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Health Insurance: Factors Influencing the Utilization of Health Insurance Schemes by Medical Doctors in Lagos State, South-West Nigeria

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ABSTRACT

Health insurance is an important determinant of access to healthcare services worldwide. In Nigeria, different health insurance schemes are available but their level of utilization differs among the population. Social and private health insurance schemes are trying to achieve up to 20% coverage. Using a target population in a specific location, this research aimed to study the factors influencing the utilization of health insurance schemes by medical doctors in Mushin Local Government Area (LGA) of Lagos State, South-West Nigeria. This research is a cross-sectional descriptive study and involved 300 medical doctors who were selected in Mushin LGA using a multi-stage sampling technique. A structured, self-administered questionnaire was used to collect data from the respondents. Data was analyzed using SPSS version 26, and statistical significance was set at p-value<0.05. Bivariate analysis was used to describe the dependent and the independent variables. Chi-square and logistic regression (where appropriate) were used to test for association between independent and dependent variables. Many of the respondents were aware of existing different health insurance schemes. Six factors influencing the utilization of health insurance schemes were identified such as prolonged waiting time (87.0%), use of substandard drugs for enrollees (86.0%), shortage of drugs (out-of-stock medicines) (86.3%), poor attitude of healthcare workers (72.3%), insurance scheme does not cover some healthcare services and drugs (89.7%), and lastly, stringent and unsatisfactory terms and conditions of health insurance schemes (85.0%). The design and delivery of health insurance schemes should be improved upon by the stakeholders, in order to make health insurance attractive to the general population.

INTRODUCTION

Health insurance can be described as a method of proactive financing of medical services using contributions of a premium into a common pool, to pay for health services specified in an insurance plan (Karamagi, 2023). Health insurance is an indisputable tool for healthcare funding. Most developed countries have used health insurance to subsidize healthcare for their citizens. It is recently being applied by developing countries for the obvious issue of deficiencies in healthcare availability and funding which has been financed by public funding over the years (Chowdhury, 2022).

In public insurance schemes, the funds are paid for general or hypothecated taxes, a source which helps to promote access and promote equity. Available funds in public health insurance are often not enough and need to be supplemented by funds from private insurance. Private health funds are paid directly to the fund managers and this consists of non-profit, community health insurance schemes and for-profit plans. When judiciously managed, private coverage helps improve access and reduces large out-of-pocket (OOP) expenses for healthcare (Motaze, 2015). They constitute a useful source of supplementary insurance to provide coverage for health services to Nigerian populations who are not covered by publicly funded schemes (Onwujekwe, 2012).

Poorly planned private health insurance systems have been associated with exacerbating inequalities, the high volume of uninsured, and the exorbitant cost of OOP payments (Baggio, 2018). Overtime, the informal sector has been included but the contribution is usually fixed due to difficulties in estimating income. The poor populations are also not left out as special programs include them. Under the social health insurance (SHI), the rich population pays higher than the poor population while they receive the same level of care regardless of their contributions and health conditions. The funds realized may be administered by the public or private insurers or a combination of both. SHI helps to make available extra domestic funds, improving health system quality, reducing health inequality, and OOP spending. It also provides financial risk protection and encourages the achievement of universal coverage. SHI is often challenging to be practiced in the other sectors in Nigeria. National health insurance involves a coordinated insurance scheme that covers the entire population, and it is usually

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established by national legislation (Alawode, 2021). The NHIS is a social health insurance program designed by the Federal Government of Nigeria to complement sources of financing the health sector, and to enhance access to healthcare for the majority of Nigerians. All federal civil servants in Nigeria pay for NHIS directly from source. Thus, enrolment of medical doctors who work in federal government facilities is mandatory, although recent studies have shown that utilization is very poor and could likely be attributed to the factors such as poor quality medicines, prolonged waiting time, and stringent rules (Akinyemi, 2021). Currently, the enrolment level in the scheme is predominantly among those in the formal sector and user experiences have been varying. The levy is retrieved under the Value Added Tax (VAT) and is paid by enrollees for their ID cards. It complements the current system by providing a broad pool of insurance policies for the entire population. The cost of a single medical visit generally is high (Aregbeshola, 2018).

Health insurance in Nigeria has seen a rigorous historical development from its inception in the year 1962 till its amendment by the National Health Insurance Scheme (NHIS) Act 35 of 1999. Nigeria has a population of more than 200 million people with a developing economy, and an infrastructure that needs improvement. The Nigerian health system is faced with setbacks such as disease outbreaks, financial crisis, and political instability. In 2004, the insurance coverage was estimated at 150,000 lives which later increased to 5 million in 2014 (representing 3% of the total Nigerian population). The Nigerian healthcare system is comprised of private and publicly managed medical facilities (Emmanuel, 2022).

