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# Knowledge, accessibility and uptake of national health insurance authority and the negative economic effects of non-users in a rural community in South Western

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## Abstract

**Background:** The National Health Insurance Authority (NHIA) was established to reduce out-of-pocket (OOP) spending and improve healthcare access in Nigeria. Despite its potential, access to the scheme remains limited, especially in semi-urban communities like Ido-Ekiti, Ekiti State, leading to potential economic burdens. This study assessed the economic effects of inaccessibility to the NHIA among residents of Ido-Ekiti, Ekiti State.
**Materials/Methods:** A descriptive cross-sectional study was conducted among 415 residents aged 18 years and above in Ido-Ekiti. Participants were selected using a multistage sampling method with probability proportionate to size (PPS). Data were collected over eight weeks using self-administered questionnaires and analyzed using IBM SPSS version 25.
**Results:** Out of 415 respondents, 30.9% were aged 35–44 years. While 64.7% were aware of health insurance, 61.8% had poor knowledge of it. Only 17.4% were enrolled in NHIA. A significant proportion (52.0%) reported economic challenges linked to healthcare inaccessibility, including delayed care and borrowing money for medical bills. Most respondents attributed these challenges to OOP health expenditures due to non-enrollment.
**Conclusion:** Despite relatively high awareness, poor knowledge and limited access to NHIA persist, contributing to economic hardship among residents. Strengthening awareness, improving service quality, and establishing trust-building mechanisms are essential for expanding NHIA uptake.

Keywords: Health insurance, NHIA, out-of-pocket payments, economic burden, healthcare access, Ido-Ekiti

## Introduction

The World Health Organization defines access to health as having universal health coverage, which entails that everyone may get the necessary medical care when and when they need it, with no financial burden. A comprehensive improvement in well-being and quality of life should be the ultimate objective, which should encompass the complete spectrum of vital health services, from health promotion to prevention, treatment, rehabilitation, and palliative care[1]. A country needs policymakers who are dedicated to funding universal health coverage, trained healthcare

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professionals delivering high-quality, patient-centred care in a health system built on a solid, patient-centred primary healthcare foundation established in the communities they serve[1].

This definition encompasses two major pillars of healthcare access: financial access and the quality of the services accessed. The emphasis on quality of care is very germane because it determines the capacity of the service to deliver "health" to the users.

In comparison to wealthier and more developed nations, the cost of receiving and accessing quality healthcare in developing nations is comparatively higher. People who must travel a great distance for treatment frequently pay fees or other expenditures for health services, and they also incur substantial transportation costs; these costs may include both medical and non-medical expenses. In contrast to non-medical expenditure, which includes other costs that could arise when receiving health services, such as transportation fees and lost opportunity costs from being unproductive, medical expenditure refers to payments made directly to healthcare facilities. Significant amounts spent on healthcare could put individuals and/or their families in financial ruin and poverty. On the other hand, untreated disease may potentially cause individuals to fall into poverty because they would be less productive[2].

When meeting the requirements of the poorer segments of the population, domestic financial resources are unevenly divided, which makes it difficult to secure funds from donors or to set up loans from other sources. The cost of accessing healthcare services is high, there are disparities in the quality of care provided, there is a lack of service-minded healthcare professionals, inefficient financial management, a lack of transparency, little accountability in the financing system, and there is a lack of scientific evidence for prioritizing policy decisions in developing countries[3].

Health insurance is a form of social security that ensures that people will receive the necessary medical care in exchange for recurring payments of a certain amount. It is intended to cover the costs of healthcare by paying the bills and protecting consumers from exorbitant healthcare expenditures by requiring payment before becoming ill. Thus, the program shields people from experiencing financial hardship as a result of high or unexpected medical costs. It saves money in the short run and protects the poor from medical conditions that can lead to greater loss of money in the long run. It involves the pooling of resources from persons to different illness risk profiles and the cost of the risk of illness among those who are ill and those who are healthy, are shared. It has three main characteristics, resource polling and cost-burden sharing. Pre-payment under the scheme is fixed either as a proportion of the payroll or as a flat rate contributed by the participant. This means that payment is not proportional to the risk of illness of individual beneficiaries[4].

The National Health Insurance Scheme (NHIS) is a social Health insurance scheme employed in Nigeria under Act 35 of the 1999 constitution by the federal government of Nigeria to improve health of all Nigeria at an affordable Cost. The NHIS is a social health insurance programme designed by the Federal Government of Nigeria to complement sources of financing the health sector and to improve access to health care for the majority of Nigerians[7].

The scheme took off in the formal sector in 2005. Until its commencement, the cash-and-carry system was the only available option. With the many shortcomings of the pay-as-go system, the Millennium Development Goals (MDGs) health-related goals were at risk of failure. NHIS was then created to bridge the healthcare financing gap that existed in the country.

To promote universal coverage and equity, national governments adopted the National Health Insurance Scheme (NHIS). Many African countries, including Nigeria, decided to implement the National Health Insurance Scheme (NHIS) to complement funding for the health sector, to improve equity in health[7,14].

Since the renascence of the NHIA in the country, records have shown that only 6 million Nigerians have so far enjoyed the scheme[4,5]. On these accounts, the majority of the enrollees were in the public sector utilizing the scheme with most of them located in the federal civil service[4]. Also, diverse aspects of the NHIA have equally been studied, ranging from people's level of awareness of the scheme, actual enrollment rate into it, and satisfaction with the scheme, to its effect on healthcare services utilization in the country[6].

