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The Impact of Health Insurance Policies on Catastrophic Health Expenditures in Nigeria

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Abstract

Catastrophic health expenditures (CHE) remain an enormous problem of financial instability to households in Nigeria despite the introduction of health insurance policies. This research assesses the impact of health insurance policies especially the National Health Insurance Scheme (NHIS) on CHE in Nigeria. A desk-based research approach is employed, and secondary data is collected from national databases, policy documents, and reviewed literature to carry out the study. Results show that while health insurance has ensured some financial protection, the coverage is still limited, particularly in the informal sector which makes the incidence of CHE to remain high. Policy gaps and challenges of implementation together with inequities in access are identified as key barriers to accomplishing financial protection. The study concludes that a large proportion of Nigerians suffer significantly in the quest for seeking healthcare. It recommends expanding equitable insurance coverage particularly to vulnerable populations, reducing reliance on out-of-pocket (OOP) payments, and strengthening policy implementation and monitoring.

Keywords: Health Insurance; Catastrophic Health Expenditures; Universal Health Coverage; National Health Insurance Scheme; Health Policy; Nigeria

1. Introduction

Health financing is an essential part of attaining universal health coverage (UHC), especially in low- and middle-income countries (LMICs), where out-of-pocket (OOP) payments account for the greater part of healthcare expenditure. Catastrophic health expenditure (CHE) happens when payments from OPP spending agency rise above a set percentage of household income which frequently results in financial hardship or poverty (WHO, 2023). According to estimates from the World Bank and the World Health Organization (WHO), the incidence of CHE (defined as spending more than 10% of household consumption on health) increased from 579 million in 2000 and 785 million in 2010 to 13.2% globally in 2017, or about 996 million people. In Nigeria, healthcare expenditures amount to 70% on average are OOP, exposing households to CHE (World Bank, 2022).

The Nigerian government launched the National Health Insurance Scheme (NHIS) in 2005 to pool risks and cut the amount of OOP expenditures in order to financially protect people and provide equitable access to health. However, despite all these policies, recent evidence suggests that a fairly large percentage of Nigerian households are still experiencing CHE, particularly among the underprivileged and the informal sector (Ogunyemi et al 2021). This study aims to critically assess the impact of health insurance policies on CHE in Nigeria.

OOP payments, a common feature of health funding environment in Nigeria which frequently constitutes between 70 and 75 percent of all health expenditure. This number is one of the highest in the world and is substantially higher than the WHO's recommended cut-off point of 20% or lower that is believed as being necessary to provide financial security

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among the households. This high OOP burden is caused by a number of structural issues. Government health spending usually falls below 1% of GDP and falls well short of the 15% Abuja Declaration objective, indicating that public health financing is still chronically low. Public health facilities are therefore frequently underfunded, ill-equipped, and limited in their ability to provide services. The cost of care is directly transferred to households due to this underinvestment.

The state of health financing system in Nigeria, owing to poor public investment, poor insurance coverage, as well as systemic inefficiencies, is still substantially dependent on household OPP expenditures. This creates serious challenges to achieving UHC and enhancing financial risk protection.

1.1. Statement of the Problem

Despite the establishment of health insurance schemes, a large number of Nigerian households are still exposed to adverse effects of CHE. This is a financial burden that limits access to necessary healthcare services and adds to poverty cycles. About 70-75% of the total medical expenditures are still made with OOP modes, which is very high as compared to other international guidelines (WHO, 2021). As a result, millions of Nigerian households are faced with CHE annually, and many are thrown into poverty due to medical expenses (World Bank, 2020). Research shows that 10-25% of households, especially poor households with no formal insurance, incur catastrophic spending (Aregbeshola & Khan, 2018; Onwujekwe et al., 2019). This persistent financial insecurity raises questions about the effectiveness of current health insurance policies on CHE and making people financially secure by pointing out a critical disconnect between the desired and realized consequences of health insurance reforms.

Studies further suggest that due to low coverage rates, poor enforcement of policies, and lack of awareness, health insurance schemes are not achieving the desired level of effectiveness in Nigeria (Uzochukwu et al., 2020). There is a need to measure the impact of these health insurance policies using the available secondary data to determine future reforms.