In 1962, an attempt to build a healthcare system in Nigeria was made when the Minister of Health at that time, presented a bill in parliament for its enactment in the Lagos area. Unfortunately, there was resistance from the Nigerian Medical Association against the idea. In 1988, another Minister of Health commissioned a committee which recommended the template for the present-day Nigeria Health Insurance Authority (NHIA). Due to administrative clumsiness, the law that established the NHIA scheme was signed in May 1999, but it became active in 2005. The period between the law signing and the scheme's operation was prolonged, providing the private sector with an opportunity to build private health insurance schemes. After the launch of the health insurance scheme in June 2005, it was given a presidential mandate to ensure a universal coverage of all Nigerians by 2015 through social health insurance. There is a progressive improvement as compared to when the scheme was flagged off in 2005 (Okebukola, 2016).

Unlike the development of health insurance in Ghana and South Africa, Nigeria has had many issues in the health insurance industry. The Nigerian health insurance is mainly focused on major cities, state capitals and major towns alone while the rural areas are left out. This has left many people who may require these services but lack the necessary information to get health insurance for themselves and their families. Health insurance in Nigeria is overseen by an agency of the federal government under the Ministry of Health which has a role of checking on hospitals, and health insurance companies. Although the state government is responsible for the general hospital, the local government is responsible for the primary healthcare centers (PHCs). There is also a special arrangement for free healthcare for Nigerian citizens funded by the government in partnership with international donor partners under certain circumstances. Government employees are given a special healthcare scheme while the private sectors sign contracts with private insurance companies to provide tailored health coverage to their employees. The Nigerian government is now partnering with international bodies such as the World Health Organization (WHO), and the World Bank to improve the healthcare network in Nigeria (Ilesanmi, 2023).

The Nigeria Health Insurance Scheme (NHIS) covers approximately 4% of the population as of the year 2000. It is an excellent option for addressing the healthcare problems if managed well. In fact, the NHIS provides comprehensive healthcare coverage to millions of Nigerian population while the scheme is still developing (Nwanaji-Enwerem, 2022). NHIA replaced NHIS in 2005. It is pertinent to note that while the NHIA is good for the unemployed, most of them do not use the service because of a lack of affordability. While the presence of NHIA has made health insurance more affordable, the scheme is inadequate for the unemployed population. While the NHIA has made healthcare more accessible, a significant portion of the Nigerian population does not enjoy any form of health coverage (Adebisi, 2019).

The NHIS was initially implemented as a state-run health insurance plan in Nigeria, but the governing council did not have the required expertise to design and implement a national health insurance scheme. The governing council was largely comprised of politicians with little knowledge of insurance. However, the NHIA has been a success despite a lack of good governance, and low cost (Welcome, 2011). To make healthcare services more affordable for all, the federal government of Nigeria has passed the national health insurance authority (NHIA) law, making health insurance mandatory. The new system will make healthcare more affordable for the Nigerian population by allowing them to receive services in the private and public sectors at a discounted rate. Before the NHIA was approved, the government had to pass a bill requiring all employers to offer health insurance to their employees (Ipinnimo, 2022).

Established under Act 35 of the 1999 Constitution, the NHIS (now NHIA) was established to regulate health insurance delivery in Nigeria and began operations in 2005. The scheme collects contributions to fund health services, with payments managed by registered Health Maintenance Organizations (HMOs). As of 2020, there were about 58 HMOs accredited by the NHIA, 49 of which operate nationwide (Ipinnimo, 2023). To ensure a broader

reach, NHIA decentralized implementation, encouraging states to develop localized versions. However, as of 2019, only 18 states had adopted or were considering the State-Based Health Insurance Scheme (SHIS), with Lagos State being the pioneer in 2015 (Uzochukwu, 2015). Despite these efforts, health insurance coverage remains limited. A national survey highlighted how persistent out-of-pocket (OOP) expenses continue to financially burden households, often pushing them into poverty.

Increased financial stress can lead to increased oxidative stress. The major contributors to oxidative stress are free radicals such as superoxide anions, hydroxyl radicals, and hydroperoxyl radicals and all are significant physiologically. A non-radical which is significant physiologically is hydrogen peroxide (Ama, 2023; Baysah, 2023; Ikwuka, 2023b; Uche, 2023).

