International Journal of Asian Social Science

journal homepage: http://www.aessweb.com/journal-detail.php?id=5007

NATIONAL HEALTH INSURANCE SCHEME AND ITS EFFECT ON STAFF'S FINANCIAL BURDEN IN A NIGERIAN TERTIARY HEALTH FACILITY

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ABSTRACT

Background: *The core roles of National Health Insurance Scheme (NHIS) in health financing include raising of revenue and pooling of resources for health care so that health risk can be effectively shared among enrollees. This study seeks to find out the effects of NHIS on hospital staffs' financial burden and satisfaction with services rendered in a Nigerian Tertiary Health Centre.*

Methodology: *This study was carried out in the University of Ilorin Teaching Hospital Staff Clinic (UITH Staff Clinic). This is a cross-sectional descriptive study with a sample size of 210 derived using Fishers formula. Semi-structured, pre-tested, interviewer administered questionnaire was used to collect data while the analysis was done using EPI INFO version 4.3.1. Systematic sampling technique was used to select respondents. Frequency tables and cross tabulations were generated. Chi-square and student t-test was used to determine statistical significance of observed*

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differences in cross tabulated variables and comparison of two means respectively. Level of significance was predetermined at a p-value of less than or equal to 0.05.

Result: *The mean estimated amount spent on health service per month before NHIS was 3040.4±2552.8 Naira (19.0±15.95 US Dollars) and after NHIS it reduced to 782.2±637.4 Naira (4.89±3.98 US Dollars). Among the junior staff, 51 (77.3%) were satisfied with NHIS while only 15 (22.7%) were not satisfied, however among the senior staff, 75 (49.3%) were satisfied and 77 (50.7%) were not satisfied. The disadvantages of NHIS according to respondents include non-dispensing expensive drugs (60.9%), non-availability of NHIS forms (24.5%), poor attitude of health workers (10.4%) and inadequate coverage (4.2%).*

Conclusion: *In order to achieve the Millennium envelopment Goal 1 which is to eradicate extreme poverty, NHIS is highly necessary to reduce financial burden of illnesses. It is therefore recommended that the NHIS should be stepped up to cover more Nigerians as a form of health care financing in the country.*

Abstract word count: 308

Key Words: Financial burden, Health, Insurance,

INTRODUCTION

Several approaches abound in healthcare financing and these includes fees for service, general taxation, social insurance, public and private insurance, community financing, loans and grants (Onyedibe et al., 2012; Awosika et al., 2005). The rising cost of health care services, inadequate access to quality health care and inability of government health facility to cope with health care demand necessitated the establishment of National Health Insurance Scheme (NHIS) in many African countries (Onyedibe et al., 2012; Akande et al., 2011). National Health Insurance Scheme (NHIS) was planned to take off in 1962 in Nigeria, but failed for some political reasons (Onyedibe et al., 2012; Awosika et al., 2005). However, it was officially launched on 6th June 2005 as part of health reform program and strategies aimed towards providing effective and efficient healthcare for citizens, most especially for the poor and vulnerable (Onyedibe et al., 2012; Akande et al., 2011; Shafiu et al., 2011), who have suffered long enough under the system of "fee for service" which was operational in most part of the country (Onyedibe et al., 2012).

The core roles of NHIS in health financing include raising of revenue and pooling of resources for health care so that health risk can be effectively shared among members on the NHIS (Akande et al., 2011; Shafiu et al., 2011). This is one of the major indicators of a growing society as no society can be said to be genuinely growing unless the vital indicators of better living are evident. (Akhakpe I et al 2012) This will reduce the probability that households have to forgo other subsistence need for health care hence serving as safety net (Akande et al., 2011) and not only that the financial barrier of accessing health services can be minimized (Shafiu et al., 2011). Since the introduction of NHIS during this last decade in many African countries, there has been increase in utilization of health facilities and a reduction in Out-of-Pocket (OOP) expenditure (Shafiu et al.,

