ORIGINAL RESEARCH

Quality of hypertension management and health insurance impact: an assessment of insured and uninsured patients with systemic hypertension in a teaching Hospital in Ilorin, Nigeria

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Abstract

Background

Patient satisfaction is an important indicator used to measure quality of care and the performance of healthcare services. This study assessed patient satisfaction with the quality of hypertension care received by both insured and uninsured patients with systemic hypertension.

Methods

This comparative cross-sectional study was conducted among insured and uninsured patients with systemic hypertension attending the Medical Outpatient Department clinics of the University of Ilorin Teaching Hospital, Kwara State, Nigeria, from May to July, 2023. Data were collected from 95 patients from each group, selected by systematic random sampling; using an interviewer-administered, anonymous, structured close ended questionnaire. Different aspects of the healthcare services were assessed; these include patient registration process, waiting time, staff attitudes, laboratory services, availability and cost of prescribed drugs etc. Data analysis was done using Statistical Package for the Social Sciences (SPSS) version 27.0 software.

Results

The insured patients with systemic hypertension had a higher overall mean satisfaction (74.1±20.8) compared to the uninsured group (69.3±23.2), though this was not statistically significant (p value = 0.417). However, the insured patients with systemic hypertension had significant satisfaction scores compared to uninsured hypertensive group in the domains of waiting time (63.6± 24.9 vs 48.0 ± 25.8, p=0.000), drug cost and availability (73.9 ± 24.1 vs 56.2 ± 25.0, p=0.000), and cost of service and care (74.1±24.0 vs 59.8±26.0, p=0.000).

Conclusions

This study concluded that both insured and uninsured patients with systemic hypertension had comparable treatment, though the insured group had some better satisfaction scores in some of the assessed healthcare domains. The healthcare policy makers should endeavour to improve health insurance coverage, and utilize identified factors in policy formulation and implementation to encourage utilization of health insurance among patients.

Keywords: Hypertension management, Insurance, Quality of care, Teaching hospital, Uninsured.

Introduction

Systemic hypertension (SH) is a chronic medical disease that can cause life-threatening complications when poorly managed. It is a non-communicable disease (NCD) that causes death globally and nearly 80% of NCDs occurs in low and middle income countries[1]. The global prevalence of hypertension is 26.4% and only 1 in 5 people have adequately managed blood pressure[2]. The management of SH is lifelong, with resultant enormous financial strain on the patients and a heavy economic burden on the healthcare systems and society at large[3]. The financial strain affects the choice of patients among competing daily expenditures like paying for food, shelter and other utilities[4]. The strain on the finances of these patients impacts negatively on their healthcare seeking behaviours and tend to worsen the outcome of the disease[4,5].

Some studies have reported that socioeconomic status affects healthcare seeking behaviour and people with lower socioeconomic status have a higher disease morbidity and mortality[6-8]. The degree to which high quality of health services are provided by increasing the level of the preferred health outcomes is defined as quality of care by the Institute of Medicine[9]. To protect patients and provide them access to quality healthcare in Nigeria, the Federal Government introduced the National Health Insurance Scheme (NHIS), now the National Health Insurance Authority (NHIA) in 2005. This scheme provides financial risk protection and cost-burden sharing against the high cost of quality healthcare, through the provision of accessible and affordable healthcare services[10-12]. Health insurance is employed as a useful tool to protect individuals particularly people in the low and middle socioeconomic strata against unexpected huge medical bills

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during illness[13]. NHIA aims to facilitate provision of needed healthcare services without financial barrier or hindrances between the patient and healthcare provider[14,15].

