



ORIGINAL RESEARCH

Factors influencing the choice of facilities among enrollees of a prepayment scheme in Ibadan, Southwest Nigeria

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Abstract

Aims: Factors that influence the personal choice of a health care facility among health care consumers vary. Currently, what influences the choice of health facilities among enrollees under the National Health Insurance Scheme (NHIS) is not known. This study aimed to assess what influences the choice of facilities in the NHIS of Nigeria.

Methods: This was a descriptive cross-sectional study conducted among enrollees in selected NHIS facilities in the 11 Local Government Areas (LGAs) of Ibadan, Nigeria. A total of 432 enrollees were selected and were interviewed. A WHO-USAID semi-structured interviewer-administered questionnaire was used to obtain relevant data. Data collection was between October and December 2019. Data were analyzed using STATA version 12.0 ($\alpha = 0.05$).

Results: At unadjusted OR, older respondents (OR 3.24, CI = 2.52-4.18, $p = <0.0001$), and those who had attained the tertiary level of education (OR 3.30, CI 2.57-4.23, $p <0.0001$) were more likely to make a personal choice of health care facilities. A similar pattern was observed among respondents who were in the high socioeconomic group (OR 4.10, CI 3.01-5.59, $p = <0.0001$). However, at Adjusted OR, only high socio-economic status was a predictor of personal choice of health care facility (OR 1.92, CI 1.21-3.05, $p = 0.005$).

Conclusion: This study is suggestive that a need for and the ability to afford the cost of care influence the choice of health facilities. Policies that promote health literacy in the general populace will enhance the capability of individuals to make a personal choice of health facilities. Stakeholders should prioritize this for policy.

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Authors' contributions:

David Adewole conceived and designed the study. Temitope Ilori did data collection and analysis. Both authors contributed equally to the manuscript write-up. The two authors also read through the manuscript draft the second time and agreed to the final manuscript.

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Introduction

While some studies suggest that patients actively choose healthcare facilities evidenced by a significant level of health literacy (1), a substantial proportion of patients do not consider the choice to be very important (2). Many factors have been ascribed to influence the choice of healthcare facilities. Reliance on physician advice/referrals, advice of friends and relatives, and patronizing the nearest health care facilities are some of the means of choosing health care facilities. Socio-demographic factors such as age, sex, educational status and socioeconomic status, cost of care, the severity of illness, existence of multiple morbidities/comorbidity, and past experiences with a facility all influence choice in different ways. Cost of care and the ability to pay to play a role in the active choice of facilities (3). However, for those who are on a health care plan, the cost of care may not necessarily be an incentive in the choice of a preferred health care facility as health insurance organizations partly determine the facilities that are available to patients (4). The National Health Insurance Scheme (NHIS) of Nigeria is a social health insurance program established in the year 2005. Currently, the total population coverage is 4 million lives, of which the formal sector constitutes 64% compared with the informal sector. Major stakeholders in the scheme are the NHIS (government) officials, which provide policy guidelines, the Health Maintenance Organizations (HMOs) who are the insurers, and health care providers. By the Act that established the scheme, enrolment in the scheme is voluntary. A principal enrollee is entitled to register a spouse and four children below the age of eighteen years under the scheme. The principal enrollee chooses a health care facility to receive care (5). Presently, it's not clear what factors influence the choice of health care facilities among enrollees in

the scheme. The present study aimed to determine this. Findings would be useful to understand better the level of health literacy of enrollees under the scheme. This will provide an avenue to addressing any existing deficiency in the process of choice of facilities. This could serve as a guide in similar schemes and settings.

Methods

Study design and area:

This is a descriptive cross-sectional study. It was conducted in the 11 Local Government Areas (LGAs) of Ibadan, Nigeria. The 11 LGAs were made up of 5 urban and 6 semi-urban areas. The semi-urban LGAs formed an outer ring of the inner 5 LGAs (6). The estimated population of the 11 LGAs was about 3 million based on the projection using the figure from the 2006 Nigeria population census as the base year (7). There were several health care facilities at the primary, secondary, and tertiary care levels in the study area.