While some states experienced a high level of awareness of the scheme where it is currently being run[7,8], some of them recorded low-level knowledge of the scheme[9,10,11]. There is no doubt however; that the scheme has had some multi-faceted effects on the entire healthcare system and the people's health-

seeking behaviour in the states where it is practised.
Despite the fact that some state governments have keyed into the scheme, access to quality healthcare delivery still remains a high-profile challenge. It has been noted that there is a discrepancy among employees in their access to the NHIA. This was noted with federal civil servants having more access to the scheme than their counterparts do in the state civil service[10].
In its mission statement, the NHIA states that every Nigerian is entitled to healthcare- yet only about <10% of Nigeria's population receive adequate care. Given the resonating poverty situation in Nigeria, healthcare spending on some debilitating illnesses can be catastrophic. The utilization of the National health insurance service is a function of some predisposing factors among which include awareness of NHIA activities. In rural areas like Ido-Ekiti, Ekiti state, the accessibility and economic constraints of the residents here show how inaccessible the scheme is in such a low-resource environment. Carrying out this study will enable us to get baseline data for rural communities like Ido-Ekiti, Ekiti State. This data can then be used for the formation of new policies by the government, which will in turn improve awareness and accessibility of NHIA to this community. The study assessed the levels of awareness and knowledge of Health Insurance among respondents, it also assessed the economic effects of inaccessibility of the national health insurance authority, furthermore, it assessed the level of accessibility to Health Insurance among respondents and finally, it assessed the willingness to access health insurance among residents in Ido-Ekiti, Ekiti state.

## Methodology

### Study Area

The study was carried out in Ido-Ekiti in the Ido-Osi local government area of Ekiti state, which has 17 local government areas. The local government area has a total land area of 228.1 square kilometres and a projected population as of 2022 of 239,600 compared to the 160,001 obtained in the 2006 national census carried out by the National Population Commission.
Ido-Ekiti is majorly dominated by the Yorubas and has 10 settlements. It is bordered by Orin-Ekiti, Usi-Ekiti, Ilogbo-Ekiti, Ora-Ekiti, and Igbole-Ekiti. Despite being a rural area, the town has a Federal Teaching Hospital, three primary health care centres, probability proportionate to size (PPS) approach was used to select the participants in this study.

### Method of Data Collection

For data collection, the instrument that was used was a validated and semi-structured questionnaire. It was designed by reviewing past literatures on the subject matter, and administered by the researchers. The questionnaire was written in English language and interpreted to those participants who do not understand English language. The study instrument was divided into the following parts: Socio-demographic characteristics of the respondents, knowledge of health insurance, accessibility to NHIA, economic effects of health expenditure and willingness to take up health insurance. Community advocacy was done prior to data collection; community members were assured of the safety of the research. Data collection was done within a period of 8 weeks. Data was collected, checked for errors and entered manually into the computer for statistical analysis
The face and content validity were ascertained by experts in the Department of Public Health, ABUAD, and reliability was achieved using Kappa agreement for test-retest (Coefficient 0.7-1). To ensure consistency, the questionnaire was designed and printed in the English language, which is the official language of instruction in Nigerian academic institutions

### Data Analysis

The data obtained was sorted out, checked for errors, edited and manually recorded. IBM SPSS Statistics version 27.0 was used. Descriptive statistics of the data were presented in frequencies, percentages, means and standard deviation, using bar charts and tables. The inferential procedure involved the use of Pearson's Chi-square and logistic regression. While the Pearson's Chi-square was used to check if there is an association between variables and to ascertain whether the association is significant. Statistical significance was taken at 0.05 level.

### Ethical Approval

By the principles governing research involving participants, the researchers undertook the following steps to uphold respondents' ethical rights. Participants were offered adequate explanation about the study and the participation in the study was

and one private clinic. Other essential amenities available in the town include 15 public/private primary and secondary schools along with several banks, churches and mosques. The town has a land area of 2.18 square kilometres and a population of about 37,891 as at 2015.[12] The dominant occupations of residents of Ido-Ekiti include; farming, trading, and civil service jobs. Non-consenting adults were excluded from this study.

**Study Design**

A community-based cross-sectional survey was used in this study.

**Target Population**

The participants in the study comprised residents of Ido-Ekiti above 18 years old. The study was a cross-sectional survey of everyone eligible to enroll for NHIA in Ido-Ekiti, Southwestern, Nigeria.

Inclusion criteria: Residents in Ido Ekiti greater than 18 years, Patients in Federal Teaching Hospital Ido Ekiti who are willing to take part in the study, residents who have paid out of pocket for health care services.

Exclusion criteria: Participants younger than 18 years and non-residents of Ido-Ekiti.

**Sample Size Determination with Formular**

The sample size for this study was calculated using Fischer's formula for population.

$n = Z^2pq/d^2$

Where, n = desired sample size

z = standard normal deviate, 1.96

p = prevalence of knowledge about NHIA gotten from a previous study done in Enugu East LGA, Nigeria (56.8%)[13] = 0.568

q = 1 – p (1 – 0.568 = 0.432)

d = degree of accuracy desired = 0.05

$n = (1.96)^2 \times (0.568 \times 0.432) / (0.05)^2$

n= 377.05

n= 377(sample size)

Non response sample size was calculated as 10% of total sample size = 38

Sample size + Non response = 377 + 38 = 415

The final sample size is 415.

