

# Factors Affecting Utilization of the National Health Insurance Scheme by Federal Civil Servants in Rivers State, Nigeria

INQUIRY: The Journal of Health Care Organization, Provision, and Financing  
Volume 58: 1–8  
© The Author(s) 2021  
Article reuse guidelines:  
sagepub.com/journals-permissions  
DOI: 10.1177/00469580211017626  
journals.sagepub.com/home/inq



Obelebra Adebisi, MPH<sup>1</sup> and Foluke Olukemi Adeniji, FWACP<sup>1</sup> 

## Abstract

The National Health Insurance Scheme (NHIS) of Nigeria was established in 2005. This study assessed the utilization of health care and associated factors amongst the federal civil servants using the NHIS in Rivers state. This was a descriptive cross-sectional study using self-administered questionnaires. Data were collated and analyzed using SPSS version 21.0. A Chi-square test was carried out. The level of Confidence was set at 95%, and the  $P$ -value  $\leq .05$ . Out of a total of 334 respondents, 280 (83.8%) were enrolled for NHIS, 203 (72.5%) utilized the services of the scheme. Most 181 (82.1%) of the respondents who utilized visited the facility at least once in the preceding year. Although, 123 (43.9%) of the respondents made payments at a point of access to health care services, overall there was a reduction in out of pocket payment. Possession of NHIS card, the attitude of health workers, and patients' satisfaction were found to significantly affect utilization  $P \leq .05$ . Regression analysis shows age and income to be a predictor of utilization of the NHIS. Though utilization is high, effort should be made to remove payment at the point of access and improving the harsh attitude of some of the health workers.

## Keywords

utilization, health, NHIS, Federal civil servants

### What do we already know about this topic?

Coverage in Rivers State is only among federal government employee in Rivers State and currently low. The National Health Insurance Scheme (NHIS) which is a social scheme is presently not mandatory although amendments to the Act establishing it has been recommended.

### How does your research contribute to the field?

There is a dearth of literature in this area in Rivers State. This work provides useful insight into factors affecting utilization of services in the NHIS, this will provide useful information for the Rivers State Government the main employer of labor in the State on how to improve utilization.

### What are your research's implications toward theory, practice, or policy?

The State is on the brink of starting its own NHIS, this covers a majority of people in the formal and informal sector. Findings from this study will serve as local research that can inform ways to improve utilization of the NHIS by the populace. Factors such as the pleasant attitude of the health care providers, the possession of the NHIS registration card (sometimes takes up to 6 months), reduction in out-of-pocket spendings, and patients' satisfaction with care received were reported in this study.

## Introduction

Insurance is an indisputable instrument for healthcare funding. It has been utilized by most developed nations in its different structures to subsidize healthcare. It is just of late being applied by poorer developing countries to attend to the obvious issue of deficiencies in healthcare availability and funding which has over the years been financed from public funding.<sup>1</sup>

Healthcare financing alludes to procedures for paying for healthcare expenses. For any economy to grow, it must

<sup>1</sup>Department of Preventive and Social Medicine, Faculty of Clinical Sciences, College of Health Sciences, University of Port Harcourt, Choba, Rivers State, Nigeria

Received 24 October 2020; revised 28 February 2021; revised manuscript accepted 26 April 2021

### Corresponding Author:

Foluke Olukemi Adeniji, Department of Preventive and Social Medicine, Faculty of Clinical Sciences, College of Health Sciences, University of Port Harcourt, Community Medicine, UPTH, Choba, Rivers State 5323, Nigeria. Emails: foluke1@hotmail.com, foluke.adeniji@uniport.edu.ng



Creative Commons Non Commercial CC BY-NC: This article is distributed under the terms of the Creative Commons Attribution-NonCommercial 4.0 License (<https://creativecommons.org/licenses/by-nc/4.0/>) which permits non-commercial use, reproduction and distribution of the work without further permission provided the original work is attributed as specified on the SAGE and Open Access pages (<https://us.sagepub.com/en-us/nam/open-access-at-sage>).