Sample size estimation

In this study, factors that influence the choice of health care facilities are the main outcome variable. Satisfaction with services is known to influence the choice of facilities, the proportion of the enrollees who were satisfied with the choice of a facility in a previous study in Nigeria was 40.7% (8). Using the Leslie-Kish formula, (9) calculated minimum sample size was 420.

Sampling strategy:

A list of all health care facilities within the study area (11 LGAs); primary, secondary, and tertiary care level facilities was obtained from the Oyo State Ministry of Health. Next, a list of all NHIS accredited facilities within the study area was obtained from the NHIS Office in Ibadan. For the choice of enrollees, eleven (11) NHIS accredited health facilities, one (1) facility in

each of the 11 LGAs were selected by simple random sampling. The selected facilities were visited and the number of enrollees in each of these facilities was verified. Proportional allocation of the estimated sample size (420) was done based on the number of enrollees across the selected NHIS accredited facilities.

Profile of selected facilities

There are three levels of care in the health system of Nigeria. These are the primary, secondary, and tertiary levels. The primary is the first level of care and entry point of individuals to the health system. The secondary serves as the referral centre for the primary, while the tertiary is the referral centre for the secondary level. The secondary provides general medical and laboratory services, as well as specialized health services, such as surgery, pediatrics, obstetrics, and gynecology to patients referred from the primary health care level, and this is generally uniform. Ownership of these facilities cuts across the private and the public (government). Ownership in the private sector is either private profit-based or non-for-profit faith-based organizations (10). In the NHIS arrangement, the primary level of care is not engaged to provide services. There is only one (1) tertiary level facility within the study area. Only the secondary and the tertiary levels do. In this study, only the secondary level of care facilities was selected. Due to the small number (only one [1] in the study area) compared to NHIS accredited secondary health care facilities, and also because of better infrastructural facilities and human resources availability compared to secondary health care facilities, the only available tertiary health care facility in the study area was not selected. All faith-based health care facilities in the study area (three – 3) were however purposefully selected into the study, while others (non-faith-based private) were

selected using stratified systematic sampling to allow for a representation method of sampling.

Participants' selection

A list of NHIS enrollees waiting to receive care in the outpatient unit of a selected health facility was obtained from the medical records department of the facility. Eligible individuals were the principal enrollees or spouses (excluding dependents under the age of 18 years) and had enrolled in the facility for at least one year before the commencement of the study. This was to increase the possibility that study participants had an appreciable level of interaction with the health system under the scheme that will enable appropriate responses from them (8). Among this population, enrollees who began using the selected facilities before the commencement of the health insurance scheme, as well as enrollees who were health care workers in these facilities were excluded from the study. A sampling frame was generated, a sampling interval was determined, and systematic random sampling was used to select eligible participants. Systematic sampling was chosen because it eliminates the phenomenon of clustered selection and a low probability of data contamination. The disadvantage of using a systematic sampling technique is noted and is considered a study limitation. The hospital card numbers of the enrollees who were interviewed were documented and kept safe.

Data collection

Selected enrollees (n = 420) in the selected NHIS accredited health facilities were interviewed with the aid of an adapted WHO-USAID Demographic and Health Survey semi-structured interviewer-administered questionnaire (United States Agency for International Development. The Demographic and Health Surveys). Enrollees who had earlier been interviewed during the study but came back to the clinic for care

were deliberately identified and excluded. This was done so as not to interview such individuals a second time, and it was carried out by cross-checking the hospital number of the prospective interviewee (enrollee) in the list of hospital numbers that were earlier documented for safekeeping. This exercise was repeated daily until the allocated number of enrollees in each of the facilities was interviewed.

Quantitative data analysis

Choice of health care facilities was categorized into personal and choice-based on advice. While personal choice is the one made by the individual enrollee, a choice based on advice was the one made with the assistance of other individuals and entities such as friends and colleagues, referral physicians, family members, and insurers. Quantitative data were analyzed using STATA. A Chi-square test was used to determine the association between socio-demographic characteristics and the choice of health care facility. Following this, statistically significant variables ($\alpha = 5\%$) were entered into multiple logistic regression models to determine

the strength of association between the dependent and independent variables (predictors).

