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Prevalence of out-of-pocket health expenditure among artisans in Rivers State, Nigeria

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ABSTRACT

Background/Objectives: A significant barrier to accessing healthcare in Nigeria is the requirement for payment at the point of service. Out-of-pocket (OOP) payments, the primary method of healthcare financing, have created substantial challenges in obtaining medical care. This research explored the socio-economic status of artisans in relation to OOP payments and how these factors have impacted their ability to access healthcare services in Rivers State, Nigeria. ***Design/Methods:*** The study utilized a cross-sectional, household-based design to determine household OOP expenditures on healthcare within the community. Data were collected using structured, closed-ended, interviewer-administered questionnaires distributed to 598 eligible artisans or their representatives, selected through a multistage random sampling technique. The Pearson Chi-square test was applied to analyze the association between OOP payments and other categorical variables, while logistic regression was employed to assess the multivariate relationship of OOP payments. ***Results:*** Among the 598 artisans surveyed, nearly all participants (98.2%) paid directly for healthcare services, with only 1.8% utilizing health insurance, particularly through the National Health Insurance Scheme (NHIS). On average, households spent 6.22% of their income on healthcare. Lower-income groups spent disproportionately more on healthcare compared to wealthier groups and their expenditures were more likely to be catastrophic. ***Conclusion:*** The primary barrier to accessing healthcare was out-of-pocket payments, driven by the lack of social health insurance or other forms of healthcare coverage. Expanding the National Health Insurance Scheme and introducing a Community-Based Social Health Insurance Program is urgently needed to address the needs of those in the informal sector.

Keywords: *Artisans; Expenditure; Out-of-pocket, Prevalence; Nigeria*

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INTRODUCTION

Out-of-pocket (OOP) expenditure is a primary channel through which households in Nigeria and many other low- and middle-income countries finance healthcare services[1]. According to the World Health Organization (WHO), OOP payments refer to direct household expenses, including gratuities and payments in kind, made to healthcare providers, suppliers of pharmaceuticals, therapeutic appliances and other health-related goods and services aimed at improving individual or population health. These payments encompass household contributions to public services, non-profit organizations and NGOs. They also include non-reimbursable costs such as co-payments and fee-for-service, but exclude employer-sponsored medical benefits and payments for overseas treatment [2].

Out-of-pocket health expenditures have historically been disproportionately high in developing countries compared to developed nations. For instance, in 2018, private health expenditure in Nigeria accounted for 74.7% of total health expenditure, with 95.9% of this coming from OOP payments[3]. This indicates insufficient investment by both the government and private institutions in healthcare, leaving

individuals and artisans to bear the financial burden.

In Nigeria, OOP payments are one of five main healthcare financing mechanisms, alongside government funding (via taxes), health insurance (private and public), donor funding, and contributions from NGOs. There is however an over-reliance on OOP payments, particularly in low- and middle-income countries. While taxation can be equitable, healthcare payments are not, as both rich and poor pay the same for services in public and private facilities. The general government health expenditure (GGHE), which constitutes 25.3% of total health expenditure (THE), is funded partly through taxes paid by the poor. Despite their contributions, many poor individuals cannot afford healthcare costs, leading to financial hardship or impoverishment[4].

This financial strain forces many families to request premature discharge against medical advice, resulting in continued ill health, death or severe financial distress. The lack of adequate health financing contributes to low utilization of public health facilities, as individuals often face unexpected and unaffordable expenses at the point of care. Many Nigerians, especially those in low- and middle-income brackets, do not save for healthcare, either due to unawareness of available schemes or lack of access to them[5].

Health System Financing Components

Healthcare financing involves three interconnected elements:

1. Revenue Collection: Gathering funds from households, organizations and donors.
2. Pooling of Resources: Managing collected revenue to ensure the financial risk of healthcare is shared among contributors.
3. Purchasing Interventions: Allocating pooled funds to healthcare providers for specified services[6].

The objectives of healthcare financing are to ensure funds are available, promote cost-effective interventions, provide financial incentives to providers and guarantee universal access to effective healthcare services.

Challenges in Health Financing

Low- and middle-income countries, including Nigeria, face challenges in identifying sustainable healthcare financing sources and pooling resources for citizens' benefit. Failure to address these issues results in high OOP expenditures, limiting healthcare access.

Between 1999 and 2001, Nigerian households spent an average of 64.25% of their income on healthcare, which increased to 68.45% between 2002 and 2005. During the same period, public healthcare expenditure declined from 35.7% to 31.65%[1,5]. This heavy reliance on households disproportionately burdens poorer families, as there is no differentiation in healthcare costs between rich and poor households.

Rural areas, where the poorest populations reside, lack targeted healthcare schemes. Even free healthcare services, such as immunization or family planning, are equally accessible to both rich and poor, failing to address the disparity. Additionally, the National Health Insurance Scheme (NHIS) prioritizes economically stable individuals over those in urgent need, leaving poorer households at a disadvantage. Consequently, poorer families bear a disproportionately higher financial burden for healthcare compared to wealthier households.