confer adequate funding to health, keeping in mind the end goal of which is to accomplish anticipated levels of health status and economic improvement.<sup>2</sup> There are different types of health insurance; they can be broadly divided into private and public insurance based on the source of funding.<sup>3</sup> In public the funds are paid by the government from general taxes or hypothecated taxes, this source of funding for health care helps to improve 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 consist of non-profit and for-profit plans, and community health insurance schemes. Private coverage, when managed well helps to improve access and equity especially in developing countries, and reduce large out-of-pocket expenses for healthcare.<sup>3</sup> They serve as a useful source of supplementary insurance to provide coverage for health services not covered by the publicly-funded schemes. Poorly planned private health insurance systems have been associated with exacerbating inequalities, the high number of uninsured, and the high cost of out-of-pocket payment.<sup>3</sup> Social health insurance (SHI) is a compulsory scheme that allows the pooling of funds to finance health services, in addition to other sources such as taxes, private health insurance, community insurance, and others.<sup>4</sup> It usually involves defined contribution from the employees, their employers, and government via a payroll deduction system. Overtime the informal sector has been included and contribution here is usually fixed due to difficulties in estimating income. The poor are also not left out as there are special programmes to include them. Under the SHI, the rich pay more than the poor while they receive the same level of care irrespective of their contributions and health status. The funds so realized may be administered as a single or several multiple funds by the public or private sector or a combination of both. SHI helps to provide extra domestic funds, improves health system quality, reduces health inequality, reduces out-of-pocket spending, provides financial risk protection, and encourages the attainment of universal coverage. Social health insurance is often difficult to extend to the other sectors outside the formal one.<sup>4</sup>

National health insurance refers to an insurance scheme that covers the entire population and is usually established by national legislation. It is often mandatory for the citizens and the administration of the health care funds vary from country to country. It may be a public or private health insurance scheme or a combination of both.<sup>5</sup>

Different nations of the world have diverse levels of utilization of health insurance. Available literature shows that utilization levels are high in developed nations but are still low in developing nations including Nigeria.<sup>6</sup> In the United States of America, Private Health Insurance (PHI) is a significant source of health care financing and is responsible for around 35% of aggregate health expenses. Public use represents 44.9% while Out Of Pocket use (OOP) is at 13.5%.<sup>6</sup> There is a tax based method in the United Kingdom

that gives general health care through the nation's National Health Service (NHS) which covers 86% of general health expenses, while PHI represents 2.9% and OOP represents 11.1%.<sup>7</sup>

In Nigeria, health care is financed through tax revenues, health insurance (social and private), subsidies, exceptions, and deferrals, out-of-pocket payment, and sponsorships.<sup>8</sup> The NHIS was established in 1999 by an act of legislation. It commenced operation in 2005 with the workers in the formal sector employed by the federal government. It is social health insurance, but participation was not made mandatory.<sup>9</sup> The National Health Insurance Scheme (NHIS) has created different programs to cover distinctive sections of the general public. Various developing nations have commenced Social Health Insurance (SHI) in the light of the call by the World Health Organization (WHO) to move toward universal coverage.<sup>10</sup>

Studies have shown that around 70% of Nigerians pay OOP for their health-care needs.<sup>11,12</sup> This has prompted the founding of health insurance schemes whose design is to relieve this problem.<sup>13</sup> commonly, insurance is found to build the power of utilization and decrease OOP spending.<sup>14,15</sup>

Research has also revealed that there is low utilization of NHIS in Nigeria<sup>9</sup> due to low coverage across the country, low health-seeking behavior of Nigerians, and the many exclusions in the NHIS benefit package. The underutilization of NHIS service varies from region to region and from state to state in Nigeria. Most of these studies were done in other regions of the country most especially since Rivers state is not yet utilizing the NHIS; this study was done among the federal government staff working in Rivers State who are the only recipients of the scheme since it started over a decade ago. The objective of this study is to assess utilization and identify factors affecting the utilization of the NHIS services by the federal civil servants in River State.

## Methodology

This was a descriptive, cross-sectional study. The study population was all civil servants employed by the federal government, working in Rivers State.

**Inclusion Criteria:** All the staff of the federal civil service commission, who are available at the time of the study, and have been working for at least 6 months.

