

Original Research Article

National Health Insurance Scheme and Universal health coverage among formal sector employees in Ilorin, Nigeria.

ABSTRACT

AIMS

NIGERIA IMPLEMENTED A PREPAYMENT SCHEME FOR HEALTH OVER A DECADE AGO WITH THE AIM OF ACHIEVING UNIVERSAL HEALTH COVERAGE. THOUGH THE FORMAL SECTORS EMPLOYEES IN THE FEDERAL CIVIL SERVICE ARE THE FOCUS, UNIVERSAL HEALTH COVERAGE HAS NOT BEEN ACHIEVED AMONGST THEM. THIS STUDY AIMED TO ASSESS THE AWARENESS OF AND ANNUAL COVERAGE RATE OF THE SCHEME AMONG EMPLOYEES IN THE FORMAL SECTOR IN ILORIN, NIGERIA. THIS IS A FOLLOW-UP STUDY TO A PREVIOUS ONE CARRIED OUT AMONG THE SAME POPULATION THREE YEARS EARLIER.

STUDY DESIGN: A CROSS-SECTIONAL SURVEY.

PLACE AND DURATION OF STUDY: ILORIN, KWARA STATE NIGERIA. 5 WEEKS, JULY 24 TO AUGUST 28 2015

METHODOLOGY: STUDY WAS CARRIED OUT AMONG 507 FORMAL SECTOR EMPLOYEES IN ILORIN METROPOLIS. THE RESPONDENTS WERE CHOSEN USING STRATIFIED RANDOM SAMPLING IN 2 STAGES AMONG EMPLOYEES IN THE FEDERAL, STATE AND LOCAL GOVERNMENT ESTABLISHMENTS. DATA WAS COLLECTED WITH THE AID OF A SEMI-STRUCTURED, INTERVIEWER-ADMINISTERED QUESTIONNAIRE. ANALYSIS WAS CARRIED OUT USING SPSS STATISTICAL PACKAGE VERSION 17. CHI-SQUARE ANALYSIS WAS USED TO ESTABLISH ASSOCIATIONS WHILE LOGISTIC REGRESSION ANALYSIS WAS USED FOR ESTIMATION OF PREDICTORS OF AWARENESS ABOUT THE COVERAGE AND

ENROLMENTS IN THE SCHEME. LEVEL OF STATISTICAL SIGNIFICANCE WAS SET AT P VALUE OF <0.05.

RESULTS: AWARENESS ABOUT THE SCHEME WAS HIGHER THAN IT WAS IN THE PREVIOUS STUDY (85.4% VS 78.9%). WORKING IN FEDERAL AND STATE GOVERNMENTS ESTABLISHMENTS WERE PREDICTOR OF AWARENESS OF THE SCHEME, (OR = 7.75, CI = 1.749-10.152, P = 0.001) AND (OR = 2.544, CI = 1.212-5.340, P = 0.014) RESPECTIVELY. POPULATION COVERAGE WAS BETTER THAN IT WAS IN THE PREVIOUS STUDY, (89.8% VS 63.3%).

CONCLUSION: THE PRESENT ANNUAL POPULATION COVERAGE RATE OF THE SCHEME IS TOO SLOW. THERE IS A NEED FOR STAKEHOLDERS TO ADDRESS THIS FINDING AS A CHALLENGE AND STRATEGIZE MODALITIES FOR ENROLLING THOSE WHO ARE CURRENTLY NOT UNDER THE SCHEME.

