

ECONOMIC DETERMINANTS OF HEALTHCARE DEMAND IN CONFLICT AFFECTED YOBE STATE, NIGERIA

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ABSTRACT

Healthcare access in conflict-affected regions is affected by both economic hardship and insecurity, with huge implications for service utilization. This study examined the demographic characteristics, economic determinants, and financing models influencing healthcare demand in Yobe State, Nigeria. A cross-sectional field survey was conducted among 456 respondents selected through snowball sampling. Data were collected using structured questionnaires and analyzed using descriptive and inferential statistics with SPSS version 28. The results showed that poverty ($\beta = -0.926$, $p < 0.001$) and inflation ($\beta = -0.256$, $p = 0.002$) significantly reduced healthcare utilization, while higher monthly income increased the likelihood of seeking care ($\beta = 0.137$, $p = 0.009$). Income inequality, however, was not statistically significant ($p = 0.187$). Demographic analysis revealed disparities linked to household size, income distribution, and rural-urban location. Regarding financing models, community-based

Introduction

Conflict affected regions mostly suffer deteriorated socio-economic conditions that amplify barriers to healthcare access. In Nigeria, especially in vulnerable northern states, these conditions worsen the ability of households to demand and use health services. Research shows that wealth or income status is strongly and positively associated with healthcare utilization: households with higher wealth indices are more likely to seek care for children, while those in poorer quintiles are constrained by cost and resource limitations (Orji *et al.*, 2022). Similarly, in Nsukka Local Government Area, socio-economic determinants such as income, perceived cost,

health insurance (CBHI) was found to significantly improve utilization ($\beta = 0.431$, $p = 0.007$), whereas general health insurance showed a positive but non-significant effect ($\beta = 0.273$, $p = 0.066$). The findings identified that absolute poverty and inflation are primary barriers to healthcare access, while CBHI provides a more practical, inclusive financing pathway in conflict-affected contexts. The study concludes that sustainable healthcare in Yobe requires poverty alleviation programs, inflation control measures, expansion of CBHI, and rehabilitation of damaged health facilities to ensure equitable access in fragile settings.

and household wealth were found to significantly affect health service demand, with lower-income groups underutilizing formal services (Mobosi *et al.*, 2022). When households are severely impoverished, even small out-of-pocket payments become overwhelming, causing delays or total avoidance of seeking care. Inflation, especially for health-related goods and transportation, increases indirect costs, placing a heavier burden on poor households and further reducing their healthcare utilization (El-Khatib *et al.*, 2020).

Demographic variables also shape how healthcare is used. Household size, gender, rural or urban location, and the educational level of household heads affect decision-making and ability to access care. Larger households face greater strain on limited resources; rural dwellers often incur higher transport and opportunity costs to reach care than urban ones (Adeoye, 2015; Samuel & Okpe, 2024). Gender norms may influence whose health needs are prioritized or who controls financial resources, further skewing utilization patterns. Evidence from Awka, Anambra State indicates that socio-demographic factors hugely determine CBHI uptake, with poorer and less educated households being less likely to enroll (Iyalomhe *et al.*, 2021). Nationally, studies of CBHI and the National Health Insurance Scheme have shown that while such schemes have potential to improve access and equity, challenges in design, implementation, trust, awareness, and the capacity of users to pay premiums often limit their effectiveness (Odeyemi, 2014; Alawode & Adewole, 2021).

Given this context, three objectives are of interest in Yobe State: to analyze how demographic characteristics of households relate to healthcare utilization; to assess how economic determinants such as poverty, income, and inflation influence utilization; and to evaluate how financing models, especially CBHI, promote sustainable healthcare usage among vulnerable populations. Understanding these relationships in a conflict-affected setting like Yobe, where infrastructure destruction, displacement, and insecurity compound economic hardship, is essential for designing health system interventions that are both equitable and resilient.

