The bypassing of healthcare facilities among National Health Insurance Scheme enrollees in Ibadan, Nigeria

Adetola O. Oladimeji*†, **David A. Adewole and Folashayo Adeniji**

Department of Health Policy and Management, Faculty of Public Health, University of Ibadan, Nigeria

*Corresponding author: Tel: +234 7037169599; E-mail: adetoladimeji18@gmail.com

†Present address: Solina Center for International Development and Research

Background: Bypassing occurs when patients knowingly visit a health facility other than the one they live nearest to. In Ibadan, southwest Nigeria, the majority of enrollees in the National Health Insurance Scheme (NHIS) receive medical care in just 12% of the available NHIS-accredited facilities. Given that enrollees access healthcare services at highly subsidized rates under the scheme, this study aimed to determine the factors responsible for the observed distribution of enrollees across these health facilities.

Methods: The study was a descriptive cross-sectional survey conducted among NHIS enrollees receiving care at outpatient departments of five randomly selected accredited health facilities in Ibadan. A total of 311 NHIS enrollees were consecutively recruited and a semistructured, pretested, interviewer-administered questionnaire was used to elicit information from respondents. Descriptive and inferential statistics were used to present results at 5% level of significance. Distance traveled by patients from their residence to the facilities was measured using Google maps.

Results: The mean age of respondents was 37.1±16.1 y. There were 167 (53.7%) males and 224 (72.3%) were married. The bypassing rate was 174 (55.3%). More than a third of enrollees, 127 (41.0%), reported that their hospital choice was made based on physician referral, 130 (41.8%) based on personal choice, 26 (8.4%) based upon the recommendation of the Health Management Organization (HMO), while 27 (8.7%) were influenced by friends/family/colleagues. Bypassing was positively associated with educational status ($X^2 = 13.147$, p=0.004). Respondents who bypassed expended additional time and money traveling to the farther away hospitals, 35.1 (±34.66) min and 389.51 (±545.21) naira per visit, respectively.

Conclusion: The level of bypassing among enrollees was fairly high. Enrollees should be properly guided regarding the need to access healthcare in facilities closer to them by their HMOs and physicians in the case of referrals. This will reduce bypassing and the cost of travel leading to better outcomes among enrollees.

Keywords: bypassing, health insurance, Nigeria, quality of care.

Introduction

Choosing a healthcare provider is an important healthcare decision that individuals and families make.[1] The phenomenon of 'bypassing' is said to occur when a patient visits a health facility other than the one nearest to where they live. Bypassing is a decision and, as with all decision-making processes, patients make knowledge-based choices.[2] As such, bypassing is a choice made with the full knowledge of availability of closer facilities (Gauthier and Wane, 2011[3]).

The choice of healthcare provider is often determined by both patient and provider characteristics. Certain patient attributes such as age, gender, educational level, occupation, income, cost of available services, insurance status and disease characteristics (severity of illness and presence or absence of comorbidities)[4,5] and provider factors like the quality of services provided, availability of drugs and other consumables, geographical location and distribution of hospitals within a particular geographical space, have been mentioned in earlier studies.[6,7] A previous study has also shown that individuals and families do bypass nearby

healthcare facilities for farther away ones as a result of a perceived or real need to do so.[6] However, the choice of health facilities among insured people is more likely to be based on quality of care because they are often not affected by differences in cost at health facilities.[8]

The National Health Insurance Scheme (NHIS) is a social health insurance program that became operational in Nigeria in 2005 to ensure that every Nigerian has access to affordable healthcare services (Odeyemi and Nixon, 2013). This scheme has five major stakeholders: payer, regulator, health maintenance organizations (HMOs), healthcare provider and enrollee (Odeyemi and Nixon, 2013). The purchasers in Nigeria's health insurance scheme are the HMOs. The HMOs make available a set of healthcare facilities at primary, secondary and tertiary levels of healthcare for enrollees to choose from. According to guidelines, the referral system through the HMOs starts with primary to secondary facilities then proceeds to tertiary care.[9]

In Nigeria, individuals and families enrolled in the NHIS pay only 10% of the costs of drugs while the remaining 90% as well as other costs related to health services received are covered by insurance. Despite this, anecdotal evidence shows that bypassing takes place among NHIS enrollees in Ibadan, southwest Nigeria. Therefore, this study assessed the factors responsible for bypassing among enrollees. Findings from this study will be beneficial for supporting policies that will ensure the effectiveness of the NHIS and improve health outcomes among enrollees.