Keywords: *Health insurance, Annual coverage rate, out-of-pocket, formal sector, awareness, enrolees, universal health coverage*

1. INTRODUCTION

Prepayment schemes for health in its diverse forms are quite popular in contemporary times. It is promoted by global health institutions, organizations and individuals, as the most viable method of financing. It can also guarantee that health care services are accessed based on need and not on the ability to pay especially where it concerns the less privileged and vulnerable groups in the society. Prepayment schemes to a large extent, is capable of the desire to making health care a basic human right. Except in very rare climes as it happens in some countries like Singapore [1], self-reliant methods of paying for health care services will almost always result in untoward effects especially for the poor in whom midst morbid states and poverty are more common [2, 3]. The history of prepayment methods for health care dated back to well over a century ago in Western Europe particularly in Germany during the period of rapid industrial growth. Industrial workers organized sickness funds which was based on mutual support and where contributions were based on income and access to care was based on need. This concept of mutual support for health care need has

25 evolved over time to the mature state it is today in developed economies. Having realized the benefits
 26 of the concept, western nations have along the line gave it the necessary supports to formalize it [4].
 27 Evidences abound that prepayment schemes for health in developed countries evolved over a long
 28 period of time and to attain general acceptability. However, there are proofs that time taken to enroll a
 29 large population of people could be shorter especially in countries that are just embracing and making
 30 efforts to implement and expand the scheme [5].

31 Nigeria is an entity with states as the federating units, and similar to countries like the USA and
 32 Canada. The country has sub-national levels of governments with constitutional autonomy in certain
 33 sectors including health [6]. Concerned about the poor health indices in the country, [7, 8] the
 34 government of Nigeria established the National Health Insurance Scheme (NHIS) in 1995. However, it
 35 only became operational in 2005. The Scheme has an overall objective to secure universal health
 36 coverage (UHC) and access to adequate and affordable health care. It purposed to achieve its
 37 mandate within a period of ten years from its inception (2005-2015). Presently, the Act that
 38 established the scheme makes it voluntary. Though, at almost two decades of operation, the level of
 39 coverage is below ten percent of its intended target population of about 178 million people. The
 40 enrollees have majorly been employees in the formal sector, while the larger informal sector populace
 41 remains disenfranchised. Majority of the people in Nigeria therefore still pay out of pocket for their
 42 health care needs [9]. This is despite an encouraging disposition to prepayment schemes in the
 43 country, similar to what obtains in other places [10].

44 The poor performance of the NHIS have been partly ascribed to low awareness of the scheme among
 45 the expected beneficiaries [11-13]. Factors such as age, marital status, educational attainment and
 46 place of residence are some of the demographic factors that are known to be associated with
 47 awareness about, and enrolment in prepayment schemes [14-16]. In a study by Nyagero et al (2012),
 48 improving level of awareness about health insurance scheme through the radio and other forms of
 49 information sharing could encourage enrolment [17]. Strong opposition from labor unions and sub-
 50 national governments especially in Nigeria were some of the reasons for the poor performance [18].
 51 To surmount this, recently the Council on Health in Nigeria approved the devolution of the scheme to
 52 the sub-national governments at the states level, with technical oversight from the NHIS at the
 53 national level [19]. Persistent advocacy and campaigns about the scheme among major stakeholders

54 have been cited as some of the reasons for successful health insurance programs in many countries
 55 in Asia and Africa [20].
 56 A preliminary study by the authors was conducted three years earlier among the formal sector in
 57 Ilorin, Nigeria. It studied awareness and coverage of the NHIS among the formal sector workers in
 58 Ilorin metropolis. Though the study reported high awareness of the NHIS among the workers, but only
 59 13.5% of them were enrolled in the scheme [21]. It is important to measure the rate of population
 60 coverage for a scheme that sets out to achieve universal coverage within a decade of its
 61 establishment. This will enable stakeholders to gauge the possibility of achieving the set objective.
 62 This study was embarked upon as a follow up study to assess the annual rate of coverage of the
 63 scheme among formal sector employees. Findings will be useful in identifying gaps for necessary
 64 action by stakeholders.

65 **2. MATERIAL AND METHODS**

67 **Study area.** This study was carried out in Ilorin, Kwara state Nigeria. Ilorin is the capital city of
 68 Kwara State Nigeria with an estimated population of 2,365,353 and a landmass of about 34,467.54
 69 square kilometers [22]. The city is 306 kilometers from the coastal commercial city of Lagos, and 500
 70 kilometers from Abuja, the political and administrative capital of Nigeria. The public formal sector
 71 institutions in the city were the local government service commission, state ministries and the federal
 72 civil service establishments.