2011; Olugbenga-Bello et al., 2010; Liao et al., 2012; Adinma et al., 2010; Agar et al., ; USAID). A research on evaluation of the effects of NHIS in Ghana revealed a doubling of utilization of health care facilities from 37% in 2004 (pre-NHIS era) to 70% in 2007 (post- NHIS era) and this was equally accompanied by a substantial reduction in Out-of-Pocket (OOP) expenditure for health care from 43,604cedis ($4.69) to 19,898cedis ($2.14) (USAID 2009). Similarly, Nguyen et al from their study on financial protection of NHIS underscores disparity between OOP expenditure by uninsured persons [29,843cedis ($3.21)] and insured persons [21,503 ($2.31)] (Nguyen et al., 2011).

In Nigeria, before NHIS implementation an average of 357 patients were seen in the staff clinic of a tertiary institution monthly but after introduction of the scheme there was 150% increase in utilization (Akande et al., 2011). Similar study in Nigeria showed that there was significant utilization of maternal health services after implementation of health insurance scheme (Adinma et al., 2010). In United States of America, children with public insurance were significantly more likely than privately insured children to use 2 of the 4 medical services and 5 of the 7 health related services (Weller et al., 2003). Likewise in Taiwan, introduction of National Health Insurance reduced the disparity of patient utilization between the previously uninsured and insured older urban residents by 12.9 (22.0) percentage points (Agar et al. 2010).

Furthermore, various studies done in Nigeria reiterate patients' satisfaction with NHIS and its positive impact on financial burden. In Osun State of Nigeria, 39.1% and 2.9% of civil servant respectively "Agree" and "Strongly agree" that NHIS reduces the burden of medical bills (Olugbenga-Bello et al., 2010). Also in Zaria, a study revealed that 42.1% of client are "more satisfied" while 57.9% are "less satisfied" with NHIS (Shafiu et al., 2011). In another study among dentists in Lagos, 76.6% admit the scheme will improve access to oral health and 71.4% believed affordability of health services will equally increase with NHIS (Adeniyi et al., 2010). More so, Oyibo in his study on OOP payments for health services posited that majority of people have difficulties in accessing quality health care services as a result of financial hardship (Oyibo, 2011). This also reiterates the finding from a study carried out in Sagamu, Nigeria where poor quality of emergency care for ruptured uterus was mainly due to financial constraint and for this reason the importance of NHIS on financial protection cannot be over-emphasized (Oladapo et al., 2010).

However, previous studies also showed that the implementation of NHIS has some drawbacks. One of such drawbacks is that there have been pockets of reports on providers commonly soliciting informal payments by charging for services out of hours, asking patients to pay for drugs which are said not to be in stock or for drugs or services not covered by the scheme (Akande et al., 2011; Shafiu et al., 2011; Olugbenga-Bello et al., 2010). From the foregoing, the financial burden vis-à-vis out-of-pocket expenditure of NHIS enrollees needs to be evaluated. The objective of this study is to assess the effect of NHIS on financial burden and satisfaction of enrollees.

METHODOLOGY

This study was carried out in the University of Ilorin Teaching Hospital Staff Clinic (UITH Staff Clinic). University of Ilorin Teaching Hospital is one of the Federal tertiary institutions in the country and the UITH Staff Clinic is one of the clinics utilized for NHIS in Kwara State. During the period of this study UITH had staff strength of 3,208 while 8,952 are enrolled on NHIS (staff usually principal enrollees while a spouse and 4 biological children can be dependants). NHIS is currently implemented mostly among federal workers. NHIS though launched in Nigeria on the 6th June 2005, the full operation in UITH Staff Clinic commenced on the 1st April 2007.

This is a cross-sectional descriptive study. The study population included clients on NHIS that came to the staff clinic for consultation and their dependants. The minimum sample size for this study was determined using the Fisher's Formula. A sample size of 210 was derived and surveyed. The study was carried out over a period of 2 months (Oct-Nov 2010) and systematic sampling technique was used to select respondents.
The sampling frame was 1,740 patients because an average of 870 patients was seen in the staff clinic monthly. The sampling interval was determined by dividing the sampling frame (1740) by the sample size (210). The sampling interval was 8 hence every 8th patient was recruited into the study. The index patient was determined using simple random sampling.

