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National Health Insurance Scheme and Universal Health Coverage among Formal Sector Employees in Ilorin, Nigeria: Has Any Progress Been Made?

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Authors' contributions

This work was carried out in collaboration between all authors. Author DAA designed the study and developed the draft of the manuscript. Authors OAB and MDD did the statistical analysis and reviewed the draft of the manuscript. All authors read and approved the final manuscript.

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ABSTRACT

Aims: Nigeria implemented a prepayment scheme for health over a decade ago with the aim of achieving universal health coverage. Though the formal sector employees in the federal civil service are the focus, universal health coverage has not been achieved among them. This study aimed to assess the awareness and annual coverage rate of the scheme among employees in the formal sector in Ilorin, Nigeria.
Study Design: A cross-sectional survey.
Place and Duration of Study: Ilorin, Kwara state Nigeria. July and August, 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

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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 test 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 a previous study (85.4% vs 78.9%). Population coverage was better than it was in the previous study (89.8% vs 63.3%). Predictors of awareness of the scheme include working in federal (OR = 7.75, CI = 1.749-10.152, *P* = 0.001) and state governments establishments (OR = 2.544, CI = 1.212-5.340, *P* = 0.014).

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; enrollees; 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 few countries such as 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. Workers in industries organized sickness funds in which contributions were based on income and access to care was based on need. This concept of mutual support for health care need has evolved over time to the mature state it is today in developed economies. Cognizant of the benefits, western nations have since formalized the concept [4]. Evidences abound that prepayment schemes for health in developed countries evolved over a long period of time before attaining general acceptability. However, there are proofs that time taken to enroll a large population of people could be shorter especially in countries that are just embracing and making efforts to implement and expand the scheme [5].

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

The poor performance of the NHIS has been partly ascribed to low awareness of the scheme among the expected beneficiaries [11-13]. Factors such as age, marital status, educational attainment and place of residence are some of the demographic factors that are known to be associated with awareness about, and enrolment in prepayment schemes [14-16]. In a study by Nyagero et al. [17], improving level of awareness about health insurance scheme through the radio and other forms of information sharing could

encourage enrolment. Strong opposition from labor unions and sub-national governments especially in Nigeria were some of the reasons for the poor performance [18]. To surmount this, recently the Council on Health in Nigeria approved the devolution of the scheme to the sub-national governments at the states level, with technical oversight from the NHIS at the national level [19]. Persistent advocacy and campaigns about the scheme among major stakeholders have been cited as some of the reasons for successful health insurance programs in many countries in Asia and Africa [20].

A preliminary study by the authors was conducted three years earlier among the formal sector in Ilorin, Nigeria. It studied awareness and coverage of the NHIS among the formal sector workers in Ilorin metropolis. Though the study reported high awareness of the NHIS among the workers, but only 13.5% of them were enrolled in the scheme [21]. It is important to measure the rate of population coverage for a scheme that sets out to achieve universal coverage within a decade of its establishment. This will enable stakeholders to gauge the possibility of achieving the set objective. This study was embarked upon as a follow up study to assess the annual rate of coverage of the scheme among formal sector employees. Findings will be useful in identifying gaps for necessary action by stakeholders.

2. MATERIALS AND METHODS

2.1 Study Area

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

2.2 Study Population

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

2.3 Study Participants

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

2.4 Study Design

This is a cross-sectional, descriptive survey carried out between July and August 2015. It is a follow-up study to initial piloted cross-sectional study three years earlier [21].

2.5 Sample Size

Sample size was estimated using the result of a previous study where the proportion of those who were current beneficiaries of the prepayment scheme under the NHIS was 13.5% [21], with a power of 80%, confidence level of 95%, non-response rate of 10% and design effect of 2.83. A total of 507 respondents were estimated for the study.

2.6 Sampling Technique

Proportional allocation using probability proportional to size was used to determine the number of respondents to be recruited from each level of establishment of the workers based on the population of workers in each service. The allocated proportions were as follows: federal (181), state (242) and local (84) government establishments in the city of Ilorin and environs. In each stratum, systematic sampling technique was used to recruit the respondents 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 basic information about it [23]. Questions from the

respondents about the research project were answered. 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 that shows significant association at 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

3.1 Socio-demographic Characteristics of Respondents

Three – quarter [65.7% (333/507)] of the respondents were within the age range 30-49 with mean age of 37.8±9.6 years. More than half of the total number of respondents were male [55.8%, (283/507)]. A large proportion of the population were married [79.7%, (404/507)], and had attained tertiary education status [68.4%, (346/507)]. Over half of the respondents were Muslims [55.4%, (281/507)] while majority were of the Yoruba ethnic group [90.1%, (457/507)] (Table 1).

3.2 Mode of Payment for Health Care, Awareness and Utilization of Health Insurance

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

3.3 General Assessment of Health Service Components under the Scheme

Table 3 shows the majority of respondents had a positive view of the scheme, as they agreed that it was better than OOP and that it would minimize financial hardship among other desired attributes.