73 **2.2 Study population.** These were the formal sector employees in the employment of the federal
 74 government (Federal Secretariat), state government (State Secretariat) and the local government
 75 (Ilorin East Local Government, Oke-Oyi) secretariats.

76 **2.3 Study Participants.** Only adults aged 18 years and above, whose place of work was in any of
 77 the three secretariats and who consented to participate were eligible for the study.

78 **2.4 Study design.** This is a cross-sectional, descriptive survey carried out between October and
 79 November 2015. It is a follow-up study to initial piloted cross-sectional study three years earlier [21].

80 **2.5 Sample size.** Sample size was estimated using the result of a previous study where the
 81 proportion of those who were current beneficiaries of the prepayment scheme under the NHIS was

13.5% [21], with a power of 80% and a confidence level of 95%. This yields a sample size of 179, and adjusting for a 10% non - response rate, a total of 198 respondents were estimated for the study.

2.6 Sampling Technique: In a two stage sampling procedure, stratified sampling technique was used to select 507 respondents proportionally drawn from workers in federal (181), state (242) and local (84) government establishments in the city of Ilorin and environs. Using a systematic sampling technique the respondents were recruited into the study until the calculated sample size was achieved.

2.7 Data collection: A semi-structured, pre-tested, interviewer-administered questionnaire was used to collect the data. The questionnaire was developed based on the study objectives and review of relevant literature. The data collecting tool had been previously validated [21]. Ethical approval to conduct the study was obtained from the Bowen University Teaching Hospital Research Ethics Committee at Ogbomoso, Oyo state. Informed verbal consent was also obtained from all participants before the interviews. Participants who were not aware about a prepayment scheme for health were given the basics about a prepayment scheme for health [23]. Questions from the respondents about the research were also entertained. The data collection was completed in a period of 4 weeks.

2.8 Data analysis. The data was analysed using SPSS version 17. Frequency tables were generated. Chi-square test was used for categorical data to test associations between selected socio-demographic characteristics and awareness of the NHIS, while logistic regression model was used to determine predictors of awareness of the NHIS. Only variables associated with a p value <0.10 in bivariate analyses were considered eligible for inclusion in logistic regression analyses. Level of statistical significance was set at $p < 0.05$.

3. RESULTS AND DISCUSSION

3.1 Socio-demographic characteristics of respondents

Almost there – quarter 65.7% (333/507) of the respondents were within the age range 30-49 with mean age of 37.8 ± 9.6 years. Males were more than half of the total number of respondents 55.8% (283/507), while married people and those who attained tertiary education status predominate 79.7% (404/507) and 68.4% (346/507) respectively. Above half of the respondents were of the Islamic faith 55.4% (281/507) while majority were of the Yoruba ethnic group 90.1% (457/507) (Table 1).

113 **Table 1. Socio-demographic Characteristics of Participants**

Socio-demographic Characteristics (N=507)	Frequency	Percentage
Age		
≤ 29	99	19.5
30-39	217	42.8
40-49	116	22.9
≥50	75	14.8
<i>Mean Age (std. dev.)</i>	37.8±9.57	
Sex		
Male	283	55.8
Female	224	44.2
Marital status		
Married	404	79.7
Single	88	17.4
Others*	15	3.0
Religion		
Christianity	221	43.6
Islam	281	55.4
Traditional	5	1.0
Ethnicity		
Yoruba	457	90.1
Hausa/Fulani	21	4.2
Others [‡]	29	5.7

Educational status		
Primary	9	1.8
Secondary	42	8.3
University	346	68.4
Others	109	21.5

114 Others* Separated, divorced, widow, widower

115 Others[‡] Ibo

116 3.2 Mode of payment for health care, awareness and utilization of health insurance

117 Only about one-fifth of the respondents 21.1% (107/507) were enrolled in a prepayment scheme for
 118 health. Majority, 85.4% (433/507) had at one time or the other heard about the NHIS, electronic
 119 sources such as the radio and the TV were cited, however, the mostly cited source of first information
 120 about the NHIS was through family members and friends in 42.9% (186/433). Of those who have
 121 heard about the NHIS, less than half, 45.3% (196/433) were enrolled in any form of prepayment
 122 scheme for health. Out of this, majority, 89.8% (176/196) were enrolled on NHIS and most 64.2%
 123 (113/176) were public employees in the federal civil service. (Table 2).