**Exclusion Criteria:** Casual employees and those who have alternative health insurance.

## Study Area

This study was carried out in Rivers State, in southern Nigeria, located in the eastern part of the Niger Delta on the oceanward extension of the Benue trough. Rivers State has a total area of 11 077 km<sup>2</sup> (4277 mi<sup>2</sup>). Its capital and largest city, Port Harcourt, is economically significant as the center of Nigeria's oil industry. According to census data released

in 2006, the state has a population of 5 198 716, making it the sixth-most populous state in the country.<sup>16</sup>

**Sample size determination:** The sample size was determined by the use of the statistical formula for a descriptive study.<sup>17</sup> A Multi-stage sampling method was used. Stage 1: Selection of Federal ministries, parastatals, and agencies by simple random sampling was done. A sampling frame of all the federal ministries, parastatals, and agencies in Rivers state was obtained from the Federal Bureau of Statistics at the Federal Secretariat. There were 90 federal ministries, parastatals, and agencies in Rivers State, 16 were selected.

**Stage 2:** The total number of Federal Civil Servants in the 16 selected ministries, parastatals, and agencies in stage 1 was 1904. Using the staff population a proportionate allocation to size was carried out to identify the number of respondents in each of the 16 offices.

**Stage 3: Selection of participants:** The nominal roll of each federal ministries, parastatals, and agencies was used as a sampling frame, from which eligible staff was randomly selected from each ministry, parastatals, and agency, using the balloting technique.

## Study Instrument

The questionnaire consisted of open and close-ended questions, section A contained questions on socio-demographic data of the respondents; Section B contained questions on accessibility to Health care facilities; while section C contained questions on Utilization and cost of health care services by those enrolled in the NHIS. The questionnaire was designed by the researchers and written in English.

The questionnaire was checked for face and content validity. It was also pre-tested among 30 staff of a federal government institution. Responses were observed and appropriate amendments were made.

## Data Collection and Analysis

A 1-day training was carried out for 3 research associates who were unemployed graduates. Data collection was carried out for 3 weeks in July 2017. Questionnaires were self-administered, at work, given to the various respondents after informed consent had been obtained. The majority of the respondents filled the questionnaires on-site while others were retrieved from the respondents after 1 week. The questionnaires were then vetted and checked for data completeness. Data was edited, collated, and entered into the 2013 Microsoft Excel Data Sheet, after which it was exported into the International Business Machine (IBM) Statistical Package for Social Sciences (SPSS) version 21.0 statistical software for analysis. The Chi-square test was used to test for association, regression analysis was used to determine predictors of utilization of the NHIS. The level of confidence was set at 95%, and *P* values < .05 were considered to be statistically significant.

**Table 1.** Socio-Demographic Characteristics of Respondents.

Variable	Frequency	Percentage
<b>Age (years)</b>		
≤25	14	4.2
26-35	92	27.5
36-45	140	41.8
46-60	88	26.3
>60	1	0.3
Total	335	100
<b>Gender</b>		
Male	172	51.3
Female	163	48.7
Total	335	100
<b>Educational status</b>		
No formal education	1	0.3
Primary	2	0.6
Secondary	40	11.9
Tertiary	292	87.2
Total	335	100
<b>Marital status</b>		
Single	64	19.1
Married	261	77.9
Divorced/separated	4	1.2
Widowed	6	1.8
Total	335	100
<b>Salary grade level</b>		
Grade 1-6	31	9.2
Grade 7-12	282	84.2
Grade 13-17	22	6.6
Total	335	100
<b>Monthly income (Naira)*</b>		
≤N50 000	50	14.9
N50 001-N100 000	134	40.0
N100 001-N150 000	91	27.2
N150 001-N200 000	41	12.2
>N200 000	19	5.7
Total	335	100

\*360Naira = 1 Dollar.

## Ethical Considerations

Ethical clearance was sought and gotten from the Ethical Review Committee of the University of Port Harcourt. Permission from the relevant authorities in the federal ministries was obtained. The objectives of the study were clearly explained to the participants and informed consent was obtained before administering the questionnaires.