The financial burden and economic cost of managing different chronic metabolic diseases have also been reported. The effects of some metabolic disorders arising from hormonal imbalance on female fertility have also been mentioned (Aliu-Ayo, 2023a; Aliu-Ayo, 2023b; Ikwuka, 2023e; Inya, 2023a; Inya, 2023b; Esan, 2025a; Esan, 2025b). Gametes which refer to the male and female reproductive cells (sperm and ova) are haploid and contain one set of chromosomes which could be either 1–22 X or 1–22 Y (Ikwuka, 2023a). Some of these chronic metabolic diseases belong to a group commonly referred to as metabolic syndrome diseases (MSDs) which are also associated with very high morbidity and mortality rates (Ikwuka, 2015; Ikwuka, 2017a; Ikwuka, 2017c; Ikwuka, 2023c; Ikwuka, 2023f; Ikwuka, 2024; Virstyuk, 2016). In addition, different studies have also reported associations between MSDs and high blood pressure, glucose and lipid metabolic disorders, asymptomatic hyperuricemia, systemic immune inflammation, and fibrogenesis – factors that may eventually lead to kidney damage (Ikwuka, 2017d; Ikwuka, 2017e; Ikwuka, 2018c; Ikwuka, 2018d; Ikwuka, 2019a; Ikwuka, 2019c; Ikwuka, 2022; Ikwuka, 2023d; Virstyuk, 2017a; Virstyuk, 2018a; Virstyuk, 2019; Virstyuk, 2021a; Virstyuk, 2021b).

On the other hand, metabolic syndrome diseases (MSDs) are interrelated diseases that contribute significantly to healthcare costs, morbidity, and mortality rates, thus requiring the search for new, effective, and innovative treatment options (Ikwuka, 2024). Innovative treatment options such as combining HMG-CoA reductase inhibitors, SGLT-2 inhibitors, and angiotensin II receptor blockers (type 1) i.e. A2RB (AT1), have shown clinical effectiveness indicated by marked improvements in the metabolic functions of the heart, liver, pancreas, and kidney (Ikwuka, 2017b; Ikwuka, 2018a; Ikwuka, 2018b; Ikwuka, 2021; Virstyuk, 2017b; Virstyuk, 2018b; Virstyuk, 2018c; Ikwuka, 2024). Additionally, Glucagon-like Peptide 1 Receptor Agonists (GLP-1 RAs) such as liraglutide have been shown to improve the clinical outcomes in patients with type 2 diabetes mellitus and hypertension (Ikwuka, 2019b).

The National Health Insurance Authority (NHIA), a government-backed initiative, is designed to provide financial coverage for healthcare services to individuals with low income, aiming to improve their access to medical care. Despite its intended purpose, the scheme faces notable shortcomings. Key issues such as the demeanor of healthcare personnel, and levels of patient satisfaction significantly influence how widely the scheme is utilized (Pillah, 2023).

The low uptake of health insurance among healthcare professionals, who are expected to have better knowledge of the system, signals deeper structural and perception issues within Nigeria's health insurance framework. If medical doctors who play a critical role in advocating for, and implementing healthcare policies are themselves reluctant to engage with health insurance, it may undermine broader efforts to promote insurance adoption among the general population. As of 2020, the percentage of Nigerians covered by NHIS was 5% which is far less than the global target for universal health coverage (Azeez, 2021). The uptake is even worse in the private sector where many of these medical doctors practice.

Over time, many people including medical doctors who have experience in the operations of health insurance have complained of certain issues with the service such as poor drug quality, prolonged waiting period, and out-of-stock medical supplies (Azeez, 2021). The use of cheap/poor quality medicines represents a factor affecting health insurance utilization by enrollees in Nigeria. Prolonged waiting period may also worsen disease outcomes, leading to death and other complications especially during health emergencies. Out-of-stock medical supplies make healthcare facilities unable to provide treatment to the sick, hence exposing them to severe complications. People who use OOP payment have also suffered some barriers to healthcare access leading to deterioration of health status, complication of illnesses, and catastrophic expenditure (Baharin, 2019).

In Nigeria, the NHIA is an important part of the healthcare system. Without it, the country will face financial hardship. If the government does not implement the national health insurance scheme, people will not receive the benefits they need. The NHIA has been an effective tool for ensuring equitable health coverage for all citizens. But it is not mandatory in every state in Nigeria, and it does not cover all healthcare services. A few countries are now implementing the national health insurance scheme (Alawode, 2021). Currently, a national health insurance scheme is the most widespread form of health insurance in Nigeria. The government is trying to create a health insurance scheme that covers all citizens of the nation. This is why, it is important to assess the national health insurance scheme and ensure that all members are protected. If a national health insurance scheme is not a good choice, it may not be the best option to improve the lives of many people in a country.