124 **Table 2. Mode of payment for health care, awareness and utilization of health insurance.**

Variable	Frequency	Percentage
Method of payment for health care costs		
Out-of-pocket	347	68.4
Upfront/prepayment method	107	21.1
Other forms of payment	33	6.3
Declined response	20	3.9
Ever heard about the NHIS		
Yes	433	85.4

No	74	14.6
First Source of information about the NHIS (N =433)		
Radio/ TV	170	39.3
Print media	77	17.8
Family and friends	186	42.9
Health insurance enrolment status		
Yes	196	45.3
No	237	54.7
Type of health insurance (N=196)		
NHIS	176	89.8
Private HI	14	7.1
Others	6	3.1
Place of work for NHIS (N=176)		
LGA	8	4.5
State	55	31.3
Federal	113	64.2

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3.3 General assessment of health service components under the scheme

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Table 3 shows that generally, opinion of the people about the Scheme was highly encouraging, as

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they agreed that it was better than OOP and that it would minimize financial hardship among other

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desired attributes.

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132 **Table 3. General assessment of health service components under the scheme (N = 196)**

Opinion about the NHIS				
	Opinion	Agree (%)	Disagree (%)	Don't Know (%)
a	It is better than OOP (n = 486)	88.1	5.8	6.2
b	Minimize financial hardship (n = 487)	89.9	4.9	5.1
c	Will encourage others (n = 478)	89.7	5.2	5.0
d	Enhance access to health care (n = 486)	89.1	6.8	4.1
e	A good idea (n = 488)	93.9	3.5	2.7

133

134 3.4 Respondents Awareness about NHIS and Socio-Demographic Characteristics

135 Table 4 describes the relationship between selected socio-demographic characteristics and
 136 awareness about the NHIS. Marital and educational statuses and type of employer were significantly
 137 associated with awareness about the NHIS. Those who were single, had tertiary education, and work
 138 with the federal government were more aware about the NHIS than others ($\chi^2 = 8.012$, $P = 0.02$), (χ^2
 139 $= 42.188$, $P = 0.000$) and ($\chi^2 = 17.944$, $P = 0.000$) respectively. Age and sex were not significantly
 140 associated with awareness of the NHIS.

141 **Table 4. Respondents Awareness about NHIS and Socio-Demographic Characteristics**

Variable	Awareness about the NHIS				
	Not aware n (%)	Aware n (%)	Total	χ^2	P-value
Age					
<30	18(18.2)	81(81.8)	99		
30-39	27(12.4)	190(87.6)	217	2.885	0.41
40-49	20(17.2)	96(82.8)	116		
50+	9(12.0)	66(88.0)	75		
Sex					

Male	43(15.2)	240(84.8)	283	0.184	0.67
Female	31(13.8)	193(86.2)	224		
Marital Status					
Married	21(23.9)	67(76.1)	88	8.012	0.02
Single	50(12.4)	354(87.6)	404		
Others*	3(20.0)	12(80.0)	15		
Educational status					
Primary/secondary	23(45.1)	28(54.9)	51	42.188	0.000
Post - secondary	39(11.3)	307(88.7)	346		
Vocational schools	12(11.0)	97(89.0)	109		
Place of work					
LGA	23(27.4)	61(72.6)	84	17.944	0.000
State	37(15.3)	205(84.7)	242		
Federal	14(7.7)	167(92.3)	181		

Others* Separated, divorced, widow, widower

3.5 Predictors of awareness of NHIS

Logistic regression analysis was used to predict awareness about the NHIS among respondents. Those who attained primary/secondary education were significantly less likely to be aware than those who attained much higher education, (OR = 0.105, CI = 0.039 - 0.282, $P = 0.000$), those who were employees in the federal civil service were more than seven times to be aware about the NHIS than those who worked in the LGAs, (OR = 7.753, CI = 1.749-10.152, $P = 0.001$), while those in the state were more than two times to be aware than those in the LGAs, (OR = 2.544, CI = 1.212 - 5.340, $P = 0.01$). In this study, marital status was not a predictor of awareness about the NHIS (Table 5).