## Results

A total of 335 questionnaires were administered, all were filled, giving a response rate of 100%.

Table 1 summarizes the socio-demographics of respondents. About half 172 (51.3%) were males and 163 (48.7%) were females. A greater percentage of 140 (41.8%) of the

respondents were between 36 and 45 years of age. Most 292 (87.2%) of the respondents had a tertiary level of education. The majority of the respondents 261 (77.9%) were married. At the time of the study, 360 naira was exchanged for a dollar.

Table 2 shows that 203 (72.5%) of the respondents who enrolled for NHIS, utilized the services of the scheme. More than a quarter of these respondents paid at least 2 visits to the NHIS clinic in the preceding year. Nearly two-thirds of the respondents 124 (61.1%) described the attitude of the health workers as friendly. The majority 184 (90.6%) of the respondents who utilized the health care facilities through the NHIS did not pay for hospital consultation to see the physician as they were covered by the scheme. Only 71 (35.0%) of the respondents had ever changed their primary care provider, most of them 31 (43.7%) changed their provider because their place of residence changed. Slightly more than a quarter, 20 (28.2%) changed because of a lack of satisfaction with services provided. Most respondents 183 (65.4%), received a primary level of care while fewer proportions were referred for secondary and tertiary care. The services most frequently utilized were the laboratory and maternal health services (47.9% and 18.6%, respectively). Respondents' preference for government and private health facilities was 107 (52.7%) and 86 (42.4%), respectively.

Table 3 shows that 123 (43.9%) of the respondents who utilized the services of the NHIS scheme reported that they made payments at other points of access to health care services. Out of those that made a payment, most 103 (83.7%) reported paying 10% of the cost of their prescription medication. A fifth, 25 (20.3%) paid for laboratory services not provided under NHIS.

Table 4 shows that the utilization of the NHIS was higher among the age group 36 to 45 years 82 (40.4%) when compared to others. Slightly more females 102 (50.2%) than males also utilized the NHIS. Utilization of the NHIS was significantly associated with ownership of an NHIS card, satisfaction with health care provided, and the friendly attitude of health workers ( $P \leq 0.001$ ).

Table 5 shows that that respondent who were aged 35 years and less, were twice likely to utilize the NHIS than those above 35 years, this observation was statistically significant. Income was found to be a predictor of utilization of the NHIS. Respondents who earn between N51 000 and 100 000, N101 000 and 150 000, and N18 000 and 50 000 were 9, 8, and 7 times more likely to utilize the NHIS than those who earn >N200 000. These differences were observed to be statistically significant  $P \leq .05$

## Discussion

This study has assessed the utilization of healthcare and factors associated with it among federal civil servants. More than two-thirds of the respondents were between the 26 and

**Table 2.** Utilization of Health Care Services by Respondents.

Variable	Frequency	Percentage
Have you been using the NHIS, N=280		
Yes	203	72.5
No	77	27.5
Total	280	100
How many times have you visited the hospital in the past 1 year, N=203		
Once	46	22.7
Twice	53	26.1
Thrice	44	21.7
More than thrice	38	18.7
Not visited in the past 1 year	22	10.8
Total	203	100
Attitude of health workers during visit, N=203		
Friendly	124	61.1
Harsh	39	19.2
Sympathetic	11	5.4
Patient and understanding	21	10.3
No response	8	3.9
Total	203	100
Payment for hospital consultation bills, N=203		
Covered by NHIS	184	90.6
Others	2	1.0
Used personal savings	10	4.9
No response	7	3.4
Total	203	100
Ever changed primary care provider, N=203		
Yes	71	35.0
No	132	65.0
Total	203	100
Reason for changing primary care provider, N=71		
Unsatisfied with services	20	28.2
Changed place of residence	31	43.7
Distant from place of residence	15	21.1
Others	5	7.0
Total	71	100
Level of care used under the scheme (multiple response)		
Primary	183	65.4
Secondary	60	21.4
Tertiary	21	7.5
Services used under the scheme (multiple responses)		
Maternal health service	52	18.6
Laboratory service	134	47.9
Radiology service	23	8.2
Dental service	14	5.0
Ophthalmology service	6	2.1
Surgical service	15	5.4
Others	10	3.6
Preferred health facility for NHIS		
Government hospital	107	52.7
Private hospital	86	42.4
None	10	4.9
Total	203	100