Materials and methods

The study utilized a descriptive cross-sectional design to recruit 320 NHIS enrollees registered in randomly selected NHIS-accredited hospital facilities within Ibadan. Ibadan is the third largest indigenous city in Africa, located south of the Sahara Desert. The city's population is estimated to be about 3800 000 according to 2006 National Population Census estimates (NPC, 2007[10]). Mainly inhabited by the Yoruba-speaking ethnic group, Ibadan is located 128 km inland northeast of Lagos (the former capital of Nigeria) and 530 km southwest of Abuja, the federal capital. At the time of data collection, there were a total of 1237 healthcare providers in Oyo state, of which only 227 (18.4%) were accredited by the NHIS to provide services to its enrollees. Of these accredited healthcare providers, 192 (84.6%) are within the city of Ibadan.

Due to the unequal distribution of patients among the different NHIS-accredited facilities, all NHIS-accredited hospitals in Ibadan were divided into two categories/sampling frames based on the number of registered enrollees, assuming an equal distribution across all accredited hospitals in Ibadan. One high-volume hospital (University College Hospital [UCH]) and four low-volume hospitals (Toun Hospital, Victory Medical Center, The Vine Medical Center and Alaafia Hospital) were selected via simple random sampling. The total sample size was then proportionately divided into each of the five selected facilities according to their NHIS patient load.

NHIS enrollees registered at the selected health facilities who were visiting any outpatient clinic in that hospital were recruited into the study. To avoid bias, enrollees who were employees of the selected hospital where they also accessed healthcare were excluded from the study. Data collection was carried out during July and August 2017. An interviewer-administered semistructured questionnaire was utilized to collect data relating to sociodemographic and clinical characteristics as well as perception of the quality of healthcare received among enrollees. The questionnaire was developed from a review of previous studies and from a standardized questionnaire for Patient Experience with Outpatient Care (Marshall and Ron, 1994[11]).

Data analysis was performed using the Statistical Package for Social Sciences (SPSS, IBM, Armonk, New York, USA) version 20.0 and findings were presented using descriptive and inferential statistics. The distance between each hospital facility where each enrollee accessed healthcare and their respective residence was estimated using Google maps. To ascertain the perception of enrollees regarding the quality of healthcare service they received in the facilities, a set of questions was asked and respondents could either 'agree', 'disagree' or simply indicate 'I don't know'.

Results

Patient characteristics

A total of 320 respondents were recruited into the study, of whom 311 responded, thus the overall response rate was 97.2%. Distribution across the study sites was 256 (82.3%), 23 (7.4%), 12 (3.9%), 11 (3.5%) and 9 (2.9%) in University College Hospital (UCH), Toun Hospital, The Vine Medical center, Victory Medical Center and Alaafia Hospital, respectively. The mean age of respondents was 37.1 ± 16.1 y. Of the enrollees, 167 (53.7%) were male and 76.5% (239 of respondents) had tertiary education (Table 1).

Self-reported symptoms and diagnoses

For the index visit, symptoms and diagnoses were self-reported and were grouped into 12 categories. A majority of the enrollees (90 [28.9%]), reported symptoms of malaria and related illnesses, 42 (13%) had symptoms relating to eye care, 35 (11.3%) enrollees visited the hospital for obstetrics and gynecology, 32 (10.3%) for heart-related issues and 25 (8.0%) for orthopedic services (Table 2).

