

# Perception of Factors Influencing Primary Health-Care Facility Choice Among National Health Insurance Enrollees of a Northwest Nigerian Hospital

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## Abstract

**Background:** The National Health Insurance Scheme (NHIS) of Nigeria was designed to eliminate known cultural, physical, and resource-related barriers to quality health-care access. Although choice of primary health-care facility (PHF) remains in the domain of the scheme enrollees, little is known about factors influencing their choice. Hence, the study of the perception of factors influencing PHF choice among NHIS enrollees of a northwest Nigerian hospital becomes imperative. **Methods:** This was a cross-sectional study of 284 principal enrollees randomly selected from patients attending the NHIS clinic of Aminu Kano Teaching Hospital, Kano, Nigeria, using a designed, pretested, investigator-administered questionnaire. Their sociodemographics and factors influencing their choice of the clinic were assessed. **Results:** Respondents' mean age was  $40.9 \pm 9.0$  years and they were predominantly males (83.1%) with tertiary education. Median distance between their homes and PHF was  $7.6 \pm 12.5$  km. Most respondents were aware of other accredited PHFs in the city and believed it was their right to choose a PHF. Among the various factors influencing their choice of index PHF were better functioning equipment (83.5% of respondents), more specialists/trained health workers (78.5%), ease in receiving specialist care (69.4%), and better overall quality of care (78.9%). **Conclusion:** There are multiple factors associated with enrollee choice of PHF in this study. The NHIS enrollees value the presence of functioning equipment/facilities, ease in receiving specialist care, and overall high quality of care in their choice of PHF. Improving enrollee enrollment at accredited PHF may require addressing these factors.

## Keywords

health insurance, enrollee perception, choice, primary health-care facility

## Introduction

The National Health Insurance Scheme (NHIS) was established by Act 35 of the 1999 Nigerian Constitution but became operational in 2005. With a vision of a strong, dynamic, and responsive insurance scheme totally committed to securing universal coverage and access to adequate and affordable health care to improve the health status of Nigerians (1), the scheme offers primary, secondary, and tertiary health-care services. Of the various enrollees of the scheme (principal, dependents, extra-dependents), the principal enrollee is entrusted with the responsibility of selecting one primary health-care facility (PHF) from a list of accredited facilities at enrollment. In health economics, one factor that influences demand for health-care products and services

is consumer preference, also known as choice. Consumers' decision to choose one product or service over another is influenced by factors such as patient satisfaction with services, quality of the services, sociodemographic factors, and economic factors such as distance from the health facility

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(a physical barrier to health-care access); these variables ultimately lead to the utilization of a clinic or hospital (2–5).

Although the NHIS has made progress in the country-wide accreditation of several deserving private and public hospitals/clinics to improve health-care access to the teeming health-care consumers and improve the patronage of all facilities at various levels of care (1), anecdotal evidence shows that the factors influencing facility preference among the NHIS enrollees are not completely understood. It is surprising to observe that despite the mandatory screening process for the accreditation of these facilities by the NHIS in Nigeria and their meeting the minimum requirements regarding facilities and manpower, many enrollees concentrate in few facilities. This results in overstretching of health-care resources and prolonged waiting times at these centers (6).

Studies highlighting the factors that potential enrollees consider important in their choice of PHF in the region are scarce. We therefore undertook to determine the perception of factors influencing preference of NHIS Clinic of Aminu Kano Teaching Hospital (AKTH) over other clinics/hospitals in Kano among principal enrollees of the hospital; this may illuminate knowledge and practice gaps associated with their choice toward improving prospective enrollee education.

## Material and Methods

### Study Area/Population

This descriptive cross-sectional study was conducted at the NHIS clinic complex of AKTH (a PHF within a federal government-owned tertiary hospital) which serves 34 000 enrollees (including staff enrollees) registered with the hospital. The hospital is located along a major highway (Zaria Road) into the city within the Tarauni Local Government Area of the Kano state, northwest Nigeria. The NHIS clinic is ran by medical officers, residents, and consultants of the Department of Family Medicine of AKTH. Enrollees with undifferentiated medical and surgical conditions receive primary care services here, while deserving ones are referred to other subspecialty clinics of the hospital. By regulation, NHIS enrollees receive 24-hour health-care services. The NHIS clinic of AKTH offers services from 8 AM to 9 PM daily, whereas all other sick enrollees (usually with emergent conditions) receive care from the accident and emergency department of the hospital (as they have access to enrollees' medical records) between 9 PM to 8 AM (weekends and public holidays inclusive). The study population was principal enrollees, who are usually involved in the choice of primary health facilities for themselves and their dependents. Current clinic records showed that an average of 80 principal enrollees and 150 dependents were seen daily at the clinic. Therefore, 560 (80 × 7) and 2240 (560 × 4) principal enrollees were seen weekly and monthly, respectively, at the clinic.

### Selection Criteria

All principal enrollees attending the NHIS clinic during the study period were included in the study. However, those with emergent conditions or who declined consent were excluded.