METHODS

Study design: This study employed a cross-sectional design integrating quantitative methodologies to determine the prevalence of out-of-pocket expenditure among artisans in Rivers State, Nigeria.

Study setting: Rivers State is one of Nigerian's 36 states, has Port Harcourt as its capital and largest city. The state is an economic hub for Nigeria's oil and gas industries and it is bordered by the Atlantic Ocean to the south, Imo, Abia, and Anambra States to the north, Akwa Ibom to the east, and Bayelsa and Delta States to the west. It is home to diverse indigenous ethnic groups, including Ikwerre, Ibani, Opobo, Abua, Eleme, Okirika, Kalabari, Etche, Ogba, Ogoni, Engenni and others.

Study population: The study population includes artisans such as mechanics, tailors, carpenters, welders and hairdressers. Eligible participants were artisans aged 18 years and above, who resided in Rivers State and consented to participate. Artisans with severe medical conditions

requiring immediate attention or those unable to communicate effectively due to language barriers were excluded.

Sample size and sampling techniques: The sample size of 654 was determined using the Cochrane formula. Data collection relied on a structured data extraction form titled "Prevalence of Out-of-Pocket Expenditure among Artisans." Quantitative data were checked for errors, entered into a system and analyzed using SPSS. Descriptive statistics, including proportions and means were summarized and presented in frequency tables and cross-tabulations. The Chi-square test was used to assess statistically significant associations between variables, with Fisher's exact test applied, when appropriate. A p-value of less than 0.05 was set as the threshold for significance. Logistic regression identified predictors of willingness to enroll in health insurance, while regression analysis measured the dependent variable and influencing factors.

Quantitative data collection involved a multistage sampling process. Stratified sampling was used to select the three senatorial districts: Rivers West, Rivers East and Rivers South East. Simple random sampling was applied to choose two rural local government areas (LGAs) from each district, while purposive sampling identified urban and suburban LGAs, including Obio/Akpor, Port Harcourt, Eleme and Ahoada East. Participants were selected using purposive non-probability sampling.

For the qualitative component, ten interviews were conducted using purposive sampling. NVivo software (version 11.4.1) facilitated data storage, classification, transcription and thematic coding. This dual-method approach provided a comprehensive analysis of artisans' willingness to participate in social health insurance programs.

RESULTS

The analysis of the response rate and associated tables provides valuable insights into the study's methodology, participant demographics and key findings. The study achieved a robust response rate of 91.4%, with 598 participants out of a target of 756, demonstrating strong engagement and enhancing the reliability of the results.

The age distribution of participants, with the 30-34 age group comprising the largest proportion at 23.9%, followed closely by the 25-29 age group at 18.7%. Younger participants (15-24 years) made up 18.4%, while older participants (over 60) accounted for only 2.3%. This distribution suggests a focus on the working-age population, with potential implications for the applicability of findings to younger and older demographics.

Employment data reveals that 70.7% of artisans are self-employed, reflecting a preference for independence, likely due to limited opportunities in the formal job market. Good to note however that 14.9% and 14.4% of participants are employed in the public and private sectors, respectively, indicating some availability of formal employment avenues.

Correlation analysis shows a strong positive relationship between monthly income and wealth status ($r = 0.78$, $p < 0.001$). This finding aligns with expectations, as increased income often translates to improved financial stability and wealth, which could enable greater investment in health-related expenditures, including health insurance.

The majority (80.1%) reported visiting a health facility within the past month, with private facilities being the most utilized (53.4%), followed by public services (41.3%) and traditional medicine (5.3%). Notably, 90.6% of participants incurred OOP expenses. Among these, 53.3% spent between 20,000 and 40,000 Naira, 34.5% spent less than 10,000 Naira and 12.2% spent over 50,000 Naira.

The proportion of household income spent on health expenses is striking, with 59.2% of participants allocating 20-40% of their income and 22.7% spending over 50%. These findings highlight the financial burden of healthcare and the potential for catastrophic health expenditures among artisans.

The relationship between socio-demographic factors and OOP expenditures using Chi-square analysis was reported. Age was significantly associated with OOP expenditures ($\chi^2 = 15.324$, $df = 7$, $p = 0.032$), whereas gender was not ($\chi^2 = 2.187$, $p = 0.139$). This suggests that age influences OOP spending patterns, while gender does not appear to be a determining factor.

Among the 56 participants (9.4%), who did not incur OOP expenses, 53.6% relied on

traditional medicine as their primary healthcare source. This finding underscores a reliance on alternative medicine among this group.

The mean score for understanding increased to 2.55, when participants were asked if such programs could improve healthcare access for artisans. While 40.6% agreed and 16.7% strongly agreed, the data suggests limited comprehension of how these programs function, which may hinder effective advocacy and enrolment.