Mushin LGA of Lagos State was selected for this current study due to the availability of study participants who are

medical doctors. Of all the LGAs in Lagos State, Mushin LGA has the highest number of medical doctors due to the presence of Lagos University Teaching Hospital (LUTH). The currently available research findings for this target population group are limited. Thus, there is a need to evaluate the factors influencing the utilization of health insurance schemes, where the population of interest could be accessed in their good numbers. There is need to understand the factors influencing the utilization of health insurance schemes among medical doctors in Mushin LGA of Lagos State for the purpose of providing useful information to the administrators of health insurance schemes in Nigeria. This can lead to improvement in the administration of health insurance schemes in Nigeria. When medical doctors utilize health insurance as an equitable health financing mechanism, it would promote trust in the scheme and increase the uptake of health insurance among the general population.

MATERIALS AND METHODS

Study Area

Lagos State is one of the 36 states of Nigeria, and it is both the most populous state and the smallest in land area. Bounded to the south by the Bight of Benin and to the west by the international boundary with Benin Republic, Lagos State borders Ogun State to the east and north making it the only Nigerian state to border only one other state. Named after the city of Lagos, the most populous city in Africa, the Lagos State was created from the old Western Region (The Editors of Encyclopaedia Britannica, 2025).

Mushin Local Government Area (LGA) has a high number of medical doctors compared to other LGAs in Lagos State due to the presence of Lagos University Teaching Hospital (LUTH) which is a federal tertiary healthcare facility and a foremost training institute for medical doctors at undergraduate and postgraduate levels in Nigeria. LUTH has staff strength of 2,300 out of which 476 are medical doctors (Makinde, 2018). In addition, Mushin LGA has also one general hospital, five primary healthcare centers, as well as 63 registered private hospitals where medical doctors work. As stated by the Medical and Dental Council of Nigeria in 2022, the number of registered and licensed medical doctors in Nigeria was 24,000, out of which 2,561 practice in Lagos State. No literature with specific number of medical doctors in private hospitals within Mushin LGA was found. However, there is a register of medical doctors in all the public hospitals within Mushin which puts the figure as follows (Roberts, 2015):

1. LUTH - 476 medical doctors
2. General Hospital, Mushin - 29 medical doctors
3. 5 Primary Healthcare Centers - 75 medical doctors
4. 63 registered private hospitals - Average of 2 medical doctors per hospital, approximately 126 medical doctors

Estimated total number of medical doctors in Mushin LGA – 706

Study Design

This study is a cross-sectional descriptive study utilizing a quantitative approach and a multi-stage sampling technique.

Study Population

The study population is medical doctors who work in public and private hospitals within Mushin LGA, Lagos State.

Sample Size

The sample size was calculated using the Cochrane formula for cross-sectional studies:

$$n = \frac{Z^2PQ}{d^2}$$

Where,
n = sample size
Z = standard normal variate set at 1.96, which corresponds to a 95% confidence level
P = proportion in population extracted from the literature of a previous related study = 35% or 0.35 (Knier, 2024)
Q = 1 – P = 1 – 0.35 = 0.65
d = degree of accuracy desired (absolute precision), which is 5% or 0.05

$$n = \frac{1.96^2 x\ 0.35\ x\ 0.65}{0.05^2} = 350 \text{ respondents}$$

With one out of seven non-response or attrition rate expected during sampling and data collection, the final sample size was maintained at 300.

Inclusion Criteria

1. Medical doctors who work within Mushin LGA on a full-time basis.
2. Medical doctors who consented to participate in the study voluntarily without any financial inducement.

Exclusion Criteria

1. Medical doctors who work outside Mushin LGA.
2. Medical doctors who did not consent to participate in the study voluntarily.

Sampling Technique

A multi-stage sampling technique was utilized. In Stage 1, a stratified random sampling technique was used to select respondents from each health center by proportionate allocation. The sampling frame was drawn from Lagos University Teaching Hospital, Mushin General Hospital, 5 PHCs and 63 Private Hospitals with a total of 706 medical doctors in Mushin LGA. The hospitals, percentage contributed to the sampling frame, and assigned sample size are as follows:

In Stage 2, a simple random sampling by balloting was used to select the respondents based on the sample size allocated to the health center. The medical doctors were

Table 1: Sample size distribution

S/No.	Health center	No. of medical doctors	Sample size allocated
1	Lagos University Teaching Hospital	476	204
2	Mushin General Hospital	29	12
3	Papa Ajao PHC	17	7
4	Alafia/Adeoyo PHC	13	5
5	Igbehinadun PHC	14	5
6	Oduselu Ola PHC	16	7
7	Odoeran/Ogunlana PHC	15	6
8	63 Private Hospitals	126	54
	Total	706	300

given numbers, and the numbers were randomly selected per facility to determine the respondents.

