ORIGINAL ARTICLE

Health services utilization and costs of the insured and uninsured under the formal sector social health insurance scheme in Enugu metropolis South East Nigeria

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Abstract

Background: Health insurance is a social security system that aims to facilitate fair financing of health costs through pooling and judicious utilization of financial resources, in order to provide financial risk protections and cost burden sharing for people against high cost of healthcare through various prepayment methods prior to falling ill. It is still unclear how the Federal Social Health insurance program for federal civil servants has affected the insured and uninsured civil servants in terms of health services cost and utilization in Enugu metropolis.

Objectives: The aim of the study was to compare the health services utilization and cost of insured with that of the non-insured federal civil servants with a view to generate information for policymaking on improving services of the National Health Insurance Scheme.

Materials and Methods: A comparative, descriptive, cross-sectional survey of both the insured and uninsured federal civil servants was conducted in Enugu metropolis. Respondents were purposively enrolled and were grouped according to their insurance status after signing the informed consent form. Comparative analysis of health services utilization, satisfaction, and health services cost which include total cost, average cost, and catastrophic expenditures were done using SPSS version 17.0.

Results: There were 809 respondents; this comprised 451 insured and 358 uninsured respondents. There were 420 males (51.9%) and 389 females (48.1%). It was found that 657 respondents had at least easy access to health; this comprised 369 (56.7%) insured and 288 (43.3%) non-insured respondents while 70 (46%) of the non-insured and 82 (54%) of the insured civil servant had difficult access to health care (P = 0.620).

Conclusion: There are still federal civil servants yet to enroll into the formal sector social insurance program. The NHIS-insured civil servants have no appreciable advantage in terms of access to and cost of health services in Enugu metropolis.

Key words: Health insurance, health services utilization, insured

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Introduction

Health insurance is a social security system that guarantees the provision of needed health services to persons on the payment of token contributions at regular intervals.[1] Its mission is to facilitate fair financing of health care costs through pooling and judicious utilization of financial resources to provide financial risk protection and costs burden sharing for people against cost of healthcare through various prepayments program prior to falling ill.[2] Insurance have been shown to improve access to health services,

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health care.[3] Health insurance also influences satisfaction obtained from health services and is pivotal in the expansion of the health system.[4]

The difference between those with and without health insurance coverage is profound, especially in the developed world.[5] The Institute of Medicine noted that providing health insurance to uninsured adults would result in improved health, including greater life expectancy.[5]

Research has shown that compared to insured individuals, the uninsured receive less preventive care, are more likely to be diagnosed at more advanced disease stages, and once diagnosed, tend to receive less therapeutic care and have higher out of pocket medical expenses.[6,7] Increasing the rate of health insurance coverage would especially improve the health of those in the poorest health and most disadvantaged in terms of access to health care and would likely reduce health disparities among socio-economic groups.[6-8]

The formal sector social health insurance program of the National Health Insurance Scheme was launched in 2005 in Nigeria covering only the federal civil servants with a view of improving access to quality health care at a reduced cost.[9] It is still unclear how this program has affected the insured and uninsured federal civil servants in Nigeria in terms of access to quality health services. The aim of the study was to compare the health services utilization and cost of insured with that of the non-insured federal civil servants under the formal sector social health insurance program of the NHIS so as to provide information for policy making on improving services.

Materials and Methods

Study area and population

A descriptive cross-sectional survey was conducted in Enugu metropolis, which is the capital of Enugu state in South east of Nigeria. The metropolis comprises individuals of diverse background and ethnic groups, but most of the inhabitants are Ibos. There are several federal ministries, agencies, and parastatals offices located in the metropolis. The metropolis also has a booming commercial, industrial, and academic environment. There are 4 NHIS-accredited tertiary health facilities and seventy nine (79) accredited primary and secondary health care facilities and twenty-four Health Maintenance Organization (HMO) involved in the Scheme across the state. The federal civil servants and other organized private sector staff have enrolled under the health insurance scheme using the various accredited private and government health facilities in the metropolis as primary health services provider.

The sample population constituted federal civil servants that were working in the state. The study protocol was approved by Ethics and Research Committee of The University of Nigeria Teaching Hospital Enugu. A total of 809 respondents from the federal ministries were purposively enrolled from the estimated population of 11,400 federal civil servants in Enugu for the study since only the federal staffs were involved in the health insurance program using the sample size was derived the formula $N = 4Z^2P\ (1\text{-}P)/D^2$ where Z is the standard normal deviate, P; proportion of individuals using health insurance and N; The desired sample size.[10] The final value was used in order take care of attritions and subgroup analysis. The information on NHIS enrollment status was obtained from enrollees.