METHODOLOGY

Research Design

The study adopts a field survey research design. This design is suitable as it investigates relationships among variables without manipulating them, enabling the researcher to draw inferences based on observed realities. The design allows for systematic data collection directly from respondents through a structured questionnaire. By employing this method, the study captures firsthand information on household demographics, economic conditions, and healthcare utilization patterns.

Study Area

Yobe State, created in 1991 from the former Borno State, lies in northeastern Nigeria with a population of about 3.4 million (National Population Commission, 2022). Predominantly inhabited by the Kanuri, Fulani, and Hausa, its economy is mainly subsistence agriculture, which has been undermined by drought, desert encroachment, and Boko Haram insurgency. As one of the most conflict-affected and impoverished states in Nigeria, Yobe has witnessed widespread violence, destruction of infrastructure, and displacement, with over 700 health facilities across the northeast, many in Yobe, damaged or non-functional. Consequently, the state suffers some of the poorest health indicators nationwide, including high maternal and child mortality, low immunization coverage, and weak access to essential services. Combined with poverty, unemployment, inflation, and limited insurance coverage, these conditions make Yobe a critical case for analyzing how economic and conflict dynamics shape healthcare demand and financing.

Methods of Data Collection and Analysis

Data were collected using a structured questionnaire, administered directly to respondents to ensure clarity and encourage engagement. Responses were retrieved and compiled systematically for analysis. The data analysis combined descriptive statistics, to summarize demographic characteristics, with inferential statistics to test the research hypotheses. The Statistical Package for Social Sciences (SPSS, version 28) was employed for analysis. Descriptive statistics (frequencies, percentages, means) were used to present demographic distributions, while regression analysis was applied to examine the relationships between economic determinants (poverty, income, inflation, and financing models) and healthcare utilization.

Population of the Study

The study population consisted of individuals and households accessing healthcare services in Yobe State. This included patients, caregivers, and community members who seek care from both public and private facilities. The population was considered

appropriate because these groups directly experience the challenges of healthcare access in a conflict-affected and economically constrained environment.

Sampling Technique

Given the context of insecurity and population displacement in Yobe, the study employed snowball sampling, a non probability technique effective for hard-to-reach populations. The process began with identifying initial respondents ("seeds") who met inclusion criteria, such as being residents who had sought healthcare within the last year. These respondents then referred others within their networks who met the same criteria. This referral process continued until the required sample size was achieved. Snowball sampling was selected because it encourages trust and participation among vulnerable groups, such as displaced households and rural residents.

Sample Size

The sample size was determined using Cochran's formula for sample size estimation (Barlett *et al.*, 2001):

$$n = \frac{z^2 \times p(1-p)}{e^2} = \frac{1.96^2 \times 0.5(1-0.5)}{0.05^2} = 384.16$$

Thus, the required sample size was approximately 384 respondents. However, the study increased this to 456 respondents to strengthen reliability and account for potential non-responses.

Research Instrument

A structured questionnaire served as the main research instrument, designed with closed-ended items on a four-point Likert scale: Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD). It comprised three major sections: demographic characteristics of respondents; economic determinants of healthcare demand, including poverty, income, and inflation; and financing models and healthcare utilization, focusing on community-based health insurance (CBHI), general health insurance, and out-of-pocket payments. This organization ensured that each research objective and hypothesis was systematically addressed.

Validity of Instrument

To ensure content validity, the questionnaire was reviewed by subject experts in public health and health economics. Feedback was used to refine the wording and alignment of items with the research objectives.