Data Collection

A structured, self-administered questionnaire was used to collect data from the respondents. All questionnaires were given a unique identification number that was recorded on the questionnaire. Data collected was thoroughly checked and validated for accuracy and completeness.

Data Analysis

Data was analyzed using SPSS version 26, and statistical significance was set at p-value<0.05. Bivariate analysis was used to describe the dependent and the independent variables. Simple frequency was used in describing categorical variables. Chi-square and logistic regression (where appropriate) were used to test for association between independent and dependent variables.

Ethical Considerations

Ethical approval was obtained from the Health Research and Ethics Committee (HREC) of the Lagos University Teaching Hospital. The respondents were not influenced in any way into participating in the study. Their participation was voluntary and without consequences for non-participants. Written consent was obtained from respondents before commencement of the study. The confidentiality of the respondents was assured and maintained as unique numbers were used in assigning questionnaires, and not names. The respondents were also assured that data obtained from them would be used solely for research purposes. The nature and purpose of the study were explained to the prospective respondents.

RESULTS AND DISCUSSION

Table 2 shows the socio-demographic characteristics of the respondents.

Table 2: Socio-demographic characteristics of the respondents

Variable	Frequency (n=300)	Percentage (%)
Gender		
Female	94	31.3
Male	206	68.7
Age		
45 and above	59	19.7
35-44	111	37.0
25-34	130	43.3
Marital status		
Divorced	4	1.3
Married	153	51.0
Separated	5	1.7
Single	137	45.7
Widowed	1	0.3
Type of marriage		
Monogamous	140	46.7
Polygamous	13	4.3
Household size		
1-2	62	20.7
3-4	87	29.0
5 and above	125	41.7
Ethnicity		
Hausa	17	5.7
Igbo	106	35.3
Others	53	17.7
Yoruba	124	41.3
Religion		
Christianity	225	75.0
Islam	64	2.3
Others	8	2.7
Traditional	3	1.0
Monthly income		
Below N200,000	20	6.7
N201,000-N300,000	93	31.0
N301,000-N400,000	70	23.3
N401,000-N500,000	61	20.3
Above N500,000	56	18.7

Table 2 shows that males account for 68.7% of the respondents. It also shows that 51.0% of the respondents are married. 41.3% of the respondents are Yorubas, 75.0% are Christians, and 31.0% earned between N201,000 and N300,000 per month.

Table 3: Work-related characteristics of the respondents

Variable	Frequency (n=300)	Percentage (%)
Work setting		
General Hospital	67	22.3
Primary Health Center	55	18.3
Private Hospital	106	35.3
Teaching Hospital	53	17.7
Others	19	6.3
Cadre		
Associate Professor	7	2.3
Consultant	49	16.3
House Officer	3	1.0
Medical Officer	95	31.7
Professor	10	3.3
Junior Resident Doctor	36	12.0
Senior Medical Officer	65	21.7
Senior Resident Doctor	35	11.7
Duration of practice in years since graduation		
0-3	54	18.0
4-6	72	24.0
7-9	53	17.7
10-12	69	23.0
>12	52	17.3

Table 3 shows that 35.3% of the respondents work in a private hospital, and that 31.7% are medical officers. 24.0% of the respondents have been in practice for 4 to 6 years since graduation.

Table 4: Association between socio-demographic characteristics and enrolment in any health insurance among the respondents

Variable	Enrolled in any health insurance		χ2	p-value
	No (%)	Yes (%)		
Gender				
Female	24 (25.5)	70 (74.5)	5.261	0.024
Male	30 (14.6)	176 (85.4)		
Age				
25-34	37 (28.5)	93 (71.5)	19.686	0.001[f]
35-44	15 (13.5)	96 (86.5)		
45 and above	2 (3.4)	57 (96.6)		
Marital status				
Ever married	25 (46.42)	138 (87)	1.920	0.542 [f]
Single	29 (53.7)	108 (78.8)		
Type of marriage				
Monogamous	23 (16.4)	117 (83.6)	0.686	0.487 [f]
Polygamous	1 (7.7)	12 (92.3)		
Household size				
1-2	15 (12)	110 (88.0)	2.087	0.340
3-4	15 (17.2)	72 (82.8)		
5 and above	12 (19.4)	50 (80.6)		
Ethnicity				
Hausa	3 (17.6)	14 (82.4)	2.606	0.428 [f]
Igbo	20 (18.9)	86 (81.1)		
Others	13 (24.5)	40 (75.5)		
Yoruba	18 (14.5)	106 (85.5)		
Religion				
Christianity	48 (21.3)	177 (78.7)	7.334	0.023[f]
Islam	6 (9.4)	58 (90.6)		
Traditional/Others	0 (0.0)	11 (100.0)		

Monthly income				
Below N200,000	8 (40.0)	12 (60.0)	15.857	0.003[f]
N201,000-N300,000	22 (23.7)	71 (76.3)		
N301,000-N400,000	14 (20.0)	56 (91.8)		
N401,000-N500,000	5 (8.2)	56 (91.8)		
Above N500,000	5 (8.9)	51 (91.1)		

Table 4 shows the association between socio-demographic characteristics and enrolment in any health insurance among the respondents. There was a statistically significant association between gender, age, religion, monthly income and enrolment in any health insurance among the respondents ($p<0.05$).