156 **Table 5. Logistics regression analysis predicting awareness of NHIS**

Variable	Odds ratio	95% CI	P-value
Age			
<30(ref)	1.000		
30-39	0.711	0.209-2.421	0.59
40-49	0.550	0.150-2.016	0.37
50+	0.678	0.169-2.722	0.58
Sex			
Male(ref)	1.000		
Female	1.468	0.738-2.920	0.27
Marital status			
Married	0.189	0.012 -2.969	0.24
Singles	0.523	0.042-6.570	0.62
Others(ref)	1.000		
Educational status			
Primary/ Secondary	0.105	0.039- 0.282	0.000
Post-Secondary	1.010	0.442-2.306	0.98
Others(ref)	1.000		
Work location			
LGA(ref)	1.000		
State	2.544	1.212-5.340	0.01
Federal	7.753	1.749-10.152	0.001

157 *Hosmer-Lemeshow goodness of fit test: $\chi^2 = 9.607$, df = 8, $P = 0.19$

158 **4. Discussion**

159 Majorly, the socio-demographic pattern as seen in this study is similar to the national pattern [22, 24].
 160 The proportion of the respondents who claimed to be in a prepayment scheme was about three times
 161 higher than the national average [90]. This finding is in order, as the study population were people
 162 employed in the formal sector which is currently the only segment of the population that is the focus of
 163 the Scheme [18, 25]. Similarly, the proportion of the respondents who have at one time or the other

heard about the scheme, was far above the national average. These findings are also corroborated in a previous study [21].

Enrolment in prepayment schemes have been ascribed to among other factors a good awareness [14, 16]. The reported major source of information about the NHIS for the first time was the radio/TV. This is unexpected as these are the most common electronic sources of information in Nigeria as confirmed in a national survey [24]. More than a few sources of information may be necessary to improve awareness about prepayment scheme for health. Respondents in this study cited other sources of information which was mainly through family, friends and close associates. In a previous study by Nyagero and colleagues in Kenya, multiple sources of information was cited as an effective strategy to improving awareness about prepayment schemes for health and thus to enhance the possibility of a buy in and enrolment of potential beneficiaries [17]. A larger proportion of the respondents who have heard about the NHIS were not yet enrolled under the scheme. This is despite the privilege of been in the formal sector of which the attention of the Scheme is currently focused. The yet to enrol were mainly those in the employment of the LGA and the state whose employer (state) is yet to buy into the scheme [18]. This also included some of the federal employees who have not been enrolled.

This study established that of those who were currently enrolled under a health insurance scheme, less than one-fifth were enrolees in any other form of health insurance outside of the NHIS. This is an indication that though the NHIS has a poor coverage in the populace (formal and informal sector), and even much more, the coverage of the formal sector for which its focus is paramount presently is as well not impressive. It is important to note that more than two-fifths of those who claimed to be enrolees under the NHIS were federal civil service employees. This confirms findings from other studies that presently, enrolment under the NHIS is mainly limited to formal sector employees of the federal civil service [9].

Currently, available evidence indicates that well over two-thirds of Nigerian populace is below poverty line [7, 26]. As a result it is logical that the likelihood of those who were not enrolees under a relatively cheaper health insurance scheme as it is available under the NHIS to enrol in a more expensive

private health insurance policy would be quite low. Consequently, and as it has shown in this present study, majority of the people will be left with no other option than to pay for healthcare services through OOP. Previous studies and reports have confirmed that OOP is the major means of funding health care in Nigeria. The OOP is associated with negative impacts summed up in the prevalent poor health outcomes in countries where it is the predominant method of financing health care, this includes Nigeria [7, 8, 25].