**Table 3.** Services under the NHIS Scheme and Amount Paid.

Variable	No of persons who paid for service (%)*	Average amount paid	Standard deviation
Did you pay for any service?			
No	157(56.1)		
Yes	123 (43.9)		
Services paid for			
Records	6 (4.9)	N475.00	N343.15
Lab service	25 (20.3)	N600.00	N308.22
Drugs	103 (83.7)	N692.43	N876.06
Radiological service	1 (0.8)	N35 000	–

\*Multiple responses.

**Table 4.** Relationship between Factors (Socio-Economic and Others) and Utilization of Health Insurance.

Variable	Utilization of NHIS		$\chi^2$	df	P-value
	Yes (%)	No (%)			
Age group (years)					
18-25	11 (5.4)	2 (2.6)	1.576	4	.813
26-35	50 (24.6)	18 (23.4)			
36-45	82 (40.4)	34 (44.2)			
46-60	59 (29.1)	23 (29.9)			
61 and above	1 (0.5)	0 (0.0)			
Gender					
Male	101 (49.8)	37 (48.1)	0.065	1	.799
Female	102 (50.2)	40 (57.9)			
Educational status					
No formal education	1 (0.5)	0 (0.0)	2.442	3	.486
Primary	1 (0.5)	1 (1.3)			
Secondary	30 (14.8)	7 (9.1)			
Tertiary	171 (84.2)	69 (89.6)			
Marital status					
Single	35 (17.2)	13 (16.9)	0.119	3	.989
Married	161 (79.3)	61 (79.2)			
Separate/divorced	3 (1.5)	1 (1.3)			
Widowed	4 (2.0)	2 (2.6)			
Monthly income					
N18 000-N50 000	32 (15.8)	10 (13.0)	4.87	4	.301
N51 000-N100 000	87 (42.9)	31 (40.3)			
N101 000-N150 000	62 (30.5)	20 (26.0)			
N151 000-N200 000	16 (7.9)	12 (15.6)			
>N200 000	6 (3.0)	4 (5.2)			
Duration of enrollment					
Less than year	7 (3.4)	6 (7.8)	8.577	4	.073
1-5 years	82 (40.4)	32 (41.6)			
6-10 years	84 (41.4)	21 (27.3)			
Over 10 years	22 (10.8)	11 (14.3)			
Can't remember	8 (3.9)	7 (9.1)			
Ownership of NHIS card					
Yes	160 (78.8)	36 (46.8)	27.331	1	<.001*
No	43 (21.2)	41 (53.2)			
Proximity to NHIS facility					
Live close to facility	154 (75.9)	56 (72.7)	0.293	1	.589
Live far from facility	49 (24.1)	21 (27.3)			

(continued)



**Table 4. (continued)**

Variable	Utilization of NHIS		$\chi^2$	df	P-value
	Yes (%)	No (%)			
Satisfaction with care					
Satisfied	114 (56.4)	12 (17.6)	30.754	1	<.001*
Not satisfied	88 (43.6)	56 (82.4)			
Service is time wasting					
Yes	103 (51.0)	39 (57.4)	0.826	1	.363
No	99 (49.0)	29 (42.6)			
Promptness of attention					
Given prompt attention	104 (51.5)	27 (39.7)	2.826	1	.093
Not given prompt attention	98 (48.5)	41 (60.3)			
Attitude of health care workers					
Friendly	124 (61.1)	16 (20.8)	95.341	4	<.001*
Harsh	39 (19.2)	16 (20.8)			
Sympathetic	11 (5.4)	0 (0.0)			
Patient/understanding	21 (10.3)	6 (7.8)			
No response	8 (3.9)	39 (50.0)			

\*Statistically significant  $P \leq .05$ .