Table 5: Association between work-related characteristics and enrolment in any health insurance among the respondents

Variable	Enrolled in any health insurance		χ2	p-value
	No (%)	Yes (%)		
Work setting				
General Hospital	3 (4.5)	64 (95.5)	21.075	0.001[f]
Others	7 (36.8)	12 (63.2)		
Primary Health Center	7 (12.7)	48 (87.3)		
Private Hospital	20 (18.9)	86 (81.1)		
Teaching Hospital	17 (32.1)	36 (67.9)		
Cadre				
HO/MO/SMO	36 (22.1)	127 (77.9)	12.996	0.005[f]
Junior/Senior Resident Doctor	16 (22.5)	55 (77.5)		
Consultant	2 (4.1)	47 (95.9)		
Associate Professor/Professor	0 (0.0)	17 (100.0)		
Duration of practice in years since graduation				
0-3	9 (16.7)	45 (83.3)	27.700	0.001[f]
4-6	25 (34.7)	47 (65.3)		
7-9	13 (24.5)	40 (75.5)		
10-12	5 (7.2)	64 (92.8)		
>12	2 (3.8)	50 (96.2)		
Employment type				
Private sector	28 (22.8)	95 (77.2)	3.206	0.051
Public sector	26 (14.7)	151 (85.3)		
Others	13 (24.5)	40 (75.5)		
Yoruba	18 (14.5)	106 (85.5)		

Table 5 shows the association between work-related characteristics and enrolment in any health insurance among the respondents. There was a statistically significant association between work setting, cadre, duration of practice in years since graduation, and enrolment in any health insurance among the respondents ($p<0.05$).

Table 6: Association between work-related characteristics and ever enrolled in any health insurance among the respondents

Variable	Enrolled in any health insurance		χ2	p-value
	No (%)	Yes (%)		
Work setting			**31.568**	**0.001[f]**
General Hospital	4 (6.0)	63 (94.0)		
Primary Health Center	7 (12.7)	48 (87.3)		
Private Hospital	22 (20.8)	84 (79.2)		

Teaching Hospital	17 (32.1)	36 (67.9)		
Others	11(57.9)	8 (42.1)		
Monthly income			**18.522**	**0.001[f]**
Below N200,000	9 (45.0)	11 (55.0)		
N201,000-N300,000	26 (28.0)	67 (72.0)		
N301,000-N400,000	14 (20.0)	56 (80.0)		
N401,000-N500,000	5 (8.2)	56 (91.8)		
Above N500,000	7 (12.5)	49 (87.5)		
Cadre			**13.357**	**0.004**
Associate Professor/Professor	0 (0.0)	17 (100.0)		
Consultant	3 (6.1)	46 (93.9)		
HO/MO/SMO	41 (25.2)	122 (74.8)		
Junior/Senior Resident Doctor	17 (23.9)	54 (76.1)		
Duration of practice in years since graduation			**33.105**	**0.001[f]**
0-3	10 (18.5)	44 (81.5)		
10-12	5 (7.2)	64 (92.8)		
4-6	29 (40.3)	43 (59.7)		
7-9	14 (26.4)	39 (73.6)		
>12	3 (5.8)	49 (94.2)		
Employment type			**6.875**	**0.013**
Private sector	34 (27.6)	89 (72.4)		
Public sector	27 (15.3)	150 (84.7)		

Table 6 shows the association between work-related characteristics and ever enrolled in any health insurance among the respondents. There was a statistically significant association between work setting, monthly income, cadre, duration of practice in years since graduation, employment type, and ever enrolled in any health insurance among the respondents ($p<0.05$).
79.0% of the respondents have never been enrolled in any health insurance, and 62.7% of the enrolled respondents have not utilized health insurance in the past one year.