1.2. Research Objectives

- To analyze the effects of the health insurance policies on CHE in Nigeria.
- The role of existing health financing mechanisms in providing financial protection.
- To determine policy gaps and challenges that are limiting success of health insurance schemes.

1.3. Research Questions

- How effective are the existing health insurance policies on CHE in Nigeria?
- What are the barriers in financial protection of health insurance schemes?
- What are the policy reforms to enhance the role of health insurance on CHE?

1.4. Significance of the Study

This study contributes to the policy discourse by finding evidence on the efficacy of health insurance for protecting households against financial shocks. It provides data that policymakers and healthcare providers, among other researchers, can use to enhance financial security for Nigerian households and reduce OOP expenditures by strengthening health insurance policies. Overall, the study adds to the development of UHC in Nigeria, which seeks to offer access to essential healthcare services and financial risk protection for everyone.

2. Conceptual Review

2.1. Health Insurance

Health insurance is a risk-pooling that allows individuals to have healthcare services without having to pay a lot of OOPS (OECD, 2021). Schemes can be social, community-based, or private, and the coverage mechanisms are different from one another.

Health insurance is a financial agreement for the protection from the pricing of medical care. It burdens the health risks of groups of people so the financial cost of illness does not fall on the person affected alone. Through recurring prepayments (premiums or contributions), health insurance enables individuals to access healthcare services without paying the total cost at the time of use, thereby improving financial protection and health-seeking behavior.

2.2. Types of Health Insurance

I. Social Health Insurance (SHI): This is a mandatory insurance model in which contributions are pooled from employers, employees, and sometimes the government. It is typically regulated by the state and aims to provide broad population coverage. It is based on solidarity and risk-sharing. For examples, Germany's SHI system and Nigeria's NHIA reforms aim to adopt SHI principles.

II. Community-Based Health Insurance (CBHI): CBHI is a voluntary, non-profit insurance scheme designed for low-income and rural communities, particularly those in the informal sector. Members contribute small premiums into a communal pool. It is managed by community groups or cooperatives. It helps to increase access for those who are excluded from formal insurance. It is also prevalent in many African countries including Nigeria.

III. Private Health Insurance (PHI): This is bought privately from private insurers. Premiums are based on the degree of risk of an individual and the extent of the coverage. It is frequently used by the higher income groups or employers. It can provide more comprehensive services but then be restricted from serving high-risk people. In Nigeria, PHI is covering a small percentage of population.

IV. National Health Insurance/Public Health Insurance: This refers to government-led schemes that provide health coverage for the citizens, and often subsidized using public funds. It may be mandatory or voluntary. It focuses on delivering balance in terms of universality and equity. Nigeria's NHIS/NHIA is in this category.

IV. Employer Based Health Insurance: This is offered by employers as a part of employee's benefits. It is common in the formal employment sectors. It is most times a requirement for employees within the organization.

2.3. Catastrophic Health Expenditure

This occurs when a household's OOP expenses surpass a certain portion of its capacity to pay for medical treatment. This could indicate that the household is unable to pay for other requirements such as food, housing, water, power, and fuel for cooking and heating or is unable to pay for the necessities without using up savings, selling off assets, or borrowing money. CHE reflects the inability of health financing systems to protect households from health related financial shocks. High CHE is an indicator of a lack of financial protection and inadequate health financing systems. Quite a few threshold levels are being used, most generally are: 10% of total expenditure by households or 40% of non-food (capacity-to-pay) expenditure.

2.4. Health Financing in Nigeria

Nigeria's health system is financed through a mix of OOP payments, government funding, and donor contributions, with insurance coverage remaining below 5% of the population (NHIA, 2023). Health care financing involves gathering money from a variety of sources (government, households, businesses, and donations), pooling, and utilizing it to pay for services from both public and private health care providers. Nigerian health care financing options include OOP (user payment), health insurance (social, community-based insurance, private health care financing), donor funding, exclusions, deferrals, and subsidies. OOP payments are those that a patient makes directly to a healthcare provider; these are paid at the point of service and are also known as user fees. The range of user fees is unpredictable and may consist of any mix of admittance, consultation, medication, and medical material charges.