RESULTS

Table 1: Demographic Information of the Respondents

Variable	Category	Frequency	Frequency
Gender	Male	262	57.46
	Female	194	42.54
	Total	456	100.00
Monthly Income	Below 10,000	168	36.84
	10,000–50,000	53	11.62
	50,000–100,000	75	16.45
	Above 100,000	160	35.09
	Total	456	100.00
Household Size Range	1–3	107	23.46
	4–6	180	39.47
	7–10	128	28.07
	Above 10	41	8.99
	Total	456	100.00
Location	Urban	259	56.80
	Rural	197	43.20
	Total	456	100.00

Source: Field Survey, 2025

Table 4.1 shows a clear picture of the 456 respondents surveyed in Yobe State, Nigeria, capturing their gender, income, household size, and location to shed light on their healthcare experiences in a conflict-affected region. Of these respondents, 57.46% were male and 42.54% were female, a slight male tilt likely reflecting local norms where men often lead in income generation and decision-making in places like Yobe. Income levels show stark divides: 36.84% earn below ₦10,000 monthly, struggling with basic needs, while 35.09% earn above ₦100,000, indicating some financial stability; 16.45% fall between ₦50,000 to ₦100,000, and just 11.62% earn ₦10,000 to ₦50,000, the smallest group. Most respondents (39.47%) live in households of 4 to 6 members, with 28.07% in larger households of 7 to 10 members, 23.46% in smaller ones of 1 to 3 members, and only 8.99% in households exceeding 10 members, reflecting Nigeria's common medium-sized, extended-family households that shape resource and healthcare decisions. Location-wise, 56.80% reside in urban areas with better access to jobs and healthcare, while 43.20% live in rural communities, ensuring the study captures both urban and rural challenges in a conflict zone. These demographics highlight the economic and social

complexities of Yobe State, helping us understand how people navigate healthcare demand and how systems can better support them in such a challenging environment.

Table 2: Impact Economic Determinants on Healthcare Utilization

Table 2 shows the results of regression analysis economic factors influencing healthcare utilization, highlighting poverty and inflation as significant barriers while income increases demand for services in Yobe State.

Variable	Coefficient	Std. Error	z	p-value	95% CI (Lower)	95% CI (Upper)
Constant	0.842	0.201	4.19	<0.001	0.448	1.236
Poverty Status (Composite Score)	-0.926	0.187	-4.95	<0.001	-1.293	-0.559
Monthly Income	0.137	0.052	2.63	0.009	0.035	0.239
Perceived Inflation Impact (1-5)	-0.256	0.084	-3.05	0.002	-0.421	-0.091
Income Inequality (Gini Coefficient)	-0.148	0.112	-1.32	0.187	-0.367	0.071

The results presented in Table 2 indicate that both poverty and inflation exert a high negative influence on healthcare utilization in Yobe State. Households with higher poverty scores were substantially less likely to seek medical care ($\beta = -0.926$, $p < 0.001$), confirming that financial deprivation is a major barrier to access. Likewise, when respondents perceived inflation as severe, the demand for services declined ($\beta = -0.256$, $p = 0.002$). In contrast, monthly income displayed a statistically significant positive effect ($\beta = 0.137$, $p = 0.009$), showing that increases in household earnings improved the likelihood of seeking care. By comparison, income inequality was not statistically significant ($p = 0.187$), suggesting that the overall level of poverty exerts greater pressure on healthcare demand than relative income distribution. Collectively, these findings reinforce the conclusion that economic conditions, especially poverty and inflation, have a decisive effect on healthcare utilization patterns.

Table 3: The Effectiveness of Existing Healthcare Financing Models

Table 3 shows the results of an evaluation of sustainable healthcare financing options, focusing on participation in community-based health insurance (CBHI), general health insurance, and poverty level, on the likelihood of healthcare utilization.