**Sampling Technique**

A multistage sampling technique using the voluntary and both verbal and documented consent was obtained before the questionnaire administration was done. Those who were unwilling to participate were excluded from the study. The confidentiality of their anonymity was fully guaranteed as no names were recorded. The purpose and benefits of the research were explained to the respondents before the questionnaires were administered. Ethical approval to conduct the study was sought and obtained from the Federal Teaching Hospital, Ido (FETHI) Ethical Committee before the respondents were approached. Protocol number is ERC/2023/08/29/1021B)

**Results**

Table 1: Socio-demographic Characteristics of Respondents

| Variable | Frequency N = 414 | Percentage (%) |
|---|---|---|
| **Age Group (in years)** | | |
| < 25 | 31 | 7.5 |
| 25 – 34 | 107 | 33.3 |
| 35 – 44 | 128 | 30.9 |
| 45 – 54 | 50 | 12.1 |
| 55 – 64 | 40 | 9.7 |
| ≥ 65 | 58 | 14.0 |
| *Mean age ± SD* | *43.2 ± 15.6* | |
| *Range* | *18 – 79* | |
| **Gender** | | |
| Male | 171 | 41.3 |
| Female | 243 | 58.7 |
| **Level of Education** | | |
| No Formal Education | 8 | 1.9 |
| Primary | 17 | 4.1 |
| Secondary | 197 | 47.6 |
| Tertiary | 192 | 46.4 |
| **Marital Status** | | |
| Single | 68 | 16.4 |
| Married | 295 | 71.3 |
| Divorced/ Separated | 33 | 8.0 |
| Widowed | 18 | 4.3 |
| **Family type (n = 295)** | | |
| Monogamy | 213 | 72.2 |
| Polygamy | 82 | 27.8 |
| **Family size** | | |
| ≤5 | 154 | 37.2 |
| >5 | 260 | 62.8 |
| **Religion** | | |
| Christianity | 367 | 88.6 |
| Islam | 34 | 8.2 |
| Traditional | 13 | 3.1 |
| **Tribe** | | |
| Yoruba | 368 | 88.9 |
| Igbo | 21 | 5.1 |
| Hausa | 16 | 3.9 |
| Others | 9 | 2.2 |
| **Occupation** | | |
| Trader | 73 | 17.6 |
| Farmer | 45 | 10.9 |
| Artisan/ Technician | 72 | 17.4 |
| Civil Servant | 127 | 30.7 |
| Professional | 76 | 18.4 |
| Unemployed/ Student | 21 | 5.1 |
| **Income (Naira)** | | |
| < 30,000 | 228 | 55.1 |
| ≥ 30,000 | 186 | 44.9 |

From table 1, majority 243(58.7%) of the respondents were females while 171(41.3%) were males. Most 128 (30.9%) of them were between 35-44 years, 107 (33.3%) were between 25-34 years, 58 (14%) of them were >65 years, 50 (12.1%) were between 45-54 years, 40 (9.7%) were between 55-64 years and 31(7.5%) were between 18-25 years.

The majority 295(71.3%) of the respondents were married, 68 (16.4%) were single, 33(8%) were divorced, 18(4.3%) were widowed.

Majority 367(88.6%) of the respondents were Christians, 34(8.2%) were Muslims and 13(3.1%) practised traditional religion. Majority 368(88.9%) of the respondents were of Yoruba ethnicity, 21(5.1%) were Igbo, 16(3.9%) were Hausa, 9(2.2%) of the respondents were of other ethnic groups. As regards family type, the majority 213(72.2%) of the respondents were monogamous, and 82(27.8%) were polygamous. The majority 260(62.8%) of the respondents had a family size of >5 members, and 154(37.2%) of the respondents had a family size of <5 members.

As regards the respondent's educational status, 197(47.6%) of the respondents have their secondary education, 195(47.1%) have their tertiary education, 17(4.1%) have primary education and 5(1.2%) have no formal education. As regards to occupation majority 127(30.7%) of the respondents were civil servants, 76(18.4%) were professionals, 73(17.6%) were traders, 72(17.4%) were Artisans, 45(10.9%) were farmers and 21(5.1%) were unemployed students.

As regards income, the majority 228(55.1%) of the respondents had an income of <30,000 naira and 186(44.9%) had an income of >30,000 naira.

From Tables 2a and 2b, a majority of the respondents 268(64.7%) are aware of health insurance, while 146(35.8%) respondents are unaware of health insurance. 84% got awareness about health insurance from a healthcare practitioner/health facility, 65.7% from radio, 61.9% from friends, 57.1% from the internet and social media, 54.1% from insurance companies/HMOs, 51.5%from books and medical journals, 51.1% from television, with the least being 44.8% from the newspaper. A larger percentage of respondents 265 (64%) have heard of NHIA, as opposed to 149 (36%) respondents who have not heard of NHIA. With respect to the understanding of NHIA, the majority (53.9%) agree that NHIA provides financial risk protection, and helps better access to healthcare (45.7%) while the least population (29.2%) agree that health insurance has benefits above paying out of pocket when sick. In regards to the benefit of health insurance above out-

Table 2a: Respondents' Awareness and Knowledge of NHIA

| Variable | Frequency N = 414 | Percentage (%) |
|---|---|---|
| **Awareness about Health Insurance** | | |
| Yes | 268 | 64.7 |
| No | 146 | 35.8 |
| **Source of Awareness about Health Insurance (n=268)** | | |
| Healthcare Practitioner/ Health Facility | 225 | 84.0 |
| Friends | 166 | 61.9 |
| Insurance Companies/HMOs | 145 | 54.1 |
| Radio | 176 | 65.7 |
| Television | 137 | 51.1 |
| Internet and social media | 153 | 57.1 |
| Newspaper | 120 | 44.8 |
| Books & medical journals | 138 | 51.5 |
| **Ever heard of NHIA** | | |
| Yes | 265 | 64.0 |
| No | 149 | 36.0 |
| **What you know about NHIA** | | |
| It is a system of paying a certain amount of money yearly to enjoy free healthcare services during the period | 130 | 31.4 |
| It helps better access to healthcare | 189 | 45.7 |
| It provides financial risk protection | 223 | 53.9 |
| It helps improve the quality of healthcare services being provided | 134 | 32.4 |
| It helps provide healthcare service for all irrespective of status | 137 | 33.1 |
| Do you believe health insurance has benefits above paying out-of-pocket when sick | 121 | 29.2 |
| **Believe health insurance has benefits above paying out-of-pocket when sick** | | |
| Yes | 121 | 29.2 |
| No | 112 | 27.1 |
| Don't know | 181 | 43.7 |
| **Only those who fall sick should consider enrolment in Health Insurance** | | |
| Yes | 16 | 3.9 |
| No | 217 | 52.4 |
| Don't know | 181 | 43.7 |