Studies have demonstrated that health insurance had the potential to offer substantial protection in times of an emergency medical financial need[16,17]. There have also been contrary reports on the impact of health insurance: some researchers reported positive impacts of health insurance particularly on alleviating the financial strain of patients with chronic medical diseases like SH[18-20], while others presented divergent findings; John et al reported that despite the fact that some patients were insured, one-fourth of them found the cost of healthcare as a major financial burden[21], whereas Ibrahim and O'Keefe found in their study that there was no difference in birth weights of babies at birth regardless of whether their parents had health insurance or not[22]. A study in China by Sun et al. reported that the health insurance scheme provided a very limited degree of financial protection for patients with chronic medical illnesses[20]. With these reports, it is well noted that there are variations in the impacts of health insurance on reducing the financial strain and improving the quality of healthcare received by patients with chronic medical diseases like SH[23]. The disparities in reports from previous studies necessitated the conduct of this study to compare the experiences of insured and uninsured patients with SH regarding the quality of healthcare services received at the University of Ilorin Teaching Hospital (UITH). A robust assessment of the quality of healthcare services delivery was employed in the study. These includes adequacy of resources, financial access to healthcare, effectiveness of treatment, interpersonal relationship aspects of healthcare, fairness aspects of healthcare, among others.

Materials and Methods

Study design, Area & Population

This was a comparative cross-sectional study to assess the level of patient satisfaction with the quality of hypertension care received by both insured and uninsured patients, at the Medical Outpatient Department (MOPD) clinics of UITH, a 600-bed tertiary healthcare institution and NHIA accredited healthcare provider located in Ilorin, Ilorin East local government area of Kwara state, North Central, Nigeria. The healthcare facility attends to an estimated number of more than two thousand patients with SH yearly.

The study population included insured and uninsured patients with SH attending the MOPD of the hospital between May to July 2023.

Sample Size Determination

The formula for calculating the minimum sample size when comparing differences between two independent populations or groups was employed in determining the sample size per group[24].

$$n = \frac{2(Z_{\alpha/2} + Z_{\beta})^2 P(1-P)}{(p_1-p_2)^2}$$

The level of significance (α) and power (1 − β) being set at 5% and 80% respectively

n= minimum sample size for each group

$Z_{\alpha/2} = Z_{0.05/2} = Z_{0.025}$ = Standard normal deviate corresponding to probability of type 1 error (α) at 5% (from the Z table) = 1.96

$Z_{\beta} = Z_{0.20}$ = Standard normal deviate corresponding to probability of type 2 error (β) at 20% = 0.842

p_1 is the proportion of insured Patients Satisfaction in a previous similar study = 78.6% 25

p_2 is the proportion of patient level of Satisfaction with emergency paediatric services from a previous study = 58.1% 26

P = Pooled prevalence = (p1 + p2)/2 = (0.79 + 0.58)/2 = 0.69

p1 – p2 = 0.79 - 0.58= 0.21

Therefore,

$$\text{Therefore, } n = \frac{2(1.96+ 0.84)^2 \times 0.69(1- 0.69)}{(0.21)^2} = \frac{3.351}{0.044}$$

= 76

80% response rate: n = 76/0.8 = 95. Thus, sample size of 95 per group was used for the study.

Sampling Technique

The sampling was two-staged; in the first stage, patients with SH were stratified into those insured and uninsured. Then, the respondents were selected from each group by systematic random sampling.

Inclusion and Exclusion Criteria

Adult patients aged 18 years and above being managed for SH, who consented to participate in the study and have accessed care in the hospital not less than three different occasions within the past one year were included in the study so as to get information from only those with considerable experience of services utilization in the healthcare facility. The insured patients were limited to health insurance enrolees under NHIA. Patients requiring emergency medical attention, paediatric age group, pregnant, adolescent patients, and patients on admission were excluded from the study.

Research Instrument and Data collection

Data collection was done by trained research assistants, using interviewer-administered anonymous structured close ended questionnaire, developed by the researchers, adapting the Consumer Assessment of Health Plan Strategy, which assesses patients' experience from the patient's own perspective[27], and information from previous related studies[11,12,14]. The questionnaire assessed the socio-demographic characteristics of the patients, services utilization, and ascertained the level of satisfaction with some selected service indices like hospital accessibility and environment, patient waiting time, providers' attitudes, providers' education and counselling, availability and affordability of drugs, cost of care and services and perception about health insurance and out-of-pocket payment. The research assistants provided support, explanation and translation into Pidgin English and Yoruba language, when required by the patient. The questionnaire was pretested in the General hospital, Ilorin, for clarity, applicability and acceptability.