Bypassing behavior

Table 3 shows the factors reported as important considerations with regard to the hospital facility where enrollees decided to access healthcare: 127 (41.0%) reported that their choice of present hospital was made based on physician referral, 130 (41.9%) by personal choice, 26 (8.4%) by the HMO, while 27 (8.7%) said that their choice was influenced by friends/family/colleagues. Enrollees who bypassed NHIS-accredited facilities totaled 174 (55.9%). These enrollees reported being aware of closer and accredited hospitals but still chose to access healthcare in farther away facilities. However, 137 (44.1%), reported that they were not aware of closer health facilities. Also, a total of 79 (68.7%) of those who once patronized closer facilities but eventually bypassed them provided the reasons for doing so, which were

Table 1. Sociodemographic characteristics of enrollees

Characteristics	n	%
Gender		
Male	167	53.7
Female	144	46.3
Religion		
Christianity	238	76.5
Islam	73	23.5
Marital status		
Single	86	27.7
Married	224	72.0
Other	1	0.3
Ethnicity		
Yoruba	240	77.2
Igbo	19	6.1
Hausa/Fulani	3	1.0
Other	49	15.7
Highest educational level		
No formal education	6	1.9
Primary school	15	4.8
Secondary school	51	16.4
Tertiary institution	239	76.8
Choice of hospital		
University College Hospital	256	82.3
Toun Memorial Hospital	23	7.4
Victory Medical Centre	12	3.9
The Vine Medical Center	11	3.5
Alaafia Hospital	9	2.9

Table 2. Enrollees' diagnostic categories

	(N=293)	
Diagnostic categories of ailments	N	%
Malaria and related febrile illnesses	90	28.9
Eye-related ailments	42	13.0
Obstetrics and gynecology	35	11.3
Cardiovascular-related complaints	32	10.3
Orthopedics	25	8.0
General surgery	21	6.6
Medicine	19	6.1
Ear, nose and throat	12	3.9
Neurology	7	2.3
Nephrology	4	1.3
Pediatrics	3	1.0

grouped into three categories, namely, dissatisfaction with services provided 6 (7.6%), referral 73 (83.5%), and HMO's choice and without the respondents' consent 7 (8.9%) (Table 3).

Table 3. Reported factors that influenced enrollees' choice of hospital

	(N=310)	
Basis of enrollees' choice of hospitals	N	%
Personal choice	130	41.9
Physician referral	127	41.0
Friends/family/colleagues' recommendation	27	8.7
HMO decision	26	8.4
	(N=311)	
Aware of closer health facility	N	%
Yes	174	55.9
No	137	44.1
	(N=79)	
Reasons for bypassing	N	%
Dissatisfaction with services provided	6	7.6
Referral	73	83.5
HMO decision	7	8.9

Distance traveled and the cost of bypassing

Respondents who bypassed closer health facilities expended 35.1 (±34.66) min and 389.51 (±545.21) naira in additional time and money spent traveling from home to hospital and back, respectively (Table 4).

Association between bypassing and sociodemographic characteristics

The association between bypassing behavior and respondents' sociodemographic characteristics is provided in Table 5. Apart from enrollees' literacy level, no other sociodemographic variable was associated with bypassing. The results revealed that bypassing behavior was associated significantly with level of education ($\chi^2 = 13.147$, p=0.004), and that as education increased, the proportion of respondents who bypassed increased. More respondents with tertiary education 147 (61.5%) bypassed than those with other levels of education (Table 5).

Patients' perception of the quality of healthcare facilities

When asked if health workers treat them with courtesy and respect, 245 (78.8%) respondents agreed, 265 (83.6%) agreed that health workers listen carefully and 182 (58.5%) agreed that bathrooms and latrines were kept clean, 261 (83.9%) agreed that they had enough time with the doctor while 156 (50.2%) agreed that the drugs they needed were usually available (Table 6).