**Table 5. Regression Analysis for Socio-Demographic Predictors of Utilization of NHIS among Respondents.**

Variables	Odds ratio	95% CI		P-value
		Lower Limit	Upper Limit	
Gender				
Male	0.683	0.325	1.435	.314
Female	1			
Age group				
$\leq 35$ years	2.011	1.076	3.76	.029*
$> 35$ years	1			
Education				
No tertiary education	0.318	0.094	1.081	.067
Tertiary	1			
Marital status				
Married	1.178	0.587	2.362	.645
Not married	1			
Monthly income				
N18 000-50 000	6.622	1.615	27.149	.009*
N51 000-100 000	9.018	2.822	28.823	<.001*
N101 000-150 000	8.61	2.505	29.593	.001*
N151 000-200 000	1.436	0.443	4.654	.546
$> N200 000$	1			

\*Statistically significant  $P \leq .05$ .

45 years age range This is similar to a study in southwest Nigeria where about two-thirds of the respondents belong to the age range of 24 to 45.<sup>15</sup> The study also revealed that a majority of the respondents were married indicating the possibility of an increase in the number of people demanding for health care via the NHIS as married beneficiaries are allowed to register 5 dependents inclusive of the spouse. Most of the respondents had tertiary education, which was similar to

findings from another study.<sup>18</sup> This may not be unconnected to the urban location of this and index studies.

Findings from this study revealed that the proportion of people utilizing the NHIS among respondents was high. This indicates a high level of acceptance of the scheme among the respondents. Similar findings of a high rate of utilization of the NHIS were reported among formal sector workers in Nigeria.<sup>19,20</sup> This may not be unconnected with the drive by

the federal government in recent times to get their workers enrolled in the scheme and the delay in the onset of pay-roll deduction from the workers while the government funds the scheme. This shows a high departure from when the scheme first started and utilization was reported as poor among federal government employees even though their awareness of the scheme was rated fair.<sup>21</sup>

Our study also revealed that females utilized healthcare services under the NHIS more than males; these findings can be attributed to the differences in the health needs between males and females. This is in agreement with studies in the USA and Nigeria which noted gender as one of the most influential variables affecting the use of the health insurance scheme services, stating that women have higher levels of distress and therefore have greater need of healthcare services; hence they make more use of the health care services.<sup>20,22</sup> This current study indicated no significant association between socio-demographic characteristics such as age, level of education, marital status, with the utilization of the NHIS although previous studies in Nigeria reported that level of education, sex, and income<sup>20</sup> were associated with the NHIS utilization.<sup>23</sup> In this study more than half of the respondents said the health personnel were friendly, the attitude of health care workers to the patients was found to be significant and affects utilization this is in agreement with studies in the northern part of the country on the attitudes of Nigerian civil servants toward the National Health Insurance Scheme which showed under-utilization of services by beneficiaries.<sup>24</sup>

Patients' satisfaction with care given under the NHIS was found to affect utilization in this study, more than half of the patients were satisfied with services rendered this is in agreement with a study by a federal medical center in northern Nigeria which revealed a high level of satisfaction with services accessed under the National Health Insurance Scheme. These findings may be due to improvement in the management of the NHIS and services rendered by the health care workers over the years.<sup>25</sup>

The result of this study also revealed that ownership of the NHIS registration card which indicates enrollment affected utilization, those who had their card tended to use the NHIS services more than those who did not. This correlates with a study in Ghana where it was found that on average individuals enrolled in the insurance scheme are significantly more likely to obtain prescriptions, visit clinics and seek formal health care when sick.<sup>26</sup> At least a quarter of the respondents in this study have at least 2 visits to the NHIS clinic in the year preceding the study and a majority reported that their bills were taken care of by the NHIS hence out of pocket payment was reduced, this is similar to reports from other studies.<sup>4,9</sup> NHIS is a social insurance scheme and is expected to help reduce out of pocket spending.<sup>4,9</sup> Most of the respondents made a co-payment for drugs, It is 10% of the total cost of drugs dispensed per prescription following the NHIS drug price list.<sup>27</sup> This also

serves to prevent abuse of the scheme. A study in Southeastern Nigeria found that insured civil servants have comparable average health care and total health care costs per visit compared with the non-insured civil servants, non-insured federal civil servants were found to spend catastrophically for health services as much as their insured counterparts, though health insurance is supposed to reduce catastrophic health expenditure for households,<sup>28</sup> studies in Zambia reported that health insurance does not provide financial protection against the risk of catastrophic payments, indeed, insurance is found to increase this risk.<sup>14,29</sup> This may be because some of the services are on the exclusion list and clients have to pay OOP if they need those services. This is contrary to the aim of the scheme, which seeks to provide affordable health care to the citizens.

