastrophic head count ratio was at 18.2%. This decreased to 16.4% at 10% threshold of total consumption expenditure. Only 13.6% of households incurred OOP health payments on healthcare in excess of 25% of total consumption expenditure while 12.3% of households incurred catastrophic health payments at 40% threshold of total consumption expenditure. Furthermore, at 5% threshold of non-food expenditure, 20.5% of households incurred catastrophic health payments. This decreased to 18.6% at 10% threshold of non-food expenditure. Only 15.5% of households incurred OOP health payments in excess of 25% of non-food expenditure while 13.7% of households incurred catastrophic health payments at 40% threshold of non-food expenditure. The positive concentration index shows that the intensity of catastrophic health expenditure affects the better-off households more than the poor, the proportion of households that incurred catastrophic health payments at 10% threshold of total consumption expenditure while the proportion of households that incurred catastrophic health payments at 40% threshold of non-food expenditure (Aregbeshola & Khan, 2018).

The impoverishing effect of OOP health payments Using the World Bank \$1.2 a day poverty line, as many as 97.9% of households is estimated to be in poverty based on total consumption expenditure. This increases to 98.7% when OOP health payments are netted out of total consumption expenditure. Only 0.8% of households are not living in poverty but would be pushed into poverty if OOP health spending were netted from total consumption expenditure. OOP health payments led to a 0.8% rise in poverty headcount ratio. This represents 1 268 800 Nigerians being pushed below the poverty line due to OOP health payments. There is also a relative rise of 0.8% in the estimate of extreme poverty. Poverty gap rises from 2492.2 Naira (Aregbeshola & Khan, 2018).

**CONCLUSION****Catastrophic Effect of Out-of-Pocket Health Payments**

Households in Nigeria incurred catastrophic OOP health payments. At 10% threshold of total consumption expenditure, Nigeria had higher catastrophic effect of OOP health payments compared with African countries such as Ghana, Kenya, Mongolia, Senegal, Zambia, and Swaziland but is better off than Uganda and Egypt. At 40% threshold of non-food expenditure, Nigeria had higher catastrophic effect of OOP health payments compared with Egypt, Kenya, Mongolia, Malawi, Ghana, Burkina Faso, Zambia, and Swaziland but is better off than Tanzania (Aregbeshola & Khan, 2018).

In this study, better-off households are more likely to spend a large fraction of total household resources on healthcare. The empirical finding that the better-off households are more likely to incur catastrophic health payments than poor households in Nigeria is supported by similar studies conducted in Mongolia, Egypt, Nigeria, Asia, and Cambodia. A possible explanation is that poor households may seek low quality care, avoid seeking healthcare at all or resort to self-medication due to inability to pay for healthcare services (Aregbeshola & Khan, 2018)

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