Pre-tested, semi-structured, interviewer administered questionnaire was used to generate quantitative data. The questionnaire was pretested in the Federal Staff Clinic of Federal Secretariat that offers similar services, located about 15 kilometers, (plural) away from the study area. Respondents that were above the age of eighteen, who were currently on National Health Insurance Scheme in the last one year were included in the study. Very sick patients that needed referral, those that were eighteen years and below and those who were not currently on NHIS were excluded from the study.

The analysis was done using EPI INFO version 4.3.1; and frequency tables and cross tabulations were generated. Chi-square test was used to determine statistical significance of observed differences in cross tabulated variables while student t-test was used to compare two means. Level of significance was predetermined at a p-value of less than 0.05. Clients' consent was obtained before interview. The nature of study, participation status, benefits of the study and confidentiality issues were made clear to the respondents before obtaining their consent.

RESULT

The total number of patients interviewed was 218. They were all staff or relative of staff at the University of Ilorin Teaching Hospital, Kwara State, Nigeria out of which 73 (33.5%) were males and 145 (66.5%) were females. The senior staff were 152 (69.7%) while 66 (30.3%) were junior

staff. The family size of those interviewed varied between 1-2 (26%), 3-4 (30%) and ≥5 (42.7%). The mean duration of enrolment in NHIS in those interviewed was 26.0±12.3 months while the mean last period of illness was 5.2 ± 4.9 months. Among the staff, 199 (91.3%) agreed that NHIS scheme for medical care is better than the previous system while 33 (8.7%) disagreed. Likewise, 126 (57.8%) of respondents were satisfied with the quality of service of NHIS while 69 (31.7%) were not satisfied and 23 (10.6%) were indifferent.

The patients interviewed were of the view that the benefits of NHIS include: cheaper services 141 (63.5%), affordable services 37 (16.7%) and access to health workers 44 (19.8%). However 145 (78%) were of the opinion that non availability of expensive drugs was a bottleneck while 48 (22%) disagreed. The disadvantages of NHIS according to respondents includes, prescribed expensive drugs not supplied 117 (60.9%), non-availability of NHIS forms 47 (24.5%), poor attitude of health workers 20 (10.4%) and inadequate coverage 8 (4.2%). The mean estimated amount spent on health service before NHIS was 3040.4±2552.8 Naira (19.0±15.95 US Dollars) per month and after NHIS was 782.2±637.4 Naira (4.89±3.98 US Dollars), the P-value was 0.0000 which was statistically significant.

Staff cadre was noticed to have a relationship with patients' satisfaction with NHIS. Among the junior staff 51 (77.3%) are satisfied with NHIS while only 15 (22.7%) are not satisfied, however among the senior staff 75 (49.3%) are satisfied and 77 (50.7%) are not satisfied. Among patients with less than 12 months duration of enrolment into NHIS, 24 (60%) were satisfied with NHIS while 16 (40%) were not while this was 46 (52.3%) and 42 (47.3%) satisfied and not satisfied respectively among patients with 13-24 months of enrolment into NHIS.

DISCUSSION

This is a cross-sectional descriptive study of 218 staff and relatives of staff of University of Ilorin Teaching Hospital enrolled with NHIS. Introduction of NHIS was associated with significant reduction in mean amount spent on health services per month from 3040.4±2552.8 Naira (19.0±15.95 US Dollars) before and 782.2±637.4 Naira (4.89±3.98 US Dollars), after NHIS implantation. This was in keeping with studies in Ghana which revealed a substantial reduction in OOP expenditure for health care from 43,604cedis ($4.69) to 19,898cedis ($2.14) (USAID).