2.5. Policy Context of Health Insurance in Nigeria

Nigeria's health financing landscape has seen a number of policy reforms that have been targeted towards increasing health insurance coverage and limiting OOP expenditures.

I. National Health Insurance Scheme (NHIS)/National Health Insurance Authority (NHIA): NHIS was instituted in 2005 to cover social health insurance, primarily intended to be formal-sector employees. However, coverage remained low, traditionally lower than 5-10% of the population because of voluntary enrollment, weak enforcement, and lack of reach in the informal sector.

In 2022, the NHIS became the NHIA. The NHIA Act mandated all Nigerians have health insurance, enhanced regulation of insurance providers, and introduced mechanisms to enhance risk-pooling and coverage and integrate schemes at state level to national level.

II. Basic Health Care Provision Fund (BHCPF): The National Health Act of 2014 established the BHCPF, which went into effect in 2018 engages the public with the goal to increase public financing for primary healthcare. It uses 1% Consolidated Revenue Fund (CRF) for the provision of necessary services, modernization of facilities, workforce finance, and service delivery through:

- National Primary Health Care Development Agency (NPHCDA) for Primary Health Care operations.
- NHIA for financing a basic minimum health package.
- Federal Ministry of Health for emergency medical services.
- The BHCPF seeks to lower the cost of primary healthcare, particularly for underprivileged and vulnerable groups.

III. State-Level Social Health Insurance Schemes (SSHIS): As a result of the federal level reforms, many states have developed the SSHIS to provide coverage for households in the informal sector. These schemes are aimed at enrolling people into state-managed insurance schemes often with the support of BHCPF funds. Nonetheless, implementation varies widely across states with issues such as poor funding, poor enrolment strategies, and low awareness among the people. Together, the NHIA reforms, the BHCPF, and insurance schemes from states represent the change toward UHC in Nigeria. On the other hand, implementation gaps, low enrollment, and dependence on OOP payments persist and continue to reduce their influence on financial risk protection.

3. Empirical Review

Empirical studies show that health insurance can reduce the risk of CHE. For instance, Aregbeshola and Khan (2018) study in Nigeria revealed that insured households were less likely to be affected by CHE when compared to uninsured households. Similarly, studies from Ghana and Rwanda prove that social health insurance can have a deviating effect on financial hardship.

On the other hand, other studies show that there are persistent inequities. Coverage is often limited to formal sector employees, leaving the informal sector and rural populations vulnerable (Onwujekwe et al., 2019). Furthermore, administrative inefficiencies and poor enforcement of policy frameworks limit the protective effects of health insurance.

Current insurance arrangements have not yet provided widespread financial protection, according to reviews and national analyses (Okedo-Alex 2019; Edeh 2022; Aregbeshola 2018) that show high OOP reliance, CHE concentrated among the poor, wide subnational variation, and limited insurance penetration.

According to a panel research, Kwara State's subsidized health insurance program decreased the likelihood of CHE (defined as OOP > 10% of consumption) by 5.7 percentage points among insured households and 4.3 percentage points in the general population. The impact was especially significant for households with a member with a chronic illness (9.4 pp short-term) and the poorest tercile (7.2 pp reduction). Nevertheless, there was no statistically significant decrease in CHE throughout the longer-term (4-year) follow-up.

The WHO/World Bank Global Monitoring Report on Financial Protection in Health (2021) contains data that nations with better prepayment (insurance) systems have better financial risk protection which lowers CHE.

The primary goal of health finance reform is to reduce catastrophic OOP medical expenses by increasing health insurance coverage, according to the World Bank's "Health Financing" brief.

According to Wagstaff's (2017), World Bank-led report Progress on Catastrophic Health Spending in 133 Countries, nations with greater insurance and prepayment coverage typically have lower CHE over time.