Table 7: Logistic regression analysis of socio-demographic characteristics, work-related characteristics, and ever enrolled in any health insurance

Variable	Coefficient	AOR	95%	CI	p-value
Gender					
Female					
Male	.532	.160	1.702	.810	3.574
Age					
25-34		.282			
35-44	.655	.215	1.924	.684	5.417
45 and above	1.845	.176	6.328	.437	91.715
Religion					
Christianity (Reference)					
Islam	.851	.117	2.342	.809	6.781
Work setting					
Primary Health Center		.007			
General Hospital	1.406	.077	4.081	.860	19.365
Private Hospital	-.280	.595	.756	.269	2.123
Teaching Hospital	-1.152	.085	.316	.085	1.173
Others	-1.117	.118	.327	.081	1.325

Monthly income					
Below N200,000		.179			
N201,000-N300,000	.996	.111	2.708	.795	9.225
N301,000-N400,000	1.258	.072	3.520	.893	13.879
N401,000-N500,000	1.361	.119	3.901	.705	21.601
Above N500,000	-.309	.775		.734	.088
Cadre					
HO/MO/SMO		.437			
Junior/Senior Resident Drs	-.143	.793		.866	.297
Consult/Assoc. Prof./Prof.	1.704	.236	5.498	.328	92.074
Duration of practice in years since graduation					
0-3		.063			
4-6	-1.326	.013	.266	.093	.758
7-9	-1.530	.020	.217	.060	.788
10-12	-.580	.530	.560	.091	3.430
>12	-.543	.758	.581	.018	18.291

Table 7 shows logistic regression analysis of socio-demographic characteristics, work-related characteristics, and ever enrolled in any health insurance. There is no statistically significant association between socio-demographic characteristics, work-related characteristics, and ever enrolled in any health insurance, meaning that being enrolled in any health insurance is not dependent on socio-demographic characteristics, nor work-related characteristics.

Table 8: Factors influencing the utilization of health insurance schemes by the respondents

Factor	Frequency (n)	Percentage (%)
Prolonged waiting time		
Strongly agree	202	67.3
Agree	59	19.7
Neutral	30	10.0
Disagree	4	1.3
Strongly disagree	5	1.7
Use of substandard drugs		
Strongly agree	194	64.7
Agree	64	21.3
Neutral	26	8.6
Disagree	6	2.0
Strongly disagree	10	3.4
Shortage of drugs		
Strongly agree	186	62.0
Agree	73	24.3
Neutral	24	8.0
Disagree	8	2.7
Strongly disagree	9	3.0
Poor attitude of healthcare workers		
Strongly agree	156	52.0
Agree	61	20.3
Neutral	56	18.7
Disagree	17	5.7
Strongly disagree	10	3.3
Insurance scheme does not cover some healthcare services and drugs		
Strongly agree	207	69.0
Agree	62	20.7
Neutral	20	6.7
Disagree	4	1.3
Strongly disagree	7	2.3
Stringent and unsatisfactory terms and conditions of health insurance schemes		
Strongly agree	187	62.3
Agree	68	22.7
Neutral	24	8.0
Disagree	12	4.0
Strongly disagree	9	3.0

Table 8 shows the identified six factors influencing the utilization of health insurance schemes such as prolonged waiting time (87.0%), use of substandard drugs for enrollees (86.0%), shortage of drugs (out-of-stock medicines) (86.3%), poor attitude of healthcare workers (72.3%), insurance scheme does not cover some healthcare services and drugs (89.7%), and lastly, stringent and unsatisfactory terms and conditions of health insurance schemes (85.0%).

In line with Sustainable Development Goal 3 (SDG 3) which encourages healthy lives and well-being for all at all ages (Egbewole, 2024a; Egbewole, 2024b), utilization

of health insurance is important for universal health coverage especially in Nigeria where health insurance coverage is below 6% (Ilesanmi, 2023). Hence, the factors influencing the utilization of health insurance schemes by medical doctors who provide healthcare in the society need to be studied.

NHIA is seen as a social health insurance (SHI) which is a compulsory scheme for federal civil servants in Nigeria, and allows the pooling of resources to finance health services from other sources such as taxes, community insurance, private health insurance, and others. It usually involves defined statutory contributions from the employers, their employees, and the government via a payroll deduction system. The three major social health insurance programs considered in the NHIA are informal sector social health insurance scheme, voluntary group social health insurance scheme, and formal sector social health insurance scheme.

Several factors impact the effective utilization of the NHIA. These include excessive waiting times at hospitals, rigid regulations and unsatisfactory service terms, use of low quality medications, frequent drug shortages, unfriendly behavior of healthcare staff, and lack of coverage for some services and medications (Okah, 2023). In another study (Adebiyi, 2021), the uptake of the National Health Insurance Scheme (NHIS) is influenced by several barriers, including extended waiting times and service delays at healthcare facilities, rigid policies and unfavorable conditions, administration of low-quality or inferior medications, frequent drug shortages or unavailability of essential medicines, unfriendly or unprofessional behavior of healthcare personnel, and limited service and medicine coverage under the scheme (Adebiyi, 2021).