Similarly, Nguyen et al from their study on financial protection of NHIS underscores disparity between OOP by uninsured person 29,843cedis ($3.21) and insured person 21,503cedis ($2.31) (Nguyen et al., 2011). The implication of this finding is that National Health Insurance Scheme has actually reduced the financial burden of diseases on the workers in the formal sector that are being covered by the scheme. It is also important to note that NHIS will contribute to the achievement of Millennium Development Goal 1 which is to eradicate extreme poverty.

In this study, it was also discovered that 126 (57.8%) respondents were satisfied with quality of service under NHIS. This finding is similar to the finding in Zaria, North-Western Nigeria where a study revealed that 42.1% of client are "more satisfied" while 57.9% are "less satisfied" with NHIS (Shafiu et al., 2011). These findings showed hat the satisfaction level with services of NHIS is relatively low among enrollees. Lack of satisfaction with NHIS has the potential to negate the positive aspects of the scheme if not looked into.

Among the respondents in this study 141 (63%) and 37 (16.7%) agreed that NHIS offers cheaper services and affordable services respectively. This was in line with a study in Osun State where 39.1% and 2.9% of civil servant respectively "Agree" and "Strongly agree" that NHIS reduces the burden of medical bills (Olugbenga-Bello et al., 2010).

Most of the respondents in this study 183 (83.9%) admitted that more staff and their family members attended the staff clinic after implementation of NHIS. This was in keeping with a study carried out in the same center where records were reviewed pre and post commencement of NHIS. Before NHIS implementation an average of 357 patients were managed in the staff clinic monthly while post commencement, an average of 870 patients were managed at the clinic (Akande et al., 2011).

Studies in Ghana also revealed a doubling of utilization of health care facilities from 37% in 2004 (pre-NHIS era) to 70% in 2007 (post-NHIS era) (USAID 2009). Similarly, in the United States of America, children with public insurance were significantly more likely than privately insured children to use 2 of the 4 medical services and 5 of the 7 health related services (Weller et al., 2003). The implication of these findings of increased utilization secondary to commencement of NHIS is that there were many cases of illnesses that do not present in the health centers as a result of lack of money to pay under other forms of health care financing. This could secondarily lead to increased morbidity and mortality of diseases. However, it should be noted that there could be abuse of the NHIS scheme by utilizing unnecessary medical care known as 'moral hazard' (Onyedibe et al., 2012).

Respondents however highlighted some problems with the scheme which includes: non-availability of some prescribed drugs, lack of expensive drugs; inadequate coverage and poor attitude of health workers. In our study, 194 (89%) of staff and/or their relatives experienced non-availability of some prescribed drugs and 145 (78%) lack of expensive drugs. This was also reported in Ghana where patient were asked to pay for drugs which are said not to be in stock or better drugs not provided under NHIS (Adinma et al., 2010).

In conclusion, healthcare is a necessity and as such care should be based on need not ability to pay. In order to achieve the Millennium Development Goal 1 which is to eradicate extreme poverty, NHIS is highly necessary to reduce financial burden of illnesses. It is therefore recommended that

the National Health Insurance Scheme should be stepped up to be a major form of health care financing in order to achieve the Millennium Development Goal 1 on eradicating extreme poverty in addition to its helping to achieve other directly health related Millennium Development Goals. It should also be made to enjoy wider coverage than the formal sector only. This will help to also reduce the financial burden of illnesses among the informal sector. The current coverage of NHIS needs to be scaled up to increase its coverage. There is also need to focus on quality improvement by NHIS in order to increase the satisfaction level of enrollees with the services provided. Bearing in mind the significant increase in utilization of care after commencement of NHIS, more studies need to be done to rule out unnecessary utilization of medical care know as 'moral hazard'

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Table-1. Socio demographic characteristics of respondents

Variable	Frequency	Percent
Age Group		
< 30 yrs	8	(3.7)
30 - 39 yrs	83	(38.1)
40 - 49 yrs	99	(45.4)
≥ 50 yrs	28	(12.8)
	Mean age	**40.78±7.65 years**
Sex		
Male	73	(33.5)
Female	145	(66.5)
Cadre		
Senior Staff	152	(69.7)
Junior Staff	66	(30.3)
Family Size		
1 – 2	58	(26.6)
3 – 4	67	(30.7)
≥ 5	93	(42.7)
	Mean family size	**4.0±2.1**
Department		
Clinical	107	(49.1)
Non Clinical	111	(50.9)