Results

The data as shown in Table 1 depicts that more than three-quarters, 331 (76.6%) of the respondents were at least 35 years of age. About three-fifths, 263 (60.9%) of the respondents were females, while 344 (79.6%) had tertiary level of education, 319 (73.8%) were civil servants. Those who were in the high socio-economic status were more, 255 (59.0%) compared to those who were in the low group. About one-third of 134 (31.0%) claimed to have multiple morbidities, and 219 (67.4%) sought information about the quality of service in the facility before enrolment. Almost three-quarters, 320 (74.1%) of the study participants claimed to have personally chosen health care facilities where current care is received under the scheme. The total number of respondents eventually interviewed was 432 (2.8% above the minimum estimated sample size).

Table 1: Sociodemographic characteristics of respondents

Socio-demographic characteristics	Frequency N = 432	Percent
Age Group		
< 35 years	101	23.4
35 and above	331	76.6
Sex		
Male	169	39.1
Female	263	60.9
Marital Status		
Married	415	96.1
Others	17	3.9
Level of Education		
Less than Tertiary	88	20.4
Tertiary	344	79.6

Occupation		
Civil Servant	319	73.8
Private	113	26.2
Socio-economic Status		
Low	177	41.0
High	255	59.0
Presence of multiple morbidities		
Absent	298	69.0
Present	134	31.0
Prior information about quality of care in facility		
Yes	291	67.4
No	141	32.6
Method of choice of facility		
Personal Choice	320	74.1
Choice based on Advice	112	25.9

Table 2 below shows

the distribution of respondents by socio-demographic characteristics and by sector. The majority, 319 (73.8%) were civil servants. Overall, on the choice of health care facilities, the proportion of those who made a personal choice of facilities among civil servants compared with those who were

from the private

sector was much higher. However, this was not statistically significant: $\chi^2 = 0.06$, $p = 0.94$. However, choice of facilities was significant across age groups, $\chi^2 = 28.33$, $p < 0.001$, level of education $\chi^2 = 10.6$, $p = 0.001$, and status of co-morbidities $\chi^2 = 12.2$, $p < 0.001$.

Table 2: Distribution of respondents by socio-demographic characteristics and by place of work

Socio-demographic characteristics	Public n(%)	Private n(%)	χ^2 (P-value)
Age Group			28.33(<0.001)
< 35 years	54 (53.5)	47(46.5)	
35 and above	265(80.1)	66(19.9)	
Sex			2.1 (0.11)
Male	132(78.1)	37(21.9)	
Female	187(71.1)	76(28.9)	
Marital Status			
Married	305(73.5)	110(26.5)	
Others	14(82.4)	3(17.6)	
Level of Education			10.6 (0.001)
Less than Tertiary	53(60.2)	35(39.8)	
Tertiary	266(77.3)	78(22.7)	
Socio-economic Status			0.13(0.71)
Low	129(72.9)	48(27.1)	

High	190(74.5)	65(25.5)	
Presence of multiple morbidities			12.2 (<0.001)
Absent	235(78.9)	63(21.1)	
Present	84(62.7)	50(37.3)	
Prior information about quality of care in facility			0.01(0.98)
Yes	215(73.9)	76(26.1)	
No	104(73.8)	37(26.2)	
Method of choice of facility			0.06 (0.94)
Personal Choice	236(73.8)	84(26.2)	
Choice based on Advice	83(74.1)	29(25.9)	

Table 3 below shows the pattern of choice of health care facilities among NHIS enrollees. Generally, respondents claimed the health care facilities where they enrolled for care under the scheme were chosen by personal choice. However, older respondents, married individuals, and those who attained a tertiary level of education were significantly more likely to do so than their respective counterparts (χ^2 4.11, $p = 0.043$;

χ^2 6.73, $p = 0.01$; χ^2 6.27, $p = 0.012$) respectively. Also, choice of health care facilities was statistically significant among respondents who were in high socioeconomic status compared with those who were in the low group, (χ^2 12.94, $p = <0.00001$) and as well among those who had multiple morbidities compared with those who were otherwise (χ^2 4.30, $p = 0.038$).