Table 2b: Respondents' Awareness and Knowledge of NHIA (continued)

| Variable | Frequency N = 414 | Percentage (%) |
|---|---|---|
| **Only the very poor who cannot afford to pay for healthcare need to join the schemes** | | |
| Yes | 20 | 4.8 |
| No | 215 | 51.9 |
| Don't know | 179 | 43.2 |
| **Under the Health Insurance program, you pay money (premiums) in order for the scheme to finance your future healthcare needs** | | |
| Yes | 115 | 27.8 |
| No | 123 | 29.7 |
| Don't know | 176 | 42.5 |
| **Health Insurance programs are like savings schemes; you will receive interest and get your money back** | | |
| Yes | 111 | 26.8 |
| No | 126 | 30.4 |
| Don't know | 177 | 42.8 |
| **If you do not make claims through a health insurance scheme, your premium will be returned** | | |
| Yes | 139 | 33.6 |
| No | 110 | 26.6 |
| Don't know | 165 | 39.9 |

of-pocket payment when sick, a larger population 181 (43.7%) of the respondents have no knowledge. Most respondents disagree that only sick 217(52.4%) and poor individuals 215 (51.9%) should consider enrolment into health insurance. Most of the respondents 176 (42.5%) have no knowledge as to whether under the health insurance program, money is paid to finance future health needs. The majority of the respondents have no knowledge as to whether health insurance programs are like saving schemes where interest will be received and money returned 177 (42.8%); or if claims are not made through a health insurance scheme, the premium will be returned 165 (39.9).

Table 3: Assessment of Respondents level of knowledge of health insurance

| Variable | Frequency N = 414 | Percentage (%) |
|---|---|---|
| **Knowledge of Health Insurance** | | |
| Good (6 – 12) | 158 | 38.2 |
| Poor (0 – 5) | 256 | 61.8 |

Table 4: Accessibility of NHIA

| Variable | Frequency N = 414 | Percentage (%) |
|---|---|---|
| **Currently a member of a NHIA (Accessibility)** | | |
| Yes | 72 | 17.4 |
| No | 342 | 82.6 |
| **Have you visited the contractual health facility for the Illness felt in the last 6 months (n= 72)** | | |
| Yes | 32 | 44.4 |
| No | 40 | 55.6 |
| **Are you satisfied with the services given (n = 32)** | | |
| Yes | 15 | 46.9 |
| No | 17 | 53.1 |
| **How much time you and your family wait to get the services (n = 32)** | | |
| Less than 30 minutes | 3 | 9.4 |
| 30 to 60 minutes | 10 | 31.3 |
| 1 to 3 hours | 13 | 40.6 |
| 3 to 6 hours | 1 | 3.1 |
| 6 hours and more | 2 | 6.3 |
| More than a day | 3 | 9.4 |
| **What the availability of drugs/ supplies looks like** | | |
| Not available | 7 | 21.9 |
| Rarely available | 2 | 6.3 |
| Usually available | 13 | 40.6 |
| Always available | 10 | 31.3 |
| **The major reason you did not visit a health facility (n = 40)** | | |
| Did not feel it was necessary | 9 | 22.5 |
| Facility too far | 13 | 32.5 |
| Lack of money for transportation | 4 | 10.0 |
| Did not feel that I would get quality care | 4 | 10.0 |
| Others | 10 | 25.0 |
| **When your current membership expires, would you renew your health insurance membership for the following year (n = 72)** | | |
| Yes | 65 | 90.3 |
| No | 7 | 9.7 |
| **If NO, why do you plan not to renew your Health Insurance membership (n = 72)*** | | |
| Illness and injury do not occur frequently in our HH | 5 | 71.4 |
| The registration fee and premiums are not affordable | 5 | 71.4 |
| There is limited availability and poor quality of health services | 2 | 28.6 |
| The quality of service | 5 | 71.4 |

**Multiple responses*

Table 3 shows the assessment of knowledge of health insurance. It shows that 256 respondents which account for 61.8% have poor knowledge of health insurance.

Table 4 shows that the majority of respondents 342 (82.6%) are currently not members of NHIA while 72 (17.4%) are not members. The majority of respondents 40 (55.6 %) have not visited a contractual health facility for the illness felt in the last 6 months while about 32(44.4%) have visited a contractual health facility for the illness in the last 6 months. The majority of respondents 17(53.1%) were not satisfied with the services provided by the NHIA, with about 15 (46.9%) respondents expressing satisfaction with the services provided by NHIA. The majority of respondents 13(40.6%) had to wait for about 1 to 3 hours before receiving services from the NHIA whereas 10 (31.3%) had to wait for 30 to minutes) 3 (9.4%) had to wait for less than 30 minutes 3 (9.4%) had to wait for more than a day) 2(6.3%) had to wait for about 6 hours and more) 1(3.1%) had to wait for about 3 to 6 hours. The majority of respondents 13 (40.6%) expressed that the availability of drugs required was usually available, whereas 10 (31. 3 %) expressed that the drugs required were always available, 7(21.9 %) expressed those drugs required were not available, 2 (6.3%) expressed that the drugs required were rarely available. The majority of respondents 13(32.5%) did not visit the health facility due to it being too far, 10 (25.0%) had other reasons,9(22.5%) did not feel it necessary to visit the health facility, 4 (10.0%) did not visit the health facility due to lack of money for transportation, 4(10.0%) did not visit the health facility because they did not feel they would get quality care. A significant proportion of respondents 65 (90.3%) questioned, expressed their interest in renewing their membership after the current one expires, whereas 7(9.7%) had no interest in renewing their membership. For the respondents that showed no interest in renewing their membership, the majority of respondents 5(71.4%) expressed that illness and injury do not occur frequently in their household also, that the registration fee and premium are not affordable, 2(28.6%) expressed that there is limited availability and poor quality of health services.