Table-2. Enrollment and Illness History

Variable	Frequency	(Percent)
Duration of Enrollment in NHIS (month)		
≤ 12	40	(18.3)
13 – 24	88	(40.4)
≥ 25	90	(41.3)
Mean duration of enrolment in NHIS (Months)		**26.0±12.3**
Last period of Illness (Month)		
1 – 3	111	(50.9)
4 – 6	54	(24.8)
≥ 7	53	(24.3)
Mean last period of illness (Months)		**5.2±4.9**
Where staff visited at last illness		
Staff Clinic UITH	185	(84.9)
Pharmacy store on self medication	33	(15.1)

Table-3. Staff opinion about service in the staff clinic after NHIS implementation

Variable	Frequency	(Percent)
Non-availability of prescribed drugs		
Yes	194	(89.0)
No	24	(11.0)
Non availability of expensive drugs		
Yes	145	(78.0)
No	48	(22.0)
NHIS scheme for medical care better than the previous system		
Yes	199	(91.3)
No	33	(8.7)
More staff and their family members attend the staff clinic		
Yes	183	83.9
No	35	16.1
Satisfaction with quality of service rendered		
Satisfied	126	(57.8)
Not Satisfied	69	(31.7)
Indifferent	23	(10.6)
Benefits of NHIS		
Cheaper Services	141	(63.5)
Affordable Services	37	(16.7)
Access to health workers	44	(19.8)
Disadvantages of NHIS		

Lack of Expensive drugs	117	(60.9)
Unavailability of NHIS form	47	(24.5)
Poor attitude of Health Workers	20	(10.4)
Inadequate coverage	8	(4.2)

Table-4. Effect of NHIS on utilization and financial burden

Variable	**Frequency (Percent)**	
Estimated Amount Spent on Health services per month (Naira)	**Before**	**After**
≤ 500	39 (17.9)	150 (68.8)
501 – 1000	46 (21.1)	39 (17.9)
1001 – 2000	60 (27.5)	20 (9.2)
< 2000	73(33.5)	9 (4.1)
	P=0.0000 X^2=135.72	
Mean amount spent on health service (Naira)	3040.4±2552.8	782.2±637.4
	P= 0.0000 Students t=10.20	
Times family visited staff clinic UITH for consultation in last 3 months		
0 – 1	127 (58.3)	63 (28.9)
2 – 3	77 (35.3)	108 (49.5)
≥ 4	14 (6.4)	47 (21.6)
	P=0.0000 X^2=44.60	
Mean times family visited UITH for consultation	1.56±1.1	2.4±1.3
	P=0.0000 Students t=9.55	

Table-5. Family size, Staff cadre, satisfaction with quality of service

	Satisfaction with quality of service		χ^2	P Value
	Satisfactory (%)	**Not Satisfactory (%)**		
Family size				
1 - 2	30 (51.7)	28 (48.3)	1.199	0.549
3 - 4	40 (59.7)	27 (40.3)		
≥ 5	56 (60.2)	37 (39.8)		
Staff Cadre				
Senior Staff	75 (49.3)	77 (50.7)	14.718	0.00
Junior Staff	51 (77.3)	15 (22.7)		
Duration of enrolment in NHIS (Months)				
≤ 12	24 (60.0)	16 (40.0)	1.903	0.386
13 - 24	46 (52.3)	42 (47.7)		
Sex				
Male	51 (69.9)	22 (30.1)	6.550	0.10
Female	75 (51.7)	70 (48.3)		
Frequency of use of staff clinic in past 3 months				
0 - 1	34 (54.0)	29 (46.0)	0.685	0.710
2 - 3	63 (58.3)	45 (41.7)		
≥ 4	29 (61.7)	18 (38.3)		