Income and age were found to predict the use of the NHIS in this study; this is similar to findings from another study among women where age and income were reported to predict use of the NHIS.<sup>30</sup> This is not surprising because, in developing countries nations where income is little for most workers, social health insurance offers a means to obtain care that would otherwise have been exorbitant.<sup>21</sup>

### Study Limitations

Recall bias was a possibility because utilization was measured in the year preceding the study. Cross-sectional studies cannot establish a causal relationship.

### Conclusion

This study has revealed that there is a high rate of utilization of the NHIS among respondents that were enrolled and a reduction in out of pocket payment for health care under the NHIS. The attitude of the health care providers, the possession of the NHIS registration card, and patients' satisfaction with care received were found to significantly affect NHIS utilization. Regression analysis identified income and age as predictors of utilization of the NHIS. This high utilization reflects an acceptance of the scheme by the federal workers. Policymakers should likewise encourage the uptake of the NHIS by other sectors of the society, encourage factors associated with utilization, since the NHIS serves to augment budgetary provision for health and reduce out of pocket payments. For low income workers government should enact policies that will provide incentives in form of removal or reduction of point of access payments.

### Acknowledgments

All the respondents and data collectors are appreciated.

### Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

## Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

## Ethical Considerations

Ethical clearance was gotten from the University of Port Harcourt Ethics Committee. Permission from the relevant authorities in the federal ministries was obtained and informed consent gotten from participants before administering the questionnaires.