Data Analysis

Data analysis was done using Statistical Package for Social Sciences (SPSS version 27), and frequency tables and

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Table 1: The Socio-demographic Characteristics of the respondents (n = 190)

Socio-demographics	Insured N=95(%)	Uninsured N=95(%)	2	p-value
Age(years)				
20 – 29	1(1.1)	1(1.1)	7.121	0.971
30 – 39	9(9.5)	14(14.7)		
40 – 49	25(26.3)	20(21.1)		
50 – 59	43(45.3)	33(34.7)		
60	17(17.9)	27(28.4)		
Mean age	51.7±9.3	52.3±11.1		
Sex				
Male	36(37.9)	34(35.8)	3.297	0.069
Female	59(62.1)	61(64.2)		
Marital status				
Single	3(3.2)	11(11.6)	13.467	0.143
Married	89(93.7)	69(72.6)		
Divorced	0(0.0)	1(1.1)		
Widowed	2(2.1)	14(14.7)		
Separated	1(1.1)	0(0.0)		
Religion				
Christianity	43(45.3)	40(42.1)	9.183	0.070
Islam	52(54.7)	53(55.8)		
Traditional	0(0.0)	2(2.1)		
Educational Qualification				
None	2(2.1)	12(12.6)	6.868	0.651
Primary	5(5.3)	15(15.8)		
Secondary	21(22.1)	29(30.5)		
Post-Secondary/Tertiary	67(70.5)	39(41.1)		
Employment Status				
Not employed	8(8.4)	4(4.2)	23.716	0.005*
Employed	58(61.1)	46(48.4)		
Self-employed	12(12.6)	34(35.8)		
Retired	17(17.9)	11(11.6)		
Medical Condition/s being managed				
HTN	87(91.6)	78(82.1)	1.599	0.572
HTN & other comorbidities (DM/CKD/TB/HIV/SLE)	8(8.4)	17(17.9)		
Services Utilization (within the past 1 year)				
Uncertain	8(8.4)	16(16.8)	3.510	0.476
< 6 times	28(29.5)	57(60.0)		
≥ 6 times	59(62.1)	22(23.2)		

cross tabulations were generated. Services utilization was measured using the number of hospital visit. Satisfaction score was rated in a five-point Likert scale as follows: Patient satisfaction was scored on a 5-point Likert scale with 1 and 5 indicating the lowest and highest levels of satisfaction respectively. Very satisfied = 5 points/100%, Satisfied = 4 points/80%, Fairly Satisfied = 3 points/60%, Dissatisfied = 2 points/40%, and Very dissatisfied = 1 point/20%, with the following operational percentage range definitions: excellent (90%-100%), very good (70%-89%), good (50%-69%), fair (30%-49%), and poor (0%-29%)[15]. Chi-square test was used to determine statistical significance of observed differences in the categorical variables. The Level of significance (p-value) was ≤ 0.05.

Ethical Consideration

Ethical approval for the study was duly sought and obtained from the Ethical Committee of University Ilorin Teaching Hospital, Ilorin, Kwara State. Participation was fully voluntary, confidential and anonymous.

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Table 2: Patients' Satisfaction with various aspects of the services provided

VARIABLE	Insured Mean Score	Uninsured Mean Score	p-value (t-test)
Hospital Accessibility	72.6±23.2	65.9±28.0	0.095
Hospital Reception/ Card Record	77.3±18.1	73.1±22.9	0.130
Doctor's Consultation	83.2±13.1	82.4±23.1	0.761
Hospital Staff's Attitude	84.4±14.6	82.9±17.7	0.541
Waiting Time	63.6±24.9	48.0±25.8	0.001*
Quality of Prescribed Drugs	63.8±26.3	69.7±23.3	0.065
Drug Availability	61.9±25.6	64.6±26.3	0.458
Drug Cost and Affordability	73.9±24.1	56.2±25.0	0.001*
Cost of Services and Care	74.1±24.0	59.8±26.0	0.001*
Education & Counselling on Medical Condition/ medications/ Diet/Lifestyle	86.5±13.8	90.1±14.0	0.084
Overall Mean Satisfaction	74.1±20.8	69.3±23.2	0.417