Conceptual framework

The behavioral model of health services use by Aday and Andersen was used as the conceptual framework for selecting independent variables.[11] It postulates that the use of health services is dependent on factors of an individual's predisposition to use the health services, the level of need for the services, and presence of factors that enable or facilitate the use of such health care services.[11]

Questionnaire

A pretested interviewer-administered questionnaire was used. It was addressed both to the insured and non-insured respondents. The number of respondents selected was proportionally allocated, according to the number of staff in the randomly selected ministries and parastatals. The questionnaire had sections, which included socio-demographic profile of respondents, health services utilization, health care expenditure/payments, and health-seeking behavior.

Data and study variables

Data was collected using the pretested questionnaire between October 2011 and January 2012.

The independent variables were occupation, sex, educational status, insurances status, socio-economic status. The key independent variable of interest was whether the respondent is insured or not.

While dependent variables/outcomes of interest were utilization pattern, cost of care, catastrophic health expenditure, and out of pocket expenditure.

Access to health care: This variable was measured in terms of having usual place of care. It was assessed in terms of respondents having a regular place of care with self-assessed ease on receiving needed health care services as easy, difficult, or not easy as not having a regular place of care and experienced difficulty in receiving needed health services.

Self-reported quality of care received, waiting time in the health facilities, and level of satisfaction with health services need as reported by the respondents were measures used to assess access to health services. This was categorized into

4 levels; with very satisfied as the highest level of satisfaction with health services and not satisfied as the lowest level of satisfaction. Prolonged waiting time was defined as an elapsed duration of more than 2 hours before receiving health service.

Self-reported quality of care was assessed in terms receiving needed care and promptness of health services.

Use of health services

For those who reported illness in the past 4 weeks prior to the study, the number of health provider visits for outpatient services, delivery services or inpatient services was used to access utilization. Recall period for delivery and inpatient health services need was extended to 6 months because they are usually rare events. Use of self-medication, pharmaceutical shops, traditional healers, or other alternative care was used to access the health seeking behavior.

Out of pocket health payment: This refers to payment made by household at the point of receiving health services. These included hospital bills, drug bills, consultations fees, laboratory fees, and copayments paid by the respondents.

Health services cost: This was derived from total cost of health services, which included hospital bill, consultation fees, X-rays accommodation fees, investigation cost, transport and drug charges. These also constituted the direct cost. Average cost spent per visit by a respondent was derived from the total cost and frequency of service utilization. The total, cost which includes all the expenses made by insured respondents in obtaining health services over the recall period of 4 weeks, was compared with the cost incurred by the uninsured. This was also done for average cost. The indirect costs were not used for analysis.

The indirect costs were opportunity costs, which are the value of the best alternatives forgone in order to achieve the services under consideration. The opportunity costs were not used for analysis because of poor estimation by the respondents.

Financial burden and non-food expenditure

Catastrophic expenditure indicator was used as an indicator for measuring financial burden of health care relative to the household capacity to pay. This is an expenditure that exceeded some pre-specified fraction of household income. Different thresholds were used, 40%, 10%, and 5%.

Non-food expenditure was used to determine capacity to pay. The non-food expenditures of household were determined by using the monthly expenses on clothing, rent, cooking fuel, educational expenses, transport, health, household furniture.

Statistical analysis

Data was analyzed using statistical package for social sciences (SPSS) version 17.0. Comparative analysis was done between the two groups using non-parametric test of significance. Comparing the level of utilization pattern of each group, average health care expenditures, total cost and average and satisfaction of the NHIS insured and uninsured groups. Level of significance was probability of less than 0.05 ($P < 0.05$). The study hypothesis were that the NHIS-insured federal civil servants do not incur more catastrophic health expenditures than the non-insured federal civil servants in Enugu and the insured federal civil servants do not utilize health care services more than the non-insured federal civil servants in Enugu.

Results

There were 451 insured and 358 uninsured respondents that participated in the study. There were 420 males (51.9%) and 389 females (48.1%). The staff distribution shows that 284 (63%) were senior staff and 167 (37%) junior staff were insured while 193 (54%) senior staff and 165 (46%) junior staff were uninsured. The socio-demographic characteristics of the study population are shown as [Table 1].

In terms of being insured by another type of insurance apart from NHIS 65, respondents whom were already covered by NHIS were covered by other insurance scheme while 26 uninsured respondents were covered by another health insurance plan. There was significant difference between the insured and uninsured federal civil servant ($P < 0.01$).

In terms of access to health care services, which were measured using usual place of care and timeliness of needed, it was found that 657 respondents had at least easy access to health services; this comprised 369 (56.7%) insured and 288 (43.3%) non-insured respondents while 70 (46%) of the non-insured and 82 (54%) of the insured civil servant had difficult access to health care services ($P = 0.620$). For timeliness of needed health services offered, there was no statistically significant difference between the insured and uninsured respondents [Table 2].