3.1. Identified Gaps

Despite growing research on health insurance and financial protection in Nigeria, significant gaps remain. There is limited comprehensive evaluation of the NHIS post-2020 reforms. Furthermore, few studies integrate both policy analysis and secondary data trends to evaluate how well health insurance reduces CHE across the country. Hence, the true extent to which health insurance policies reduce CHE in Nigeria remains insufficiently understood.

3.2. Theoretical Review

3.2.1. Risk-Pooling/Social Health Protection Theory

The risk-pooling is the cornerstone of health insurance. According to this theory, individuals contribute regularly to a common fund (insurance premiums), which is then used to cover the healthcare costs of any member who falls ill. By distributing financial risk across a larger population, households are protected from catastrophic OOP expenses. In Nigeria, NHIS/NHIA and state-level schemes aim to operationalize risk-pooling; nevertheless, insufficient enrollment, especially among workers in the informal sector, limits their efficacy and results in less than ideal financial protection.

Hence, risk-pooling provides a solid theoretical framework for comprehending how health insurance policies reduce CHE, linking prepayment and collective financing arrangements to improve financial protection outcomes.

3.2.2. Financial-Protection/UHC Performance Framework

According to the financial-protection/UHC performance framework, one of the primary objectives of UCH is financial protection: households have the ability to obtain necessary medical care without incurring excessive costs or poverty. To lessen the severity and frequency of CHE, policy levers such as revenue collection (prepayment), risk-pooling, benefit design, provider payment, and targeted subsidies work by strengthening cross-subsidization and reducing OOP spending.

3.2.3. Depth-vs-Breadth Tradeoff (Benefit Design Theory)

The depth-vs-breadth tradeoff, a core concept in benefit design theory, explains how the structure and generosity of health insurance packages influence financial protection and CHE. While breadth is the population's percentage that is covered, depth is the percentage of health care costs that insurance covers, and height is the variety of services that are part of the benefit package. Expanding breadth without increasing depth under financial constraints frequently results in shallow coverage, which is defined by high copayments, restricted reimbursement, or narrow service coverage. This results in a chronic CHE and a long dependence on OOP payments. Increased depth of benefit package reduces financial shock at the point of care. Empirical research suggests that depth of coverage rather than population coverage alone was more strongly linked with reductions in CHE.

Table 1 Breadth vs. Depth vs. Height

Dimension	Definition	Key Policy Questions	Influence on CHE	Examples
Breadth	Who is covered (population coverage)	How many people are covered under the insurance scheme?	Low effect on CHE unless depth and height are adequate	Enrolling informal workers; national ID-based enrollment
Depth	Share of costs covered by insurance (financial coverage)	How much does insurance pay vs. what households pay out-of-pocket?	Strongest direct effect on CHE reduction	Low copayments, high reimbursement rates, elimination of user fees
Height	Range of services covered (service package)	What types of services are included in the benefit package?	Moderate effect; uncovered services still cause CHE	Inclusion of drugs, diagnostics, NCD services, maternal care
Tradeoff	Balancing breadth and depth under limited budgets	Expand to more people or offer deeper benefits to fewer?	Shallow broad coverage often fails to reduce CHE	Covering everyone but with high copayments or limited medicines
Optimal Strategy	Integrated, sustainable expansion of all three	How to maximize financial protection?	Broad + deep + wide coverage lowers CHE most effectively	National health insurance with explicit benefit package

3.2.4. Universal Health Coverage (UHC) and SDG 3.8 Alignment

Theoretical underpinnings of UHC and SDG 3.8 emphasize the provision of necessary health services without financial hardship. Health insurance policies in Nigeria, including NHIS/NHIA and BHCPF, are designed to operationalize these

global objectives. The effectiveness of these policies is theoretically contingent on enrollment, benefit depth, prepayment mechanisms, and supply-side readiness.

3.3. Theoretical Framework

This study adopts the model of SHI and the framework of UHC. The model assumes that compulsory health insurance is a way of risk-pooling that offers risk financial protection, and so reduces the risk of CHE.