Prolonged waiting time

This current study revealed that majority of the respondents (87.0%) considered prolonged waiting time as a factor. Excessive waiting periods in healthcare facilities have been consistently identified, including in South-east Nigeria, as a factor contributing to patient dissatisfaction. Long delays can lead to worsening health conditions, complications during emergencies, disruption to patients' daily schedules, inconvenient for accompanying people, as well as patient fatigue and frustration. Patients prefer prompt attention. Delays can negatively affect their mood, and consequently, treatment outcomes. Other recent studies have confirmed long waiting times as a key reason for dissatisfaction and reduced participation (Adebiyi, 2021; Lee, 2020).

Use of substandard drugs

This current study showed that one of the factors influencing the utilization of health insurance schemes among medical doctors is the use of substandard drugs. The majority of the respondents (86.0%) agreed with this factor. This may also be reflective of the poor NHIA coverage (less than 6%) in Nigeria. Patients who have utilized NHIA previously always compare the standard of drugs they were prescribed under NHIA with the drugs they have been receiving as a fee-paying patient. This might have accounted for their conclusion that NHIA makes use of substandard drugs which affects the quality of care.

Shortage of drugs

This current study also highlighted shortage of drugs (out-of-stock medicines) under NHIA as a factor influencing the utilization of health insurance schemes. A high proportion (86.3%) of the respondents agreed. Most times, enrollees who do not receive complete medicines would end up using another payment mechanism such as out-of-pocket payment system, which is catastrophic.

Poor attitude of healthcare workers

In this current study, 72.3% of the respondents agreed that healthcare workers have poor attitude. A study among federal civil servants in Rivers State, Nigeria identified poor attitude of healthcare providers as a significant deterrent to NHIS utilization. The increased workload associated with a growing number of enrollees may contribute to staff burnout and negative behavior. As a result, many enrollees report dissatisfaction with services and reduced engagement with the scheme. Health professionals often prioritize out-of-pocket paying clients over NHIS enrollees, likely due to the immediate cash flow provided by fee-for-service (FFS) patients. Examples of poor conduct include lack of courtesy, delayed responses to questions, dismissive behavior, clear favoritism toward FFS patients, prolonged waiting times, and declining service quality (Adebiyi, 2021; Kofoworola, 2020). This could be due to the fact that the workload in public hospitals is overwhelming for the healthcare workers, making them fatigued and unwilling to provide quality care to the teeming population of NHIA enrollees who are always at the hospitals with their family members. A similar study in the South-west region of Nigeria revealed significantly lower satisfaction level (Adewole, 2022). Nevertheless, NHIS (now NHIA) has improved healthcare access, and remains a strategic tool for advancing public health.

Insurance scheme does not cover some healthcare services and drugs

This current study revealed that 89.7% of the respondents indicate that NHIA service does not cover some healthcare services or drugs. NHIA beneficiaries often expect the scheme to cover most or all of their healthcare needs. However, when they learn that some treatments or services are excluded, frustration sets in. Many feel the scheme does not offer adequate value for their contributions. Rigid regulations and limited benefits are therefore major deterrents to widespread utilization (Ipinnimo, 2022). It was shown in this current study that inadequate benefits accounted for a significant level of poor utilization of health insurance scheme among

89.7% of the respondents. This finding corroborates with a study conducted recently in South-west Nigeria where most of the respondents indicated that inadequate benefit package is their reason for poor utilization of health insurance (Adewole, 2022).

Stringent and unsatisfactory terms and conditions of health insurance schemes

This current study also revealed that majority (85.0%) of the respondents agreed that stringent and unsatisfactory terms and conditions of health insurance schemes is a factor influencing the utilization of health insurance schemes.

Nonetheless, it is pertinent to point out some of the limitations of this current study. Several parameters of the study were based on self-report and are subject to different recall biases. Prospects for further research include the fact that the sample size was modest to make any wide-scale projections. Similar studies should be repeated using both rural and urban samples with different socio-economic variables to find the similarities and differences between various groups of people within the general population.

CONCLUSION

Enhancing public knowledge of health insurance schemes can help bring forward more effective policies. However, NHIA is not a cure-all and must be refined to truly elevate healthcare quality. The administrators of health insurance schemes in synergy with the ministry of health are to meticulously review the operations of the scheme with a view to addressing the factors influencing the utilization of health insurance schemes. Hospitals and healthcare facilities are to be cautioned on the use of substandard drugs for NHIA enrollees considering the effects on their lives. Governments at all levels should create a massive and sustained awareness of health insurance among the population.

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