Generally, respondents had good disposition to the idea of prepayment schemes as it was expressed in this study. This pattern has been the trend in previous studies [10, 11, 18, 27]. The favourable disposition to prepayment schemes among respondents has been attributed to risk aversion tendencies and thus, people would as much as possible avoid unpleasant experiences usually associated with other methods of financing health care outside of prepayment schemes. However, despite favourable disposition of the people towards prepayment schemes for health, the rate of coverage is slow and the current level of population coverage in Nigeria is quite poor. In a previous study by Adewole et al., (2015) among the same study population, the proportion of those who were enrollees under the NHIS was over two-thirds (63.3%) [21], while it was over four-fifths (89.8%) among same study population in this present study. This is inferred to an annual coverage rate of less than ten percent (8.8%). With the current estimated population of 178 million in Nigeria, and an annual population growth of 2.7%, [7], it requires an annual population coverage of close to twenty million, that is, 11.2% annually, assuming that the current population remains static, to achieve a universal health coverage in the next decade. This is an enormous task for a scheme that has not been able to cover up to ten percent of its population in almost two decades of its existence. However, this is not unachievable as it has been demonstrated in some countries such as Ghana, Rwanda, and Republic of Korea among others [5, 28, 29].

Overcoming these challenges to achieve UHC will require not a few strategy; the government and other relevant stakeholders must ensure that awareness about the scheme is much better than it is presently. A well informed people could serve as 'political entrepreneurs' [6] for themselves by creating effective avenues to demand for beneficial social policies and achieve much more than if the demand was made for them through intermediaries. When demand-side is prompted to participate

actively in the process of implementation and expansion, the likelihood that the scheme would be sustainable is higher than when the demand-side takes a passive role or it is not involved at all. Using multiple strategies through radio and TV campaigns, spreading the information through close contacts and others routes have been shown to be associated with enrolment of potential beneficiaries in prepayment schemes [17].

In this study, more of the federal civil servants were aware about, and were enrollees in the NHIS than were the state and the LGA employees. This is in confirmation of findings from previous studies and reports about the situation of the pattern of NHIS enrolment in Nigeria [9, 12]. Since its inception, the scheme has been opposed by the existing labour unions in the country, thus limiting the financial contributions in the scheme to the federal government alone. This is despite receiving the health care benefits by the same employees who have opposed making financial contributions to the scheme. This inadvertently narrows the financial base of the scheme. With a narrow financial base, expanding the population coverage and the associated benefit package would be difficult to achieve. Better understanding of the scheme and its benefits made through well strategized awareness and advocacy meetings with stakeholders especially the labour union leaders could be one of the ways forward [20].

Efforts to get the government structures at the state levels to make a buy- in into the scheme since its commencement has been difficult. This is, because of the political arrangement of the country as a federal system entity, whereby the national government do not have constitutional authority to enforce the scheme on the state sub-national governments [6, 21]. Recently, the highest policy making body on health in Nigeria approved the decentralization of the scheme to the sub-national tiers of governance (the states), [19]. As this arrangement empowers the state sub-national government to manage its health insurance scheme, and as well make the scheme mandatory in the states, it could be the way forward in ensuring that UHC is achieved in Nigeria.

4. CONCLUSION

This study shows that the proportion of the population covered and the annual rate of coverage of the NHIS among the formal sector employees in Kwara State is low and slow respectively. Likewise, the coverage was mainly limited to the federal government employees. Efforts to improve on the present coverage and speed up the rate of coverage in Nigeria should be paramount on the agenda if

achievement of a UHC is desirable. Decentralization of the scheme to the federating states as it is currently approved is a welcome development and could prove useful in achieving UHC.

CONSENT

Study participants consent was sought and obtained during the data collection.

ETHICAL APPROVAL

Ethical approval for the study was obtained from the Ethical Review Committee of the Bowen University Teaching Hospital, Ogbomosho Nigeria.

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