3.3.1. Social Health Insurance Model

It is a mandatory or quasi-mandatory health financing mechanism where individuals make payments to a collective fund, typically through payroll taxes or health insurance premiums, and healthcare services are paid by collective funds for the people who are members of the collective fund. The model is usually designed so that there is a sharing of risk across the population and a sharing of financial burden on individual households, especially with regard to CHE (Kutzin, 2013; Carrin & James, 2005).

3.3.2. Key Features of SHI

- Mandatory contributions: Usually for formal sector; some have the informal sectors through voluntary or subsidized premiums.
- Risk-pooling: Combines resources of all the contributors to distribute the risk to the whole population.
- Cross-subsidization: The healthy and rich contributors provide indirect subsidies for care of sick and poor people.
- Prepayment: Prepayment can take contributions before the service is provided and can therefore help to reduce OOP expenditure.
- Defined benefits: SHI schemes define the services and typically reduce their relative costs.

3.3.3. Impact on Catastrophic Health Expenditure

SHI helps by shifting the payment from OOP to pooled prepayment, and therefore keeps the households safe from financial shocks in terms of illness. It is effective based on coverage breadth (population enrolled), depth of benefits (proportion of costs covered), and service package height (range of services covered) (Wagstaff et al, 2018; Nguyen & Wodon, 2019). Fragmented SHI schemes, especially in LMICs often fail, if they do not offer full protection which is not the case without integration or subsidization of vulnerable populations.

3.3.4. Universal Health Coverage Framework

WHO defines UHC as the process of ensuring that all individuals receive the health services they require without having to endure financial hardship. UHC has three interrelated dimensions (Kutzin, 2013; WHO, 2010):

- Population coverage (breadth): Who is covered by the health system.
- Service coverage (height): Which services are included (essential, high-priority services).
- Financial protection (depth): The proportion of costs covered; minimizes OOP payments and CHE.

3.3.5. Key Principles

- Equity: Services and financial protection should be a priority to vulnerable populations.
- Prepayment and pooling: In order to avoid potentially catastrophic OOP payments, money should be collected in advance and pooled to share the finance risk across the population.
- Comprehensiveness: Benefits package should include priority health needs.
- Sustainability: Financing has to be adequate and predictable to support coverage expansion.

3.3.6. Financial Protection under UHC

UHC is operationalized by monitoring CHE (SDG 3.8.2) and poverty due to health expenditures. It highlights the integration of financing mechanisms such as SHI, tax-based funding, and community-based schemes for achieving universal access and reducing CHE. There are empirical evidences indicating that countries with a strong framework of UHC and integrated SHI schemes experience substantially reduced incidence of CHE (Wagstaff et al., 2018; WHO, 2023).

3.3.7. Linking SHI and UHC

For analyzing health insurance policies and CHE:

- SHI functions as a financing mechanism under the UHC framework.
- Financial protection theory/risk-pooling explains how SHI reduces CHE by prepayment, pooling, and cross-subsidization.
- Benefit design (depth, breadth, height) moderates SHI's effectiveness in reducing financial hardship.
- Integration within UHC ensures equity, comprehensive coverage, and inclusion of vulnerable populations to maximize the decrease of CHE.

4. Methodology

4.1. Research Design

The study uses descriptive and analytical research design, secondary data collection, and analysis of documents. By analyzing national-level datasets, published reports, and peer-reviewed literature, the study assesses the impact of health insurance policies on CHE in Nigeria.

4.2. Sources of Data

For data acquisition, the following were collected as secondary data: NHIA reports and policy documents, National Bureau of Statistics (NBS) health and expenditure surveys, WHO Global Health Expenditure Database, World Bank health financing reports, peer-reviewed articles, and systematic reviews on Nigerian health insurance and CHE.

4.3. Data Analysis

The study analyzes data using descriptive statistics to identify trends in changes in health insurance coverage, OOP payments, and CHE incidence over time. Content and thematic analysis was undertaken among policy documents and published literature to assess the effectiveness of health insurance policies, implementation gap, and equity considerations. Comparisons were drawn among population groups (e.g., rural and urban, formal and informal sector) to ascertain the disparity in the financial protection they experience.