The analysis highlights critical issues, including the financial burden of OOP healthcare expenditures, the significant reliance on self-employment among artisans and gaps in knowledge about social health insurance programs. Addressing these challenges through targeted interventions, such as expanding awareness of health insurance and reducing reliance on OOP payments, could improve healthcare access and financial sustainability for artisans in Rivers State, Nigeria.

DISCUSSION

The socio-economic profile of artisans in Rivers State offers a compelling view of economic resilience amid significant challenges. The findings reveal critical insights into their occupational distribution, income levels, wealth status and healthcare expenditure patterns.

The dominance of self-employment among artisans (70.7%) reflects the informal nature of their work environment, with public (14.9%) and private (14.4%) sector employment representing smaller fractions. Tailoring (22.4%) and mechanics (20.6%) are the most common occupations, followed by carpentry (16.4%), masonry (14.5%) and plumbing (12.7%).

Income distribution is skewed toward lower brackets, with 33.6% earning between 20,000 and 29,999 Naira monthly and 26.1% earning between 10,000 and 19,999 Naira. Only 11% earn 40,000 Naira or more, underscoring the financial vulnerability of this group. Wealth distribution shows that most artisans fall into the "poor" (29.4%) and "middle" (33.1%) categories, with only a small fraction in the "rich" (16.4%) and "richest" (6.5%) categories.

Asset ownership further highlights economic constraints, as 70.6% do not own their homes, and only 34.9% own a car or major household items. Educational attainment is predominantly at the secondary level (55%), with 28% having post-secondary education, 15% primary education and 3% no formal education.

These findings align with studies in similar contexts, reported comparable rates of self-employment and income distribution among Nigeria's informal sector workers. The low homeownership rate corroborates findings on urban housing challenges in Lagos[6,7]

The study reveals an alarmingly high prevalence of out-of-pocket (OOP) healthcare expenditure, with 90.6% of participants incurring such costs. Among them, 53.3% spent 20,000-40,000 Naira monthly on healthcare, 34.5% spent less than 10,000 Naira, and 12.2% spent over 50,000 Naira.

Healthcare utilization is high, with 80.1% visiting a healthcare facility in the past month. Private facilities are the most utilized (53.4%), followed by public facilities (41.3%) and traditional medicine (5.3%). The frequency of visits indicates ongoing health concerns, with 65.1% visiting 1-2 times, 28.0% visiting 2-3 times, and 6.9% visiting 3-4 times within the past month.

Financially, the burden is significant, with 59.2% spending 20-40% of their household income on healthcare and 22.7% spending over 50%. These findings mirror those who reported 82.2% of households in South-Eastern Nigeria incurring OOP payments, who noted that OOP payments accounted for 71.7% of total health expenditure in Nigeria[8,9]

Chi-square analysis identifies significant associations between OOP expenditure and socio-demographic factors such as age (χ^2 = 15.324, p = 0.032), education level (χ^2 = 9.876, p = 0.020), residence (χ^2 = 6.543, p = 0.011), wealth status (χ^2 = 18.965, p = 0.001) and monthly income (χ^2 = 22.134, p < 0.001).

These associations align with findings from other LMICs. For example, reported shows similar high-income shares spent on healthcare in Ghana, while studies from India and Bangladesh found comparable correlations between

education, income and healthcare expenditure[10,11].

The results underscore the need for policy interventions to reduce OOP healthcare expenditure and promote health insurance uptake among artisans. Expanding access to affordable healthcare services, improving awareness of social health insurance and addressing broader socio-economic challenges such as low income and poor asset ownership could significantly improve the well-being of this population. In conclusion, the findings provide a robust foundation for targeted health and economic policies, emphasizing the need for systemic solutions to mitigate financial barriers to healthcare access for artisans in Rivers State, Nigeria.

CONCLUSION

The high prevalence of out-of-pocket health expenditure among artisans further supports the urgent need for healthcare financial protection mechanisms. Thus, many are at risk from financial catastrophe and impoverishment because of the significant spending out of household income on healthcare costs.

The socio-economic profile points out the artisanal vulnerability and the necessity of differential approaches about health insurance. The predominantly self-employed nature of this working class, concentrated in the lower middle-income brackets of the population, presents challenges, but also opens up opportunities in the design of appropriate insurance schemes.

Recommendations

Based on the findings, the following recommendations are proposed:

1. Strengthening health insurance uptake.
2. Increase awareness on health insurance.
3. Improve access to affordable healthcare.
4. Introduce income-based premiums.
5. Enhance social protection.
6. Promote occupational health education.
7. Strengthen Artisan Associations.

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IDI conceived of the study, initiated the design, participated in literature search and data collection, analysis and coordination. SAA and BCN participated in data collection, analysis and coordination. All authors reviewed and approved the final manuscript.

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