Based on the findings in table 5, it is evident that a significant portion of the respondents (51.2%) have not experienced any household member falling ill in

Table 4: Economic effects of health expenditure

| Variable | Frequency N = 416 | Percentage (%) |
|---|---|---|
| **Any member of your household has been ill in the last 6 months.** | | |
| Yes | 202 | 48.8 |
| No | 212 | 51.2 |
| **If yes, has this illness had any effect on you economically (n = 202)** | | |
| Yes | 105 | 52.0 |
| No | 97 | 48.0 |
| **Ever had to delay or forgo medical treatment due to lack of money (n = 202)** | | |
| Yes | 99 | 49.0 |
| No | 103 | 51.0 |
| **Ever had to borrow to pay for health care (n = 202)** | | |
| Yes | 107 | 53.0 |
| No | 95 | 47.0 |
| **Your current financial situation will allow you to pay for unexpected medical expenses (n = 202)** | | |
| Yes | 101 | 50.0 |
| No | 101 | 50.0 |
| **Ever sought other means of care due to lack of money (n = 202)** | | |
| Yes | 99 | 49.0 |
| No | 103 | 51.0 |

the last six months. However, among those whose household members did fall ill within the last 6 months (48.8%), a higher percentage (52.0%) reported being economically impacted by the illness, with the majority (51.0%) managing to afford medical treatment. Interestingly, a substantial portion of those affected (53.0%) had to borrow money to cover the costs of medical treatment. Notably, there was an equal number of respondents who could afford medical care and those who couldn't, reflecting the diversity of their current financial situations. Despite these financial challenges, the majority of respondents (51.0%) did not need to seek alternative sources of care outside the healthcare system, highlighting their resilience in coping with health-related issues.

Figure 1 shows NHIA enrollees; 55.6% have not had any member of the household being ill in the last 6 months while 44.4% have had members of the household being ill in the last 6 months.

NHIA non enrollee; 50.3% of non-enrollees have not had any member of their household ill in the last 6 months while 49.7% of non-enrollees have had members of their household, ill in the last 6 months.

Figure 2: shows that 71.9% of NHIA enrollees have not had any economic effect due to illness while 28.1% have been affected economically due to the illness.

NHIA non enrollees; 54.7% have not had any economic effect due to illness while 45.3% have been affected economically due to the illness.

Figure 3: shows that NHIA enrollee; 71.9 % have had to delay or forgo medical treatment due to lack of money while 28.1% have not.

NHIA non-enrollees; 57.6% have had to delay or forgo medical treatment due to lack of money while 42.4% have not.

Figure 4: shows that NHIA enrollee: 78.1% think their current situation will allow them to pay for unexpected medical expenses while 21.9% do not

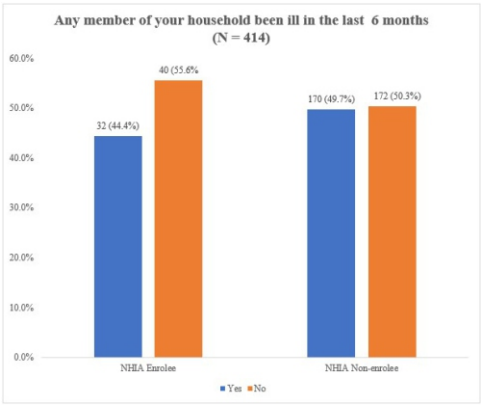


Figure 1: Any member of your household been ill in the last 6 months (X2 = 0.659, p = 0.417)

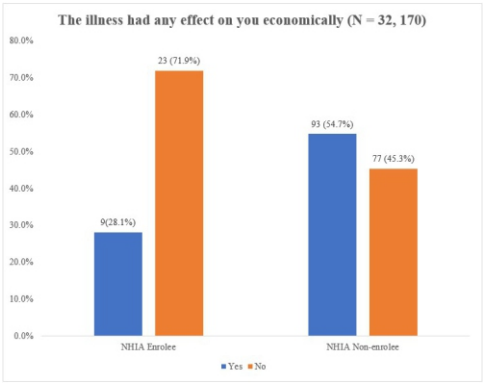


Figure 2: The illness had any effect on you economically (X2 = 7.612, p = 0.006)

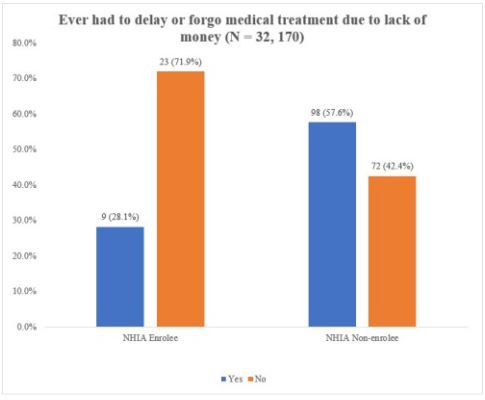


Figure 3: Ever had to delay or forgo medical treatment due to lack of money (X2 = 9.422, p = 0.002)

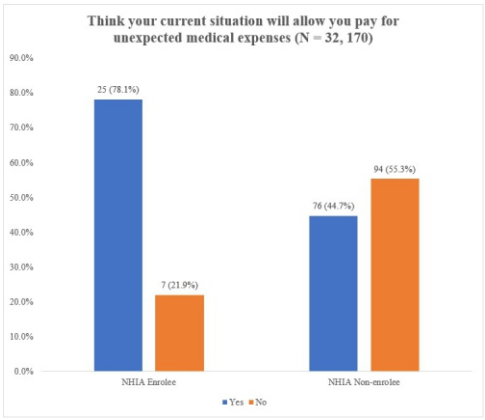


Figure 4: Think your current situation will allow you to pay for unexpected medical expenses (X2 = 9.422, p = 0.002)

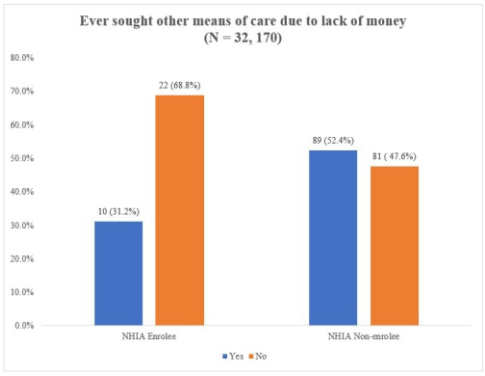


Figure 5: Ever sought other means of care due to lack of money (X2 = 4.799, p = 0.028)

think their current situation will allow them to pay for unexpected medical expenses.