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
	Mean Age (std. dev.)	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/Muslims	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

Others Separated, divorced, widow, widower; Others‡ (Ibos, ebiras,Tivs, Igalas)*

3.4 Respondents Awareness about NHIS and Socio-demographic Characteristics

Marital and educational statuses and type of employer were significantly associated with awareness about the NHIS, as highlighted in Table 4. Respondents who were single (χ^2 = 8.012, *P* = 0.02), had tertiary education (χ^2 = 42.188, *P* = 0.000) and work with the federal government (χ^2 = 17.944, *P* = 0.000) were more aware about the NHIS than others. Age and sex were not significantly associated with awareness of the NHIS.

3.5 Predictors of Awareness of NHIS

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), employees in the federal civil service were more than seven times likely 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 who worked in the state were more than two times likely 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).

4. DISCUSSION

The socio-demographic pattern as seen in this study is similar to the national pattern [22,24]. The proportion of the respondents who claimed to be in a prepayment scheme was about three times higher than the national average [9]. This is unsurprising, as the study population consists of those employed in the formal sector which is currently the only segment of the population that is the focus of 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].

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

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

		Opinion about the NHIS		
	Opinion category	**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

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		
	Single	50(12.4)	354(87.6)	404	8.012	0.02
	Others*	3(20.0)	12(80.0)	15		
Educational status	Primary/secondary	23(45.1)	28(54.9)	51		
	Post – secondary	39(11.3)	307(88.7)	346	42.188	0.000
	Vocational schools	12(11.0)	97(89.0)	109		
Place of work	LGA	23(27.4)	61(72.6)	84		
	State	37(15.3)	205(84.7)	242	17.944	0.000
	Federal	14(7.7)	167(92.3)	181		

Others; Separated, divorced, widow, widower*

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

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

Enrolment in prepayment schemes has been ascribed to many factors, among which are good awareness of the scheme [14,16]. The most frequently reported source of information about the NHIS for the first time was the radio or television. This is also not unexpected as these

are the most common electronic sources of information in Nigeria as confirmed in a national survey [24]. However, 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 et al 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 despite their eligibility. The majority of those yet to enrol in the scheme were employed by the LGA and the state whose employers (LGA and state) are 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 shows that the NHIS has poor coverage in the general populace and specifically in the formal sector despite the scheme's current focus on this group. It is important to note that more than two-fifths of those who were under the NHIS were federal civil service employees. This confirms findings from other studies that the current enrolment under the NHIS is mainly limited to formal sector employees of the federal civil service [9].

Currently, available evidence indicates that more than two-thirds of Nigerian populace live below the poverty line [7,26]. Thus the likelihood that those who did not sign up with the NHIS (which charges a relatively lower premium) would enrol in a private health insurance scheme 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 out of pocket (OOP) means. Previous studies and reports have confirmed that OOP is the major means of funding health care in Nigeria. 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 positive view of prepayment schemes as seen 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 to prepayment schemes for health care, NHIS coverage rate is slow and the current level of population coverage in Nigeria is quite poor. In a previous study conducted three years earlier by Adewole et al. [21] among the same study population, the proportion of those who were enrolees under the NHIS was over two-thirds (63.3%), 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 multiple strategies; the government and other relevant stakeholders ensuring that awareness about the scheme is much better than it is presently. A group of well-informed people could serve as 'political entrepreneurs' [6] by creating effective avenues to demand for beneficial social policies and achieve much more than if the demand was made for them through intermediaries. The radio and the television are potent sources of information dissemination in this environment and in similar settings [17] and could be used to get the masses better informed about the NHIS and its benefits. When demand-side is prompted to participate actively in the process of planning, implementation and expansion, the likelihood that the scheme would be sustainable is more than when the demand-side takes a passive role or it is not involved at all. Using multiple strategies through radio and television campaigns, spreading the information through close contacts and other 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 enrolees in the NHIS than were the state and the LGA employees. This is in confirmation of findings from previous studies and reports about 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 [9]. This is despite the continued access to health care benefits by the same employees who have opposed making financial contributions to the scheme. This consequently narrows the financial base of the scheme. With a narrow financial base, expansion of the population coverage and the associated benefit package would be hindered. Better understanding of the scheme and its benefits through strategic interaction and advocacy among stakeholders especially the labour union leaders is proposed as one of the ways forward [20].

Efforts to promote adoption of the scheme by other tiers of government have been largely unsuccessful. This is arises from the lack of constitutional authority by the national government to impose the scheme on the state sub-national governments as a result of federal system of governance practiced in the country. [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]. This decentralization empowers the state sub-national government to manage their health insurance schemes and could be the way forward in ensuring that universal health coverage is achieved in Nigeria.

5. 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 both low and slow. 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 of the health insurance scheme in Nigeria should be paramount on the agenda if achievement of a universal health coverage is desired. 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, Ogbomoso Nigeria.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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