Table 4. Summary statistics of distance traveled, time expended and economic costs

Variable	Mean	SD
Distance on fastest route by Google maps from residential area to hospital (km)	13.59	20.68
Time on fastest route by Google maps from residential area to hospital (min)	27.87	28.98
Travel time for all respondents (min)	43.24	40.44
Cost of travel from and back to residence for all residents (in Naira)	472.10	600.89
Travel time to closer NHIS-accredited hospital for respondents who bypass (min)	18.97	20.43
Cost of travel to closer NHIS-accredited hospital and back to residence for respondents who bypass (in Naira)	202.40	339.03
Additional travel time due to bypassing (min)	35.10	34.66
Additional travel cost due to bypassing (in Naira)	389.51	545.21

Table 5. Association between bypassing and enrollees' sociodemographic characteristics

	Bypassing behavior				
Variable	Bypassed, n (%)	Did not bypass, n (%)	Total, n (%)	χ^2	p-value
Hospital					
UCH	142 (55.5)	114 (44.5)	256 (100)	2.671	0.614
Alaafia	5 (55.6)	4 (44.4)	9 (100)		
The Vine	9 (75.0)	3 (25.0)	12 (100)		
Toun Memorial	11 (47.8)	12 (52.2)	23 (100)		
Vine Medical	7 (63.6)	4 (36.4)	11 (100)		
Age (y)					
0–30	45 (48.4)	48 (51.6)	93 (100)	5.337	0.069
31–60	120 (61.2)	76 (38.8)	196 (100)		
>60	9 (45.0)	11 (55.0)	20 (100)		
Gender					
Male	95 (56.9)	72 (43.1)	167 (100)	0.129	0.720
Female	79 (54.9)	65 (45.1)	144 (100)		
Marital status					
Married	130 (57.8)	95 (42.2)	225 (100)	1.105	0.309
Single	44 (51.2)	42 (48.8)	86 (100)		
Highest educational level					
None	2 (33.3)	4 (66.7)	6 (100)	13.147	0.004
Primary	5 (33.3)	10 (66.7)	15 (100)		
Secondary	20 (39.2)	31 (60.8)	51 (100)		
Tertiary	147 (61.5)	92 (38.5)	239 (100)		
Mode of choice of hospital					
Self	59 (53.1)	61 (46.9)	130 (100)	1.792	0.617
HMO	14 (53.8)	12 (46.2)	26 (100)		
Physician referral	77 (60.6)	50 (39.4)	27 (100)		
Friends/family recommendation	14 (51.9)	13 (48.1)	127 (100)		

Bypassing and patients' perception of quality

A Pearson χ^2 test was carried out to test for an association between bypassing behavior of respondents and their perception of the quality of care received at index hospitals, revealing that a higher proportion (136 [55.5%]) of those who perceived good quality at their current hospital bypassed closer health facilities, but this result was not statistically significant (Table 7).

Discussion

Malaria and related febrile illnesses were the most common disease categories reported by respondents. This is expected in Nigeria where malaria is one of the leading causes of morbidity and mortality and has been reported as being responsible for 30% of childhood mortality, 11% of maternal deaths

Table 6. Respondents' perception of quality of healthcare facilities

Perception of quality of healthcare facilities	A N (%)	UD N (%)	D N (%)
HCWs treat me with courtesy	245 (80.1)	40 (30.1)	21
HCWs listen carefully	265 (86.9)	24 (7.9)	16 (5.2)
HCWs explain my diagnosis, tests and treatment in an understandable way	260 (85.3)	(7.2)	(7.5)
Hospital is kept clean	291 (95.4)	(4.3)	1 (0.3)
Surrounding area is kept clean	289 (94.8)	13 (4.2)	3 (1.0)
Hospital is open at any hour of the day	247 (81.0)	19 (6.2)	39 (12.8)
Bathrooms and latrines are kept clean	182 (59.7)	(21.6)	(18.7)
I had enough time with the doctor	261 (85.6)	(7.2)	(7.2)
I have no doubts about the ability of the HCWs who treat me	266 (87.2)	13 (4.2)	26 (8.4)
The drugs I need are usually available	156 (51.1)	110 (36.1)	39 (12.8)

Abbreviations: A, agree; D, disagree; HCW, healthcare worker; UD, I don't know.