Variable	Coefficient (β)	Std. Error	z	p-value	95% CI (Lower)	95% CI (Upper)
Constant	0.519	0.193	2.69	0.007	0.141	0.897
CBHI Participant (1 = Yes)	0.431	0.161	2.68	0.007	0.116	0.746
Health Insurance (1 = Yes)	0.273	0.148	1.84	0.066	-0.017	0.563
Poverty Score	-0.308	0.097	-3.17	0.002	-0.498	-0.118

The findings in Table 3 demonstrate that community based health insurance (CBHI) has a positive effect on healthcare utilization in conflict affected Yobe State ($\beta = 0.431$, $p = 0.007$). Although general health insurance also showed a positive association with service use ($\beta = 0.273$), this relationship did not reach statistical significance ($p = 0.066$). Poverty score, on the other hand, remained a significant negative predictor of utilization ($\beta = -0.308$, $p = 0.002$), indicating that households with lower income levels continue to face considerable challenges in accessing care. Taken together, these results suggest that CBHI provides a more practical and inclusive financing mechanism, especially in settings where economic constraints are pervasive. Broader health insurance schemes may offer some benefit, but their current coverage appears inadequate. On this basis, the null hypothesis is rejected, confirming that sustainable financing strategies, most notably CBHI, play a decisive role in enhancing healthcare utilization.

Table 4: Regression results on economic determinants of healthcare utilization.

Variable	Coefficient (β)	Std. Error	Z	p-value	95% CI
Poverty Status	-0.926	0.187	-4.95	<0.001	-1.293 – -0.559
Monthly Income	0.137	0.052	2.63	0.009	0.035 – 0.239
Perceived Inflation	-0.256	0.084	-3.05	0.002	-0.421 – -0.091

The regression analysis shows that poverty and inflation significantly reduce the likelihood of healthcare utilization, while higher income increases it. Conflict-related disruptions such as facility destruction and insecurity further exacerbate these effects.

DISCUSSION

This study examined how demographic characteristics, economic determinants, and financing models influence healthcare utilization in conflict affected Yobe State. The findings pinpoint important perspectives into how conflict and poverty jointly dictate demand for health services.

The demographic results revealed that the majority of respondents were male, lived in medium sized households, and resided mostly in urban areas, while income distribution showed a strong divide between the poorest and relatively well-off households. These demographic profiles mirror those observed in previous Nigerian studies, where household size, gender, and location significantly influenced healthcare-seeking behavior (Adeoye, 2015; Samuel & Okpe, 2024). Larger households most especially mostotly struggle to allocate resources for healthcare, increasing the likelihood of delayed or forgone care. This means that demographic pressures, especially household size and

rural residence, may worsen vulnerability to health shocks in conflict areas, showing the importance of taking healthcare directly to rural areas and supporting households with tailored interventions.

The results on economic determinants showed that poverty ($\beta = -0.926$, $p < 0.001$) and inflation ($\beta = -0.256$, $p = 0.002$) greatly reduced healthcare utilization, while income had a positive effect ($\beta = 0.137$, $p = 0.009$). These findings are similar with the work of Orji *et al.* (2022), who observed that household wealth is strongly correlated with child healthcare utilization in Nigeria, and El-Khatib *et al.* (2020), who reported that inflation increases indirect health costs, thereby discouraging care-seeking. The implication is that economic barriers, especially absolute poverty, are decisive determinants of access to healthcare in fragile states like Yobe, where insecurity further reduces earning opportunities. Policy interventions must therefore prioritize poverty alleviation, subsidies for essential health commodities, and inflation control measures.

With respect to financing models, community based health insurance (CBHI) considerably increased the likelihood of healthcare utilization ($\beta = 0.431$, $p = 0.007$), while general health insurance, although positive, was not statistically significant ($p = 0.066$). Similar findings were reported by Iyalomhe *et al.* (2021), who demonstrated in their study that socio demographic factors affect CBHI uptake, and Odeyemi (2014), who noted challenges in scaling up formal health insurance schemes in Nigeria. The negative association of poverty score with utilization, even in the presence of insurance, confirms that without subsidies or government support, the poorest remain excluded. The implication is that CBHI offers a promising, community-driven financing approach, but broader integration with government funding is required to ensure equity and sustainability.