Among the insured, 337 (74.5%) needed health care service while 79.8% of the non-insured needed care. It was noted that 67.9% of the insured got care in hospital setting while 53.6% got care in the hospital ($P < 0.01$). Among respondents who reported to health service center within the first 2 days of illness, 69.4% were insured while 30.5% were uninsured respondents ($P < 0.01$).

Health service costs

The average cost of health care services incurred per month by the insured respondents was 1859.65 ± 5453, while the average cost of health care services incurred by the uninsured was 2157.45 ± 8847. The total cost of health

services per month incurred by the insured respondents were 9317.36 ± 9827 while that of the uninsured was 7306.01 ± 1859. The insured respondents spent an average of 81322.12 ± 105811 on non-food items compared to 63717.60 ± 69152 spent by the uninsured respondents. These costs were borne in 71.3% by out of pocket payment, 9.9% by insurance with co-payment, 3.3% by insurance without copayment, installment payment and payment in kind constituted 2.2%.

In terms of catastrophic health expenditure, 281 respondents (34.7%) spent at least 40% of their non-food income on health care services per month; this consisted of 119 uninsured (14.7%) and 162 insured (20%) respondents ($P = 0.632$) [Table 3].

Table 1: Socio-demographic characteristics of the insured and uninsured civil servants

Variable	Insured *n* (%)	Uninsured *n* (%)
Sex respondent		
Males	235 (56.0)	185 (44)
Female	216 (55.5)	173 (44.5)
Marital status		
Married	338 (60.14)	224 (39.86)
Single	94 (43)	125 (57)
Divorced	1 (33.3)	2 (66.7)
Widowed	17 (70.8)	7 (29.2)
Job description		
Cleaner	17 (50)	17 (50)
Clerical officer	37 (58.7)	26 (41.3)
Junior officer	113 (48.1)	122 (51.9)
Senior officer	210 (57.4)	156 (42.6)
Professionals	67 (64.4)	37 (35.6)
Directors	7 (100)	0 (0)
Household size		
<6 members	347 (53.2)	305 (46.8)
>6 members	104 (66.2)	53 (33.8)
Another Insurance cover	65 (71.4)	26 (28.6)
Educational Status		
University	281 (57.6)	207 (42.4)
Polytechnic	107 (51.9)	99 (48.1)
Senior secondary	49 (52.7)	44 (47.3)
Junior secondary	3 (42.9)	4 (57.1)
Primary	11 (78.6)	3 (21.4)
No education	0 (0)	1 (100)
Major Source of income		
Current Job	412 (56.9)	312 (43.1)
Big business	10 (52.6)	9 (47.4)
Farming	4 (66.7)	2 (33.3)
Trading	5 (62.5)	3 (37.5)
Private sector	7 (63.6)	4 (36.4)
State government	5 (50)	5 (50)
Socio-economic status		
Q1 (most poor)	80 (55.9)	63 (44.1)
Q2 (Very poor)	92 (61.7)	57 (38.3)
Q3 (Poor)	81 (55.9)	64 (44.1)
Q4 (Least poor)	67 (47.2)	75 (52.8)

Table 2: Timeliness of health services offered to insured and uninsured federal civil servants

Timeliness of health service needed	Insured	Uninsured	Total
Untimely service	191	220	411
Timely service	167	231	398
	358	451	809
df=1 χ^2=1.67	P=0.62		

Discussions

It was noted that there were federal civil servants who are yet to be enrolled into the formal sector social health insurance program of the NHIS despite its inception over 7 years ago. Apathy and lack of awareness have been suggested as part of the reasons for this trend. Similar trend was noted by Awe *et al.*, in Oyo State.[12] The insured respondents were also more likely to be insured by another insurance than the non-insured respondents;, it is possible that the insured may be more aware of the benefits of health insurance by virtue of participating in an insurance program.

Studies[5-7] have demonstrated that social health insurance improves access to health care; however, it was noted that the insured federal civil servant under the NHIS had no appreciable advantage in terms of access to health care services, timeliness of needed care. However, the insured were noted to utilize the hospital services more and were more likely to present early to hospital as compared to their uninsured counterparts. This aspect of access to health is part of the objective of NHIS, thereby leading to early detection of ill health and possible treatment. This is consistent with reports of previous authors.[13,14] Delayed timeliness of needed services given to the respondents may be a health system barrier and this calls for research in this area.