Table 3: Percentage distribution of the enrollees according to choice of health care facilities by socio-demographic characteristics

	Personal Choice	Choice based on advice	Total	χ^2	P-value
Socio-demographic characteristics					
Age group				4.11**	0.043
< 35 years	67(66.34)	34(33.66)	101		
35 and above	253(76.44)	78(23.56)	331		
Sex				0.034	0.855
Male	126(74.56)	43(25.44)	169		
Female	194(73.76)	69(26.24)	263		
Marital Status				6.73***	0.01
Married	312(75.18)	103(24.82)	415		
Others	8(47.06)	9(52.94)	17		
Level of Education				6.27**	0.012
Less than Tertiary	56(63.64)	32(36.36)	88		
Tertiary	264(76.74)	80(23.26)	344		
Occupation				0.0055	0.941
Civil Servant	236(73.98)	83(26.02)	319		
Private	84(74.34)	29(25.66)	113		

Socio-economic Status				12.94***	<0.00001
Low	115(64.97)	62(35.03)	177		
High	205(80.39)	50(19.61)	255		
Multiple Morbidities					
Absent	212(71.14)	86(28.86)	298	4.30**	0.038
Present	108(80.6)	26(19.4)	134		
Information on quality				0.69	0.405
Yes	212(72.85)	79(27.15)	291		
No	108(76.60)	33(23.40)	141		
Closer facility				2.01	0.157
Yes	115(78.23)	32(21.77)	147		
No	205(71.93)	80(28.07)	285		

At Adjusted OR, while the presence of multiple morbidities was weakly significantly associated with a personal choice of health care facility (OR 1.63, CI 0.97-2.74, p = 0.063, being in the high socio-economic

class was highly significantly associated with a personal choice of health care facility (OR 1.92, CI 1.21-3.05, p = 0.005). Table 4 (below).

Table 4: Logistics regression model of predictors of personal choice of facilities among respondents

Socio-demographic characteristics	Unadjusted OR			Adjusted OR		
	OR	95% C.I	p-value	OR	95% C.I	p-value
Age group						
< 35 years (ref.)						
35 and above	3.24***	2.52-4.18	<0.0001	1.56	0.89-2.73	0.123
Sex						
Male	2.93***	2.07-4.14	<0.0001	0.88	0.56-1.40	0.601
Female (ref.)						
Marital status						
Married	3.03***	2.42-3.78	<0.0001	0.86	0.42-1.79	0.691
Others (ref.)						
Level of education						
Less than Tertiary (ref.)						
Tertiary	3.30***	2.57-4.23	<0.0001	1.47	0.88-2.48	0.145
Occupation						
Civil Servant (ref.)						
Private	2.90***	1.90-4.42	<0.0001	1.08	0.63-1.84	0.781
Socio-economic status						
Low (ref.)						
High	4.10***	3.01-5.59	<0.0001	1.92***	1.21-3.05	0.005
Multiple morbidities						

Absent (ref.)						
Present	4.30***	2.71-6.37	<0.0001	1.63*	0.97-2.74	0.063
Prior information about quality of care in facility						
Yes (ref.)						
No	3.27***	2.22-4.83	<0.0001	1.12	0.69-1.82	0.642
Knowledge of NHIS facility closer to residence						
Yes	3.59***	2.43-5.32	<0.0001	1.21	0.75-1.98	0.432
No (ref.)						

Discussion

The older age group respondents were more than double the younger ones. This is at variance with the 2013 NDHS and other reports that the age distribution of Nigeria population and similar other countries in the sub-Saharan African Countries (SSA) characteristically have (5, 11, 12). The observation in this study may be partly due to a long embargo on employment in the formal sector that has resulted in the population of the current formal sector employees, the majority of whom constituted the study respondents, has grown to older age without a concomitant younger population for a gradual replacement. Another factor could be that the study population (NHIS enrollees) was restricted to a select privileged few unlike if the selection were to be from a more representative general population. However, the population distribution of respondents by sex and by enrolment under the NHIS, and by marital status reflects the latest NDHS Reports (11, 13). The higher proportion of female respondents may be a reflection of the known better health-seeking behaviour among women compared to that of men (14). It is an expected observation that the majority of the respondents' attained tertiary level education as enrollees under the NHIS are mainly individuals in the formal sector employment of the Federal Government of Nigeria (5). In this study, respondents who were civil servants were almost three times those who were

from the private sector. This is in order with credible sources that only a handful of the present enrollees under the NHIS were voluntary/private contributors (5, 15). This is also similar to the general pattern observed in some other countries, such as in Ghana (16) and Kenya, in these countries as it is common in other poor developing SSA countries, the design of social health insurance schemes tends to be unfavourable for the informal sector population who, compared with those in the formal sector, are usually burdened with low and inconsistent income (4). As a result, the majority of the people in this category are compelled to pay health care costs through of pocket method which is associated with the inequity of access to health care and poor health outcomes (17). Contextually designed strategies to addressing these challenges will assist in turning around the picture and minimize the likely inequity of access among the informal sector population.