Table 7. Association between bypassing behavior of respondents and their perception of quality of care received at index hospitals

Respondents' perception of quality	Bypassing behavior				
	Bypassed (%)	Did not bypass (%)	Total (%)	χ^2	p-value
Poor quality	8 (80.0)	2 (20.0)	10 (100)	2.674	0.263
Moderate quality	26 (52.0)	24 (48.0)	50 (100)		
Good quality	136 (55.5)	109 (44.5)	245 (100)		

and more than half of outpatient consultations/visits (Okeke and Okeibunor, 2009[12,13]; Amaghionyeodiwe, 2008[14]).

Physician referral was reported as the driver of hospital choice for 41% of respondents. All hospitals in this study were secondary and tertiary hospitals where 28.9% of these patients were being seen for primary care illnesses. The use of secondary and tertiary hospitals for illnesses that can be managed at a lower level of care may overburden those facilities and result in ineffective use of healthcare resources. As recommended in other studies, the use of primary health care facilities by NHIS enrollees should be encouraged, the referral system should be revised and resource allocation to lower levels of care should be improved.[15,16]

Many respondents who made the choice of hospital by themselves also sought information about that hospital before choosing it. Subjective measures of the quality of hospitals such as availability of services and hospital appearance were found to be important to the respondents in this study, which is in agreement with other studies on bypassing[6,7,17,18] (Gauthier and Wane, 2011[3]).

The rate of bypassing among respondents in this study was high with 55% of the respondents bypassing a closer health facility, which is comparable with results from studies carried out among uninsured patients in rural Tanzania[17]) and women seeking delivery services in India.[19] The bypassing rate 87% was much higher among women and children seeking care in Sierra Leone.[20]

However, a Ghanaian study 33.9% of bypassing among a mixture of insured and uninsured patients reported a much lower rate of bypassing (Yaffee et al., 2012[21]) and a similar rate 30.7% was found among women in Mozambique.[16]

More respondents with tertiary education bypassed than respondents with lower levels of education. This result is substantiated by other studies of hospital selection by patients in Nigeria and other countries.[7,15,17,22] Contrary to our study bias, there was no significant association between quality of healthcare services and bypassing behavior among these study respondents. This represents a significant difference between the current study and those that have preceded it. The question that needs to be answered in future research is what factors are responsible for the bypassing behavior observed in this study and how strongly each one contributes to the decision-making process.

In terms of the cost of bypassing, respondents who bypassed closer health facilities expended additional time and money because of the extra traveling involved. This was also found to be the case in other studies (Gauthier and Wane, 2011[3]). Women who chose farther away hospitals in Mozambique also expended additional time traveling.[16] When selecting a hospital, it is assumed that patients weigh the costs of increased travel (both the monetary costs of travel as well as the opportunity costs of time for themselves and/or their relatives) against the benefits (higher quality).[5]; (Gauthier and Wane, 2011[3]).

Many of the requisite policies and frameworks needed for the NHIS to achieve its set goals are still rudimentary or totally absent[23] and the findings from this study indicate some of the pressure points, which may contribute to improved efficiency of the scheme.

Conclusions

This study contributes to the knowledge available on the choice of hospitals among NHIS enrollees in Nigeria. The rate of bypassing among NHIS enrollees was high and physician referral was responsible for a high degree of the reported bypassing behavior. It is thus necessary to review the NHIS referral guidelines and improve resource allocation to lower levels of care, thus forestalling crowding at higher levels of care. Physicians are important gatekeepers in the choice of health facilities and this necessitates their education for better stewardship of the referral system. Since the factor of quality did not seem to affect bypassing behavior in this study, it is recommended that future research works look beyond quality as the sole factor that influences the bypassing of healthcare facilities.

References

1 Hibbard J, Slovic P, Jewett J. Informing consumer decisions in health care: implications from decision-making research. Milbank Q. 1997;75:395–413.

2 Bornstein B, Marcus D, Cassidy W. Choosing a doctor: an exploratory study of factors influencing patients' choice of a primary care doctor. J Eval Clin Pract. 2000;6(3):255–62.

3 Gauthier B, Wane W. Bypassing health providers: the quest for better price and quality of healthcare in Chad. Social Science & Medicine. 2011;73:10.