Table 3: Quality of Hypertension care

VARIABLE	Insured N=95(%)	Uninsured N=95(%)	2	P-value
ECG done within the past 12 months				
Yes	23(24.2)	29(30.5)	0.282	0.400
No	72(75.8)	66(69.5)		
Eye examination done within the past 1 year				
Yes	32(33.7)	40(42.1)		
No	63(66.3)	55(57.9)	0.450	0.325
Fasting Lipid Profile done within the past 1 year				
Yes	38(40.0)	56(58.9)	0.650	0.484
No	57(60.0)	39(41.1)		
Urinalysis done on every clinic day				
Yes	16(16.8)	14(14.7)	0.077	0.568
No	79(83.2)	81(85.3)		
Vital Signs checked on every clinic day				
Yes	95(100.0)	91(95.8)	-	-
No	0(0.0)	4(4.2)		
Weight (±height) checked at every clinic visit.				
Yes	84(88.4)	66(69.5)	0.062	0.553
No	11(11.6)	29(30.5)		

Limitations of the Study

The study was conducted in only one healthcare facility, which may limit the generalizability of the findings to other healthcare facilities and regions across the country. Also, the study focused only on out-patients, excluding inpatients; therefore, it might be difficult to generalize the findings as the perceptions of quality of care among in-patients can vary significantly based on their expectations of care.

However, this study has contributed valuable insights, data, and references for consultation and comparative purposes. This study will also stimulate further studies within the healthcare delivery system in Nigeria and chart a course to areas requiring improvement.

Results

Sociodemographic Characteristics of Respondents

The mean ages of both the insured and uninsured were 51.7±9.3 and 52.3±11.1 respectively. Both insured and insured groups showed a pattern of progressive increase in frequency among the age groups, up to the age group 50 -59 years and then a decline in those 60 years and older (17.9% vs 28.4%). There were more female than male respondents both in the insured (62.1% vs37.1%) and uninsured group (64.2% vs 35.8%). Majority of the respondents in both groups were married, with a higher number of married respondents among the insured (93% Vs 72.6%). The level of education among the insured was higher with 70% having post-secondary qualification compared to 41% in the uninsured group.

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Table 4: Patients' Perception about Health Insurance and the Out-of-pocket Payment System

VARIABLE	Insured N=95(%)	Uninsured N=95(%)	2	P-value
Patients' Preference				
Prefer Health Insurance	88(92.6)	69(72.6)	0.651	0.380
Prefer Out-of-pocket payment	7(7.4)	26(27.4)		

Majority of the respondents in both groups (91% vs 82%) were being managed for systemic hypertension only, while a small fraction had other comorbidities. It was observed that service utilization within the last one year was more among the insured than the uninsured (62.1% vs 23.2%). However, none of these observations were statistically significant. On the other hand, 61.1% of the insured group were employed compared with 48.4% in the uninsured group, while 35.8% of the uninsured were self-employed compared with only 12.6% in the insured group. This finding was statistically significant. (Table 1)

Patients' satisfaction with the healthcare services

The overall mean satisfaction with services rendered in the facility was above average in both groups, with the insured having a higher satisfaction mean score of 74.1±20.8 compared with 69.3±23.2 in the uninsured. The insured group had higher satisfaction mean scores compared with the uninsured in most of the domains assessed which include hospital accessibility (72.6±23.2 vs 65.9±28.0), hospital reception/card records (77.3±18.1 vs 73.1±22.9), hospital staff attitude (84.4±14.6 vs 82.9±17.7), waiting time (63.6±24.9 vs 48.0±25.8), drug cost and affordability (73.9±24.1 vs 56.2±25.0). These observations were only significant for the domains of waiting time, drug cost/ affordability and cost of service of care with p-values of < 0.0001 respectively. While the uninsured group had higher satisfaction mean scores in the domains of quality of prescribed drugs (69.7±23.3 vs 63.8±26.3), drug availability (64.6±26.3 vs 61.9±25.6), and education and counselling (90.1±14.0 vs 86.5±13.8), all with no statistical significance in the observed differences. (Table 2)

Quality of Hypertension Care

Higher number of the respondents in the insured group compared with the uninsured had urinalysis (16.8% vs 14.7%), vital signs (100% vs 95%) and weight check (88.4% vs 69.5%) on every clinic day. Whereas ECG (24.2% vs 30.5%), eye examination (33.7% vs 42.1%) and fasting lipid profile (40.0% vs 58.9%) were done more among the uninsured compared with the insured respectively. There was no statistical significance in these observations. (Table 3)