5. Results and Discussions

Based on secondary data analysis and literature review, here are some key results on the impact of health insurance policies, especially the NHIS and more localized schemes on CHE in Nigeria.

A longitudinal analysis “Exploring dynamics in CHE in Nigeria” showed that CHE from OOP payments remains very high, especially among poor households. The study found inequality: the burden of CHE is disproportionately on the poor. Over time (from 2010/2011 to 2015/2016), catastrophic payment levels rose significantly in certain groups. The authors stress that enhancing prepaid financing mechanisms (that is, increasing health insurance coverage and depth) is essential to reduce financial catastrophe.

The NHIS has limited reach: a study using the Nigeria Living Standard Survey (2009/2010) found at a threshold of 10% of total consumption, 16.4% of households experienced CHE; and at a 40% non-food expenditure threshold, 13.7% experienced CHE. The study further estimated the amount of OOP payments that pushed about 1.3 million Nigerians under poverty line. The study concluded that NHIS has not provided adequate financial risk protection; heavy reliance on OOP remains problematic.

Furthermore, the 2024 analysis using 2018/2019 Nigeria Living Standard Survey data revealed that the incidence and degree of CHE is greater among the poorest income quintiles. The report estimated that about 1 million Nigerians had been driven into impoverishment due to OOP health payments. The study recommended widening the coverage of SHI to reduce this amount of financial burden.

Health insurance policies in Nigeria offer partial financial protection because most households still face the burden of CHE. Consistent with the findings from the other LMICs, the results indicate that insured individuals are less likely to incur CHE, reflecting the protective effects of the mechanisms of prepayment and risk-pooling (Xu et al., 2003; Aregbeshola & Khan, 2018). However, the overall impact on population as a whole is limited because there are still significant gaps in the coverage, specifically among households in the informal sector and rural areas, where levels of

insurance penetration are extremely low. These gaps compromise the potential of health insurance to be an effective tool in protecting people from financial risk.

Moreover, barriers in implementation including administrative inefficiencies, insufficient funds, poor regulatory framework, and lack of public awareness reduce the effectiveness of current implementation schemes such as NHIS. These limitations point to weaknesses within the health insurance system in limiting the ability of health insurance to prevent the impoverishment of health expenditures.

6. Conclusion

Health insurance policies in Nigeria have made modest progress in ensuring that CHE are reduced. Formally employed and adequately insured populations have received the greatest benefits. Nevertheless, these gains are limited in scope due to persistently high OOP payments, low insurance coverage in especially in the informal sector and rural dwellers, and systemic implementation challenges. As a result, a large proportion of Nigerians still face significant financial hardship when seeking healthcare.

To achieve significant reductions in CHE, it will be necessary for Nigeria to implement comprehensive policy reforms that focus on increasing equitable insurance coverage particularly to vulnerable populations, reducing reliance on OOP payments, strengthening monitoring and accountability mechanisms, and ensuring sustainable financing in line with the principles of SHI and the goals of UHC.

6.1. Recommendations

- Expand health insurance coverage to the informal sector by using community-based health insurance and strengthening state-level social health insurance schemes: Customized use of enrollment strategies and flexible mechanisms to raise contributions to social health insurance can boost participation among poor and rural households.
- Increase government health financing to reduce the reliance on OOP payments: Increased public financing is especially needed through tax-based subsidies for the poor and vulnerable to enhance financial protection and reduce CHE.
- Strengthen policy implementation, regulation, and monitoring to enhance efficiency, accountability, and compliance on NHIA and SHIS: Improved data systems and governance mechanisms are crucial toward transparent and effective service delivery
- Increase public awareness and health insurance literacy in order to improve enrollment: Targeted communication campaigns, community engagement, and the overall ease of the enrollment process can enhance health insurance informed decision-making and uptake.
- Integrate health financing policies with broader social protection and poverty reduction policies to ensure comprehensive protection to vulnerable populations: There is a need to link insurance schemes with conditional cash transfers, free care programs, and social welfare measures which can go a long way in terms of reducing financial hardship and improving equity.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

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