4 Lavela SL, Smith B, Weaver FM, et al. Geographical proximity and health care utilization in veterans with SCI&D in the USA. Soc Sci Med. 2004;59(11):2387–99.

5 Varkevisser M, Van Der Geest SA, Schut FT. Assessing hospital competition when prices don't matter to patients: the use of time-elasticities. Int J Health Care Finance Econ. 2010;10(1):43–60.

6 Boachie MK. Preferred primary healthcare provider choice among insured persons in Ashanti Region, Ghana. Int J Health Policy. 2016;5(3):155–63.

7 Zinszer K, Charland K, Kigozi R, et al. Determining healthcare facility catchment areas in Uganda using data on malaria-related visits. Bull World Health Organ. 2014;92:178–86.

8 Yip WC, Wang H, Liu W. Determinants of patient choice of medical provider: a case study in rural China. Health Policy Plan. 1998;13(3):311–22.

9 Obikeze E, Onwujekwe O. The roles of health maintenance organizations in the implementation of a social health insurance scheme in Enugu, Southeast Nigeria: a mixed-method investigation. Int J Equity Health. 2020;19:33.

10 NPC . Report of Nigeria's National Population Commission on the 2006 Census. Population and Development Review. 2007;33(1):206–10. JSTOR, www.jstor.org/stable/25434601.

11 Marshall G, Ron H. The Patient Satisfaction Questionnaire Short Form (PSQ-18). RAND. 1994;33(1):206–10. JSTOR, https://doi.org/10.7249/P7865.

12 Okeke T, Okeibunor J. Rural-urban differences in health-seeking for the treatment of childhood malaria in south-east Nigeria. Health Policy (Amsterdam, Netherlands). 2009;95:62–8. doi: 10.1016/j.healthpol.2009.11.005.

13 Osungbade K, Obembe T, Oludoyi A. Users' satisfaction with services provided under National Health Insurance Scheme in southwestern Nigeria. Int J Trop Dis Health. 2014;4(5):595–607.

14 Amaghionyeodiwe LA. Determinants of the choice of health care provider in Nigeria. Health Care Manage Sci. 2008;11:215–27.

15 Anselmi L, Lagarde M, Hanson K. Health service availability and health seeking behaviour in resource poor settings: evidence from Mozambique. Health Econ Rev. 2015;5:26.

16 Yao J, Agadjanian V. Bypassing health facilities in rural Mozambique: spatial, institutional, and individual determinants. BMC Health Serv Res. 2018;18:1006.

17 Kahabuka C, Kvale G, Moland KM, et al. Why caretakers bypass Primary Health Care facilities for child care - a case from rural Tanzania. BMC Health Serv Res. 2011;11:315.

18 Tai W, Porrel F, Adams E. Hospital choice of rural medicare beneficiaries: patient, hospital attributes, and the patient-physician relationship. BMC Health Serv Res. 2004;39:20.

19 Sabde Y, Chaturvedi S, Randive B, et al. Bypassing health facilities for childbirth in the context of the JSY cash transfer program to promote institutional birth: A cross-sectional study from Madhya Pradesh, India. PLoS One. 2018;13(1):e0189364.

20 Fleming LC, Ansumana R, Bockarie A, et al. Inpatient healthcare provider bypassing by women and their children in urban Bo, Sierra Leone. Pan African Med J. 2016;23:146.

21 Yaffee AQ, Whiteside LK, Oteng RA, et al. Bypassing proximal health care facilities for acute care: a survey of patients in a Ghanaian Accident and Emergency Centre. Trop Med Int Health. 2012;17(6):775–81.

22 Adebayo A, Asuzu M. Utilisation of a community-based health facility in a low-income urban community in Ibadan, Nigeria. African J Prim Health Care Fam Med. 2015;7(1):a735.

23 Odeyemi I, Nixon J. Assessing equity in healthcare through the national health insurance schemes of Nigeria and Ghana: a review-based comparative analysis. Int J Equity Health. 2013;12:9.