NHIA non enrollee: 44.7% think their current situation will allow them to pay for unexpected medical expenses while 55.3% do not think their current situation will allow them to pay for unexpected medical expenses.

Figure 5: shows that NHIA enrollee: 31.2% sought other means of care due to lack of money while 68.8% didn't seek other means of care due to lack of money.

NHIA non-enrollees: 52.4% sorted other means of care due to lack of money while 46.6% didn't sort other means of care due to lack of money.

Table 6 shows the willingness of respondents to enroll for health insurance. Respondents who were willing to enroll for NHIA after the interaction were 53.6% and those who were not willing to enroll were 47.4% of respondents. Out of those who were willing to enroll, 73.9% agreed to enroll later after discussing with their family, 15.0% agreed to enroll immediately after the interaction, 7.8% agreed to enroll on their next visit and 3.3% of respondents did not specify when they will enroll for NHIA.

Table 6: Willingness to take up health insurance

| Variable | Frequency N = 414 | Percentage (%) |
|---|---|---|
| **Willingness to enroll into NHIA (n = 342)** | | |
| Yes | 180 | 53.6 |
| No | 162 | 47.4 |
| **If yes, when (n = 180)** | | |
| Immediately now | 27 | 15.0 |
| Later after discussing it with my family | 133 | 73.9 |
| On my next visit | 14 | 7.8 |
| Others | 6 | 3.3 |
| **If no, why (n=162)** | | |
| Still not convinced | 81 | 50.0 |
| Do not have the money to do so | 124 | 76.5 |
| Hardly attend hospitals | 82 | 50.6 |
| Others | 58 | 35.8 |

Table 6: Relationships between socio-demographic characteristics of respondents and their level of accessibility to NHIA

| Variable | Accessing NHIA Yes (%) | No (%) | Chi-square | p-value |
|---|---|---|---|---|
| **Age Group (in years)** | | | | |
| < 25 | 7 (22.6) | 24 (77.4) | 4.229 | 0.517 |
| 25 – 34 | 14 (13.1) | 93 (86.6) | | |
| 35 – 44 | 27 (21.1) | 101 (78.9) | | |
| 45 – 54 | 10 (20.0) | 40 80.0) | | |
| 55 – 64 | 5 (12.5) | 35 (87.5) | | |
| ≥ 65 | 9 (15.5) | 49 (84.5) | | |
| **Gender** | | | | |
| Male | 26 (15.2) | 145 (84.8) | 0.970 | 0.325 |
| Female | 46 (18.9) | 197 (81.1) | | |
| **Level of Education** | | | | |
| No Formal Education | 1 (12.5) | 7 (87.5) | 21.091 | **<0.001** |
| Primary | 2 (11.8) | 15 (88.2) | | |
| Secondary | 18 (9.1) | 179 (90.9) | | |
| Tertiary | 51 (26.6) | 141 (73.4) | | |
| **Marital Status** | | | | |
| Single | 10 (14.7) | 58 (85.3) | 1.239 | 0.744 |
| Married | 53 (18.0) | 242 (82.0) | | |
| Divorced/ Separated | 7 (21.2) | 26 (78.8) | | |
| Widowed | 2 (11.1) | 16 (88.9) | | |
| **Family type (n = 295)** | | | | |
| Monogamy | 39 (18.3) | 174 (81.7) | 0.061 | 0.804 |
| Polygamy | 14 (17.1) | 68 (82.9) | | |
| **Family size** | | | | |
| ≤5 | 20 (13.0) | 134 (87.0) | 3.311 | 0.069 |
| >5 | 52 (20.0) | 208 (80.0) | | |
| **Religion** | | | | |
| Christianity | 68 (18.5) | 299 (81.5) | 2.919 | 0.232 |
| Islam | 3 (8.8) | 31 (91.2) | | |
| Traditional | 1 (7.7) | 12 (92.3) | | |
| **Tribe** | | | | |
| Yoruba | 68 (18.5) | 300 (81.5) | 3.721 | 0.293 |
| Igbo | 3 (14.3) | 18 (85.7) | | |
| Hausa | 1 (6.2) | 15 (93.8) | | |
| Others | 0 (0.0) | 9 (100.0) | | |
| **Occupation** | | | | |
| Trader | 6 (8.2) | 67 (91.8) | 31.013 | **<0.001** |
| Farmer | 5 (11.1) | 40 (88.9) | | |
| Artisan/ Technician | 12 (16.7) | 60 (83.3) | | |
| Civil Servant | 41 (32.3) | 86 (67.7) | | |
| Professional | 7 (9.2) | 69 (90.8) | | |
| Unemployed/ Student | 1 (4.8) | 20 (95.2) | | |
| **Income (Naira)** | | | | |
| < 30,000 | 27 (11.8) | 201 (88.2) | 10.877 | **0.001** |
| ≥ 30,000 | 45 (24.2) | 141 (75.8) | | |