The insured civil servants were found to have comparable average health care and total health care costs per visit with the non-insured civil servants. Similar reports have been reported by Ekmann in Zambia.[15] Several reasons

Table 3: Catastrophic health expenditure of the insured and uninsured at 40% threshold

Insurance status	< 40% of non-food income	> 40% of non-food income	Total
Insured	289 (35.7)	162 (20)	451
Uninsured	239 (29.6)	119 (14.7)	358
	528 (65.3)	281 (34.7)	809
$\chi^{2.632}$ df=1			
P=0.432			

have been given for this trend, which include poor benefit package, operational guidelines, delay in provider reimbursement, inadequate supply side incentives leading to informal payments by the insured civil servants, which may contribute to their health services cost.[16] The NHIS have also been reported to be saddled with some of these problems; also, the poor benefit package of the scheme, which excluded some chronic diseases which are known to have heavy cost implication, may have some effect on the cost of health services been borne by the insured federal civil servants.[9]

The non-insured federal civil servants were found to spend catastrophically for health services as much as their insured counterparts, though health insurance has been shown to reduce catastrophic health expenditure for households.[17] This was not observed in the study; this may probably be due to the scope of services which the scheme covers, benefit packages which makes the enrollees underinsured in the Formal sector Social Health Insurance Program of NHIS.[16] Similar reports have been reported by previous authors.[15,16] The implication of this is that, despite being insured, enrollees under the NHIS still spend a significant part of their income on health services. This is contrary to the aim of the scheme, which seeks to provide accessible and affordable health care to the citizens.[9] Thus, urgent steps have to be taken by government and stakeholders to re-engineer the scheme and to modify its operational guidelines, create awareness, improve benefit packages to be comparable to international standards.

Limitations of the study

The study was a cross-sectional study among federal civil servants whom were purposively chosen and was done in an urban setting where the findings from the study could be extrapolated to other settings because of the heterogeneous background of the individuals in the country. The recall period for health services utilization was limited to 4 weeks; this may have affected some of the responses obtained. Further similar studies are needed in other settings in order to evaluate the impact of health insurance among them.

In conclusion, it was found that there were still uninsured federal civil servants under the NHIS. The insured federal civil servants under the NHIS do not have significant advantage over the uninsured counterparts in terms of access to health care and healthcare spending. Urgent steps should be taken to improve the operational guidelines and benefit package of the program. These may help in scaling up of the program.

References

1. Gottret P, Schieber G, editors. Health financing revisited. Washington DC: World Bank 2006. p. 45-121.
2. Metiboba S. Nigeria's National Health Insurance Scheme: The need for beneficiary participation. Res J Int Studies 2011;22:51-6.
3. Onwujekwe O, Hanson K, Uzochukwu B. Examining inequities in incidence of catastrophic health expenditures on different healthcare services and health facilities in Nigeria. Plos One 2012;7:e40811.
4. Thompson LA, Knapp CA, Saliba H, Giunta N, Shenkman EA, Nackashi J. The impact of insurance on satisfaction and family-centered care for CSHCN. Pediatrics 2009;124:S420-7.
5. ILO (Social Security Department). Social health protection an ILO strategy towards universal access to health care August 2007.
6. Agency for Health Care Research and Quality. Access to health care chap. 4. Available from: http://www.ahrq.gov. assessed on 15/07/2013
7. Price DW, Swanay RE, Stahy XU, Goodspeed JR, Steiner JF. Care of common medical conditions in a managed care programme for uninsured adults. Perm J 2003;27-35.
8. Domelan K, Blendon RS, Hill CA, Hoffman C, Rowland D, Frankel M, *et al.* Whatever happened to the health insurance crisis in the united states.Voices from a national survey. JAMA 1996;276:1346-50.
9. Awosika Ladi. Health insurance and managed care in Nigeria. Ann Ibadan Postgrad Med 2005;2:40-8.
10. Eng J. Sample size estimation: How many individuals should be studied? Radiology 2003;227:309-13.
11. Sibley LM, Weiner J. An evaluation of access to health care services along the rural urban continuum in Canada. BMC Health Services Research. Available from: http://www.biomedcentral.com/1472-6963/11/20 [Last accessed on 2011 Nov].
12. Sanusi RA, Awe AT. Perception of national health insurance scheme (NHIS) by health care consumers in oyo state, Nigeria. Pakistan J Soc Sci 2009;1:48-53.
13. Hafner-Eaton C. Physician utilization disparities between the uninsured and insured: Comparisons of chronically ill, acutely ill and well nonelderly populations. JAMA 1993;269:787-92.
14. Jutting JP. The impact of health insurance on the access to health care and financial protection in rural developing countries: The example of Senegal. Washington DC: HNP World Bank; 2001. p. 1-22.
15. Ekmann B. Catastrophic health payments and health insurance: Some counterintuitive evidence from one low-income country. Health Pol 2007;83:304-13.
16. 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;10:4.
17. Xu Ke, Carrin G, Nguyen TK, Nguyen HL, Dorjsuren B, Ana Mylena A. Health service utilization and the financial burden on households in Vietnam: The impact of social health insurance. WHO: Geneva;2006.

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