## ORCID iD

Foluke Olukemi Adeniji  <https://orcid.org/0000-0001-6115-8280>

## References

- Adibe MO, Udeogaranya PO, Ubaka CM. Awareness of National Health Insurance Scheme (NHIS) activities among employees of a Nigerian University. *Int J Drug Dev Res.* 2011;3(4):78-85.
- Agbatogun KK, Taiwo AS. Determinants of health expenditure in Nigeria. *J Res Nat Dev.* 2010;8(2):1-9.
- Sekhri N, Savedoff W. *Private Health Insurance: Implications for Developing Countries.* WHO Discussion Paper; WHO Geneva; 2004.
- Doetinchem O, Carrin G, Evans D. Thinking of introducing social health insurance? Ten questions. World Health Report Background Paper N0 26; WHO Geneva; 2010.
- Wikipedia. National health insurance. Accessed January 31, 2021. [http://en.wikipedia.org/wiki/National\\_health\\_insurance](http://en.wikipedia.org/wiki/National_health_insurance)
- Smith S, Newhouse JP, Freeland M. Income, insurance, and technology: why does health spending outpace economic growth? *Health Affairs.* 2009;28(5):1276-1284.
- Boyle S, Appleby J, Harrison A. A Rapid View of Access to Care. The King's Fund. Accessed September 3, 2017. [www.kingsfund.org.uk/current\\_projects/gp\\_inquiry/dimensions\\_of\\_care/access\\_to\\_care.html](http://www.kingsfund.org.uk/current_projects/gp_inquiry/dimensions_of_care/access_to_care.html)
- Olakunde BO. Public health care financing in Nigeria: which way forward? *Ann Nigerian Med.* 2012;6:4-10.
- Adeniji F. National Health Insurance Scheme in Nigeria; progress towards universal coverage. *Asian J Med Health.* 2017;3(4):1-2.
- World Health Organization. *World Health Report: Health Systems Financing, the Path to Universal Coverage.* World Health Organization; 2010.
- Agba MS. Perceived impact of the National Health Insurance (NHIS) among registered staff in federal Polytechnic, Idah, Kogi State Nigeria. *Std Soc Sci.* 2010;1(1):44-49.
- Agba A, Ushie E, Osuchukwu N. National Health Insurance Scheme (NHIS) and employees' access to healthcare services in Cross River State, Nigeria. *Glob J Hum Soc Sci.* 2010;10:9-16.
- Coovadia H, Jewkes R, Barron P, Sanders D, McIntyre D. The health and health system of South Africa: historical roots of current public health challenges. *Lancet.* 2009;374(9692):817-834.
- Ekmann B. Catastrophic health payments and health insurance: some counterintuitive evidence from one low-income country. *Health Pol.* 2007;83:304-313.
- Sanusi R, Awe AT. Perception of National Health Insurance Scheme (NHIS) by health care consumer in Oyo State, Nigeria. *Pak J Soc Sci.* 2009;6:48-53.
- Nigeria Administrative division. City population. Accessed 3 September 2017. [www.citypopulation.de/php/nigeria-admin.php](http://www.citypopulation.de/php/nigeria-admin.php) 201
- Bluman AG. *Elementary Statistics: A Step by Step Approach.* 7th ed. Mcgraw Hill Companies; 2008.
- Abiola AO, Ladi-Akinyemi TW, Oyeleye OA, Oyeleke GK, Olowoselu OI, Abdulkareem AT. Knowledge and utilisation of National Health Insurance Scheme among adult patients attending a tertiary health facility in Lagos State, South-Western Nigeria. *Afr J Prim Heal Care Fam Med.* 2019;11(1):2018.
- Yusuf A, Jibo AM, Abubakar S, Grema BA, Gajida AU, Michael GC. Assessment of satisfaction and utilization of health-care services by National Health Insurance Scheme enrollees at Aminu Kano Teaching Hospital, Kano, Nigeria. *Pyramid J Med.* 2018;1(1):20.
- Nwankwor Aneke C, Henry-Arize I, Okoronkwo I. Perceived utilization of National Health Insurance among Staff of University of Nigeria Teaching Hospital (UNTH), Ituku – Ozalla, Enugu, Southeast Nigeria. *Int J Med Health Dev.* 2021; 23(2):255.
- Ilochonwu NA, Adedigba M. Awareness and utilisation of national health insurance scheme by healthcare workers in southwest Nigeria. *Afr J Oral Health.* 2017;7(1):24.
- Charles EM. Health Services Utilization in Central Virginia: a comparison of estimated and observed rates. *Am J Pub Health.* 2001;60(9):223-245
- Oladipo JA. Utilization of health care services in rural and urban areas: a determinant factor in planning and managing health care delivery systems. *Afr Health Sci.* 2014;14(2):322-333.
- Hamza A. The Knowledge, Opinion and Attitude of Nigerian Civil Servants toward the National Health Insurance Scheme: The Case of Sokoto State. Unpublished MPH Thesis, Ahmadu Bello University, Zaria; 2006.
- Daramola OE, Maduka WE, Adeniran A, Akande TM. Evaluation of patients' satisfaction with services accessed under the National Health Insurance Scheme at a tertiary health facility in north central, Nigeria. *J Commun Med Prim Healthc.* 2017;29(1):11-17.
- Blanchet NJ, Fink G, Osei-Akoto I. The effect of Ghana's National Health Insurance Scheme on health care utilization. *Ghana Med J.* 2012;46:2.
- National Health Insurance Scheme. *National Health Insurance Scheme Operational Guideline.* National Headquarters; 2005: 9-11.
- Ujunwa F, Onwujekwe O, Chinawa J. Health services utilization and costs of the insured and uninsured under the formal sector social health insurance scheme in Enugu metropolis South East Nigeria. *Niger J Clin Pract.* 2014;17(3):331-335.
- Nguyen HT, Rajkotia Y, Wang H. The financial protection effect of Ghana national health insurance scheme: evidence from a study in two rural districts. *Int J Equity Health.* 2011;1. 0:4.
- Orji AE, Nwabueze AS, Nwaeju IK, et al. Predictors of payment methods for health care, perception and use of the National Health Insurance Scheme among pregnant women in Nigeria. *Obstet Gynecol Res.* 2020;3:207-219.