From Table 6:
Gender: The majority 46(18.9%) of the respondents were female while 26(15.2%) were males that are able to access NHIA 145(84.8) were males and 197 (81.1) were females who were not able to access NHIA.
Age: most 27 (21.1) of them that were able to access NHIA were between 35 - 44 years, 14 (13.1) were between 25 - 34 years, 10 (20.0) were between 45 - 54 years, 9 (15.5) were greater than 65 years, 7 (22.6) were less than 25 years, 5 (12.5) were between 55 - 64 years.
Most 101 (78.9) of them that were not able to access NHIA were between 35 - 44 years, 93 (86.6) were between 25 - 34 years, 49 (84.5) were greater than 65 years, 40 (80.0) were between 45 - 54 years, 35 (87.5) were between 55 - 64 years, 24 (77.4) were less than 25 years.
Marital status: The majority 53 (18.0) of the respondents were married, 10 (14.7) were single, 7 (21.2) were divorced/separated, and 2 (11.1) were widowed that were able to access NHIA. The majority 242 (82.0) of the respondents were married, 58 (85.3) were single, 26 (78.8) were divorced/separated, and 16 (88.9) were widowed and were not able to access NHIA.
The majority of 68 (18.5) of the respondents were of Yoruba ethnicity, 3 (14.3) were Igbo, and 1 (6.2) Hausa that have access to NHIA. The majority of 300 (81.5) were of Yoruba Ethnicity, 18 (85.7) were Igbo, 15 (93.8) were Hausa, and 9 (100.0) were Others.
Religion: The majority 69 (18.5) were Christians, 3 (8.8) were Muslims, and 1 (7.7) practice traditional religions that have access to NHIA. The majority 299 (81.5) were Christians, 31 (91.2) were Muslims, and 12 (92.3) practised traditional religion and did not have access to NHIA.
As regards family type, the majority 39 (18.3) of the respondents were monogamous, and 14 (17.7) were polygamous and had access to NHIA. The majority 174 (81.7) of the respondents were Monogamous, and 68 (82.9) were Polygamous and did not have access to NHIA.
As regards family size, the majority 52 (20.0) of the respondents had a family size of greater than 5 members while 20 (13.0) of the respondents had a family size of fewer than 5 members.
As regards the respondent's Educational Status, the majority 51 (26.6) have their tertiary education, 18 (9.1) have their secondary education, 2 (11.8) have their Primary Education and 1 (12.5) have no formal education that has access to NHIA. The majority 179 (90.9) have secondary education, 141 (73.4) have tertiary education, 15 (88.2) have primary education, and 7 (87.5) have no formal education and do not have access to NHIA.
As regards Occupation, 41 (32.3) are civil servants, 12 (16.7) are Artisans/Technicians, 7 (9.2) are professionals, 6 (8.2) are traders, 5 (11.1) are farmers, 1 (4.8) are unemployed/students that have access to NHIA. The majority 86 (67.7) are civil servants, 69 (90.8) are professionals, 67 (91.8) are traders, 60 (83.3) are artisans/technicians, and 20 (95.2) are unemployed/students that do not have access to NHIA.
As regards income, the majority 45 (24.2) of the respondents had an income of greater than 30000, 27 (11.8) had an income of less than 30000 and had access to NHIA. The majority 201 (88.2) of the respondents had an income of less than 30000, 141 (75.8) had an income of greater than 30000 do not have access to NHIA.

Table 7: Binary logistic regression for the predictors of accessibility to NHIA

| Variable | B | AOR | 95% CI for AOR | | p-value |
|---|---|---|---|---|---|
| | | | Lower | Upper | |
| **Level of Education** | | | | | |
| No Formal Education (ref) | | | | | |
| Primary | -0.924 | 0.397 | 0.026 | 5.967 | 0.504 |
| Secondary | -1.114 | 0.328 | 0.034 | 3.184 | 0.336 |
| Tertiary | 0.672 | 1.959 | 0.211 | 18.179 | 0.554 |
| **Family size** | | | | | |
| ≤5 | -0.567 | 0.567 | 0.252 | 1.277 | 0.171 |
| >5 (ref) | | 1.000 | | | |
| **Occupation** | | | | | |
| Trader | 0.446 | 1.562 | 0.166 | 14.691 | 0.697 |
| Farmer | 1.055 | 2.872 | 0.293 | 28.099 | 0.365 |
| Artisan/ Technician | 1.566 | 4.785 | 0.548 | 41.783 | 0.157 |
| Civil Servant | 2.866 | 17.725 | 2.109 | 148.993 | **0.008** |
| Professional | 0.906 | 2.475 | 0.269 | 22.741 | 0.423 |
| Unemployed/ Student (ref) | | 1.000 | | | |
| **Income (Naira)** | | | | | |
| < 30,000 | 0.777 | 2.176 | 1.156 | 4.097 | **0.016** |
| ≥ 30,000 (ref) | | 1.000 | | | |
| **Knowledge of Health Insurance** | | | | | |
| Good (6 – 12) | 0.763 | 2.145 | 1.181 | 3.897 | **0.012** |
| Poor (0 – 5) (ref) | | 1.000 | | | |

B – Regression Coefficient, AOR – Adjusted Odd Ratio, 95% CI – 95% Confidence Interval ref – reference category

Table 7 shows binary logistics regression for the predictors of accessibility to NHIA. The summary of predictors of NHIA accessibility: Binary logistic regression showed that civil servants (AOR = 17.73, p = 0.008), respondents with monthly income < ₦30,000 (AOR = 2.18, p = 0.016), and those with good knowledge of health insurance (AOR = 2.15, p = 0.012) were significantly more likely to access

NHIA. Other factors such as education level, family size, and most occupations did not show statistically significant associations.

## Discussion

Inaccessibility to structured healthcare financing remains a significant barrier to achieving universal health coverage (UHC) in developing countries like Nigeria. According to the World Health Organization, healthcare financing involves the mobilization, accumulation, and allocation of resources to meet the health needs of populations, either individually or collectively.[14] Health insurance is one such financing mechanism intended to reduce out-of-pocket (OOP) expenditure and improve access to essential services through risk pooling and prepayment.