Patients' perception about health insurance and out-of-pocket payment

Majority of the respondents in both groups preferred health insurance compared with the out-of-pocket payment system as a means of healthcare funding, with more of the respondents in the insured group (92.6%) compared with the uninsured group (72.6%). As regards the perception of respondents concerning the quality of care accessed: close to 80% of the insured group and 69.5% of the uninsured group believed that insured patients had better access to health services than the uninsured patients. Also, most of the respondents in both groups (93.7% vs 89.5%) agree that NHIA is commendable and its coverage should be extended to all Nigerians. In addition, 90.5% of the insured and 95.8% of the uninsured stated that they will recommend the hospital to others. These observations were however not statistically significant. (Table 4)

Discussion

The study found that the insured group had more respondents in regular employment compared with the uninsured group who were mostly self-employed. This is similar to other findings by Daramola et al and Erinoso et al[28-31]. This is not unexpected as the NHIA had mainly enrolees who were employed in the formal sector[32].

Also, service utilization was higher among the insured than the uninsured. Though, this observation was not statistically significant; a study by Daramola et al,[29] in a similar setting in North-East Nigeria, found that insured persons are more likely to attend healthcare facilities more than those who are not insured.

The overall satisfaction of the care accessed was higher among the insured than the uninsured in this study. This agrees with other studies done in Nigeria[33,34], Ghana[35], Ethiopia36, Saudi Arabia[37], Indonesia[38], and India[39]. The higher satisfaction level noted among the insured was as a result of the higher satisfaction levels in the domains of waiting time, drug cost/ affordability and cost of service of care, compared with the uninsured in this study. This is in agreement with a study by Ipinimo et al who found that insured patients with SH were significantly less likely to have financial difficulties with drug and investigation care[40]. These are domains of quality of health care services that have been shown to predict higher satisfaction among insured compared with uninsured in other studies[33,35]. Also, this result might not be unconnected with the fact that the healthcare facility has a dedicated service and care structure for insured patients.

This study however, differs from studies in Nigeria and Ghana that reported higher satisfaction among the uninsured[29,41,42]. The fact that, this study was done mainly among patients with SH gives room for a difference as perception of quality among insured versus uninsured could be affected by population, region, health facility, available services and health care worker differences[43].

This study found no significant differences in the overall quality of hypertension care received by both the insured and uninsured. However, the significant findings of higher satisfaction with drug cost/affordability and cost of service among the insured gives opportunity for adequate hypertension management as some studies have reported that patients covered under health insurance have been found to have better blood pressure management than the unisured[44-47].

It is worth noting the lower conduct of ECG, eye examination and fasting lipid profile among the insured compared with the uninsured though not statistically significant. This may be related to cumbersome referral processes, referral delays, or cost limiting measures like decline of referrals for such tests by HMOs[48].

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Majority of respondents in both groups in this study stated that they preferred health insurance probably because it is affordable and less costly[49]. This also probably accounted for majority of the respondents in both groups positing that the insured patients have better access to health services than uninsured patients. One critical strategy adopted by nations globally to reduce financial barriers and enhance healthcare access is health insurance .

In the same vein, high percentage of both the insured and uninsured stated that health insurance is commendable and that government should extend the coverage to all Nigerians. However, there have been complaints of drug unavailability which have been reported by many studies[11,12, 15, 28-30, 33,34], and this calls for action.

Most of the participants (insured and uninsured) also stated that they will recommend the hospital to others, though some studies have reported recurrent strike actions by hospital staff as one of major causes of patient dissatisfaction51,52, calling the government to look into it and provide a permanent solution.

Conclusion

This study showed that both insured and uninsured patients with systemic hypertension had about equal treatment. However, the insured patients with hypertension were generally more satisfied with the quality of healthcare services assessed, though the difference was not statistically significant but may inform reform in health insurance by policy makers. The government at all levels and hospital administrators should endeavour to expand health insurance coverage, and pay attention to the identified problems in implementation and encourage utilization among patients.

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