CONCLUSION

This study demonstrates that healthcare demand in Yobe State is strongly influenced by household demographics, poverty, income, inflation, and financing models, within the broader context of conflict. Poverty and inflation remain major barriers, income improves utilization, and CBHI emerges as a viable though underutilized financing mechanism. The findings also identified that economic deprivation and fragile security conditions reinforce each other in constraining healthcare access.

RECOMMENDATIONS

- i. **Poverty Alleviation and Subsidies:** The government and development partners should roll out poverty reduction programs and provide subsidized healthcare services to low-income families, making it easier for them to afford treatment.

- ii. **Curbing Inflation:** Policies should focus on keeping the prices of essential medicines and transportation under control, especially in conflict-affected areas, so that hidden costs do not stop people from seeking care.
- iii. **Expanding CBHI:** Community based health insurance (CBHI) should be strengthened through government support and awareness campaigns, encouraging more people, especially those in rural areas and low income groups, to enroll.
- iv. **Rebuilding Facilities:** Efforts should be made to repair and secure health facilities that were damaged during conflict, ensuring that communities once again have safe and reliable places to seek care.
- v. **Reaching Rural Families:** Health programs should pay special attention to rural communities and larger households, who often face the toughest challenges with poverty and insecurity, by bringing services closer to them.

REFERENCES

- Adeoye, A. O. (2015). Socio-economic determinants of healthcare utilization among rural households in Nigeria. *Journal of Economics and Sustainable Development*, 6(18), 155–163.
- Alawode, O. A., & Adewole, D. A. (2021). Assessment of the design and implementation challenges of the National Health Insurance Scheme in Nigeria: A qualitative study among sub-national level actors, healthcare and insurance providers. *BMC Public Health*, 21(1), 124. <https://doi.org/10.1186/s12889-020-10133-5>
- Barlett, J. E., Kotrlik, J. W., & Higgins, C. C. (2001). Organizational research: Determining appropriate sample size in survey research. *Information Technology, Learning, and Performance Journal*, 19(1), 43–50.
- El-Khatib, Z., Odusina, E. K., Ghose, B., & Yaya, S. (2020). Patterns and predictors of insufficient antenatal care utilization in Nigeria over a decade: A pooled data analysis using Demographic and Health Surveys. *International Journal of Environmental Research and Public Health*, 17(21), 8261. <https://doi.org/10.3390/ijerph17218261>
- Iyalomhe, F. O., Adekola, P. O., & Cirella, G. T. (2021). Community-based health financing: Empirical evaluation of the socio-demographic factors determining its uptake in Awka, Anambra State, Nigeria. *International Journal for Equity in Health*, 20(1), Article 241. <https://doi.org/10.1186/s12939-021-01574-4>
- Mobosi, I. A., Okonta, P. O., & Ameh, C. A. (2022). Socio-economic determinants of demand for healthcare utilization in Nsukka Local Government Area of Enugu State, Nigeria. *African Social Science and Humanities Journal*, 3(3), 22–35. <https://doi.org/10.57040/asshj.v3i3.185> journals.jozacpublishers.com
- National Population Commission. (2022). *Population and housing census of the Federal Republic of Nigeria: 2022 report*. Abuja: National Population Commission. <https://nationalpopulation.gov.ng/publications>
- Odeyemi, I. A. O. (2014). Community-based health insurance programmes and the National Health Insurance Scheme of Nigeria: Challenges to uptake and integration. *International Journal for Equity in Health*, 13(20), 1–8. <https://doi.org/10.1186/1475-9276-13-20>

Orji, A., Obochi, C. O., Ogbuabor, J. E., Anthony-Orji, O. I., & Okoro, C. A. (2024). Analysis of household wealth and child health care utilization in Nigeria. *Journal of the Knowledge Economy*, 15(1), 547–562. <https://doi.org/10.1007/s13132-022-01056-0>

Samuel, A. O., & Okpe, O. J. (2024). Demographic and socio-economic correlates of healthcare utilization in Nigeria. *African Journal of Social Sciences and Humanities*, 5(2), 44–59.