Our study found that the majority of respondents (30.9%) were aged 35–44 years, and most were married (71.5%). With 94% of participants having attained at least secondary education, this demographic should be adequately positioned to comprehend and evaluate the benefits of the National Health Insurance Authority (NHIA). However, despite this educational advantage and the fact that 30.7% of respondents were civil servants—a group theoretically with better access to NHIA—67.7% of civil servants surveyed were not enrolled. This finding echoes the results of Agba et al., who observed that even in formal employment, enrollment in health insurance remained low due to system inefficiencies and mistrust.[15]

Income emerged as a strong determinant in this study: 55.1% of respondents earned below the national minimum wage (₦30,000), which significantly influenced access to NHIA. Similarly, a study by Bolarinwa et al. found that willingness to pay for health insurance among Nigeria's informal sector was largely shaped by income, affordability, and perceived service quality.[16] Our study reinforces this, as those earning less than ₦30,000 were significantly less likely to be enrolled (AOR: 2.176; 95% CI: 1.156–4.097).

Despite high awareness of NHIA (64.0%) and knowledge dissemination via health facilities (84%), 61.8% still lacked operational understanding of the scheme. This is consistent with findings by Iyalomhe et al., who noted that poor comprehension of insurance procedures often limits uptake even when awareness is high.[17] Moreover, many respondents expressed skepticism about the quality of services under NHIA, citing poor medication availability—an issue corroborated by Uzochukwu et al., who highlighted the inadequacy of covered services as a deterrent to enrollment.[18]

Financial burden from healthcare costs was also evident: while 51% had not delayed treatment, 50% reported borrowing money to pay for healthcare. This confirms previous findings that high OOP expenditure leads to catastrophic spending and delayed care.[19] Bodhisane and Pongpanich, in their study on Laos, similarly observed that health insurance significantly reduces the financial strain associated with healthcare costs.[20]

Although 53.6% indicated a willingness to enroll in NHIA, most wanted to consult family first (73.9%), showing that household decision-making dynamics remain crucial in health-seeking behavior. Meanwhile, 47.4% were uninterested in joining, citing inadequate finances (76.5%), infrequent hospital use (50.6%), and doubt over NHIA's benefits (50.0%)—highlighting an attitudinal and economic dimension to enrollment resistance.

Significant predictors of NHIA access in our study included education, occupation, and income. Individuals with tertiary education had higher odds of enrollment, aligning with findings from Bamidele and Adebimpe, who noted that education positively influences health insurance participation.[21] Civil servants were significantly more likely to access NHIA than unemployed individuals (AOR: 17.725), emphasizing the role of formal employment in facilitating enrollment, as also observed in other Nigerian states.[22]

Succinctly, our findings affirm that despite awareness and general acceptance of NHIA, economic barriers, poor perception of service quality, and limited health literacy remain major obstacles to effective participation. The financial inaccessibility of NHIA translates into poor healthcare-seeking behavior, increased borrowing, and a decline in quality of life, particularly during emergencies. Therefore, addressing affordability, service quality, and transparency is essential to expand NHIA enrollment and achieve UHC in communities like Ido-Ekiti.

## Limitations of study

The course of this study was centred in areas within Ido-Osi, Ekiti State, where the majority of the

respondents were Yoruba-speaking indigenes, due to this fact there was a consequent language barrier encountered when aiding the respondents in filling out the questionnaire. This contributed to an overall delay in the completion of the assessment and restricted access to potential respondents that would have aided in the study. Illiteracy amongst some of the respondents made it substantially difficult for them to understand and properly answer the questionnaire provided to them irrespective of the assistance made available to them by the researchers, and this resulted in a lack of appropriate information that would have aided the study.

## Conclusion

Undoubtedly, the implementation of a national health insurance scheme in Nigeria is essential to improve the country's poor health indicators and alleviate the burden of out-of-pocket spending for healthcare services. The study revealed a significant level of awareness among both the insured and uninsured populations. However, the enrollment into the program progressed at a sluggish pace.

This research revealed that there is a disparity between the number of individuals enrolled in the National Health Insurance Authority and those who possess knowledge about health insurance. Consequently, a notable correlation exists between inadequate awareness, limited accessibility to the National Health Insurance Authority, and the economic repercussions of out-of-pocket expenses. Despite the widespread awareness of the National Health Insurance, there remains a considerable challenge in accessing it, leading to subsequent economic consequences for non-members.

## Recommendation

### To the state government

1. Regarding the perception of service delivery efficiency among enrollees, respondents perceive the scheme to be efficient. However, it is recommended that the government implement improved monitoring of service providers' efficiency levels to ensure that the current score does not decline.
2. Considering the respondents' lack of awareness about the operations of the scheme, it is recommended to organize additional health promotion efforts such as seminars, conferences, and workshops. Furthermore, distributing more health literature will help educate enrollees about the scheme. These initiatives will inform the general public and dispel any misconceptions or misunderstandings about the scheme, particularly as it is being extended to the non-formal sector of the economy.
3. We suggest the elimination of certain problematic aspects that hinder access to healthcare, such as the requirement for enrollees to pay a 10% fee to pharmacists when receiving services as payment of this fee increases the financial burden of enrollees.

### To the local government

1. Partnerships with Non-Governmental Organizations to enroll nonmembers free of charge.
2. Partnership with NHIA in tertiary health centres to sensitize patients on the importance of enrolling for NHIA.
3. Build more health posts and clinics in rural settings in order to make service delivery more accessible to the indigenes.
4. Establish public awareness programs, conduct educational campaigns and dispel misconceptions surrounding health insurance.

## Competing interests declaration

The author declares no competing interests related to this study.

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