Several factors interplay differently in different health situations in the same individual to influence the choice of health care facilities. These factors cut across both the consumer and facility sides of the health care market. Literature on the choice of health care facilities generally agrees that health care consumers hardly make an active choice of facilities/facilities (2), and, that they more often than do not consider the choice of health facilities to be important. As a result, consumers mostly rely

on the assistance of others for the choice of health facilities (2, 18). For that purpose, friends, family members, and general practitioners are the usual sources of influence (18, 19). In addition to these, the presence or absence of a health insurance policy also influences the choice of facilities since in most cases, insurers determine the specific facilities that are available to health care consumers (2, 20). In addition, a knowledge of the quality of the care, (21) and the dimensions of care, functional and technical (22) available in health care facilities play a role in the choice of health facilities especially when individuals are well informed about such (1). Health care consumers' attributes such as age, sex, marital status, level of education, and type of occupation are also some of the factors that influence the choice of facilities (2, 20). Others are the socio-economic status as well as the presence or absence of comorbidities and perceived severity of illness in individuals (23, 24). There are contrary opinions about the younger age group, while some claimed that this group of people make an active choice of facilities, (2), some are of the contrary view, and that passive choice is more common among them (20, 25). Female sex was reported to be associated with passive choice in a previous study in Nigeria (26). Highly educated individuals and those in the high socioeconomic group have been reported to be more likely to actively choose health care facilities (24, 27). In this study, the personal choice of health care facilities was more likely with more vulnerable individuals such as being married, older individuals, and the presence of multiple morbidities. Findings from previous studies corroborate these findings that this category of people is less likely to tolerate the risk of uncertainties and thus, are less favourably disposed to accepting the choice of health care facilities through a third party (2, 20, 23, 28). Also, the acquisition of tertiary education and being in the high socio-economic class was associated with the active

choice of health care facilities. In this environment, the tertiary level of education is a factor of employment in the formal sector (civil service), who characteristically enjoy a consistent and higher level of income compared with those in the informal sector (4). The synergy of higher income and education could be a strong factor in exposure to better access to beneficial health-related information. This inadvertently enhances the health literacy of such individuals and the tendencies to obtain, process, and compare different health care facilities and services while making a choice (1). It is noteworthy that, when health care consumers have the privilege to choose health care facilities and insurers, it encourages healthy competition, which in turn enhances efficient delivery of quality health services (2, 18, 29, 30). However, of all the factors associated with a personal choice of health facility, high socio-economic status and the presence of multiple morbidities had more influence in the choice of health facilities. It should be noted that the number of those who claimed personal choice of a health facility was almost three times the number of those who claimed a choice based on advice. This finding was in disagreement with the generally held pattern of passive selection of health care facilities by the majority of consumers compared to a few who do active selection (2, 18, 19). Again, high socio-economic class and level of education among the respondents in this study could be contributory factors. In conclusion, this study shows that various socio-demographic factors influence the choice of health facilities among individuals. However, a need for and the ability to afford the cost of care influences the choice of health facilities the most, as demonstrated by the presence of multiple morbidities and a high socio-economic class. It should also be noteworthy that the majority made a personal choice of health facilities. This may not be unconnected with a high level of general literacy which may have had a direct impact

on health literacy. Stakeholders should note this for policy purposes. As an emphasis on the benefits of personal choice of health facility, it is recommended that health literacy is promoted in the general populace. This will promote healthy competition among health care facilities and providers and enhance the efficient delivery of quality health care. The limitation of this study is the weakness associated with the systematic sampling technique. Findings

from a bigger study would have been more representative. It is recommended that a larger more representative study is conducted. It is recommended that a larger more representative study is conducted. This should include rural and remote populations to better differentiate especially education and income levels and the effect of these on the choice of health care facilities.

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