### Sample Size Estimation

The formula ( $N = z^2pq/d^2$ ), for estimating sample size of descriptive study populations greater than 10 000 (7), was used to obtain a sample size of 308, where  $p = 72.3\%$  (proportion of study participants who choose public hospitals as health-care provider in Ibadan) (8),  $q = 1 - p$ , and  $d$  (degree of accuracy desired) = 5%. With a study duration of 4 weeks and study population of 2240, the desired sample size of 271 was determined using the formula  $nf = N/1 + N/n$  (7), where  $n$  = study population, and  $nf$  = desired sample size. An additional 10% was added for possible nonresponses and incomplete data making a total of 302.

### Sampling Technique

At registration (medical records unit), a trained research assistant identified all principal enrollees who were at the unit for possible recruitment. A systematic random sampling method was then used to select every seventh (obtained from the quotient of the sampling frame by the estimated sample size,  $2240/302 \approx 7$ ) principal enrollee at the clinic; this was done after the first participant had been selected using the list of principal enrollees in the order they were registered and identifying the first 7, from which one was selected by balloting. However, where the seventh principal enrollee did not meet inclusion criteria, the next one (the eighth) was selected. An average of 11 principal enrollees were recruited daily until the sample size was reached.

### Data Collection

A designed, pretested, semistructured interviewer-administered questionnaire in English and Hausa (the major local language) was used. The internal validity of the questionnaire was determined using Cronbach  $\alpha$  and a value of .81 was obtained. Trained research assistants administered the questionnaires; the questionnaires assessed participants' sociodemographics and perception of factors that influenced their choice of their PHF (ie, NHIS clinic, AKTH). To prevent double sampling, the NHIS enrollment card number of participants was recorded and each participant was advised against completing the questionnaire more than once. The "factors that influence choice" questions had responses of "yes" or "no" (eg, AKTH was chosen for me by my employer, yes/no?) whereas there was only one open-ended question: "Any other reasons for choosing AKTH (specify)?" Regular supervision of the research assistants and reviewing of the completed questionnaire were carried out daily by the principal investigator. The shortest distance between participants' residential address and AKTH was calculated or obtained using the global positioning system (9).

## Study Protocol

Following explanation of the research objectives and obtaining a written informed consent at registration (medical records unit), the study questionnaire was administered on each participant while seated in the waiting area.

## Ethical Approval

Ethical approval (NHREC/21/08/2008/AKTH/EC/1832) was obtained from the AKTH research ethics committee.

## Data Management

Data were entered and analyzed using Epi Info version 7.1.1.14 (2012; CDC, Atlanta, Georgia). Continuous variables were summarized using measures of central tendencies such as mean and median; categorical variables were presented in frequency tables.

## Results

### Sociodemographic Characteristics of Respondents

Of the 302 participants selected for the study, 18 provided minimal data; hence, 284 (representing 94.0% response rate) were used for analysis. Table 1 shows that the respondents' mean age was  $40.9 \pm 9.0$  years (ranging from 20 to 72 years). Respondents were predominantly males (236, 83.1%) and from the Hausa tribe (197, 69.4%). They were all civil servants with predominantly tertiary education (256, 90.1%). Most were married (258, 90.8%) and were from monogamous families (216, 76.1%) of 5 to 9 (152, 53.5%) people, with a median of  $6 \pm 4.8$  people per family. A majority resided (282, 99.3%) and worked (254, 89.4%) in Kano state.

### Respondents' Residential Location in Relation to AKTH

One hundred thirty-two (46.5%) respondents were residing in 2 (Tarauni and Kumbotso) of the 44 local government areas of Kano State (Table 2). Their commonest mode of transport to hospital was their private vehicles (164, 57.8%). One hundred forty (49.3%) respondents felt they lived near to the hospital. However, a majority lived  $\geq 5$  km (203, 71.5%) from the hospital with a median distance of  $7.6 \pm 12.5$  km (ranging from 0 to 134 km). Most respondents had been receiving care at the hospital for more than 12 months (225, 79.2%), with health insurance coverage of at least 6 members of their households (280, 98.6%).

### Respondents' Awareness of NHIS Services in Other Health-Care Facilities in Kano City

Sixty-nine (24.3%) respondents were unaware that NHIS services were offered by 3 other government hospitals in the city, while 53 (18.7%) respondents were unaware of similar services offered at 2 large private hospitals located in the city (Table 3). Only 50 (17.6%) had switched health-care facilities in the past;

**Table 1.** Sociodemographic Characteristics of Respondents.

Variable	n	Percent
Age (mean $40.9 \pm 9.0$ ) years		
20-29	18	6.3
30-39	126	44.4
40-49	89	31.3
50-59	41	14.4
$\geq 60$	10	3.6
Sex		
Male	236	83.1
Female	48	16.9
Ethnicity		
Hausa	197	69.4
Fulani	41	14.4
Yoruba	12	4.2
Others	34	12.0
Religion		
Islam	263	92.6
Christianity	21	7.4
Educational level		
None	3	1.1
Primary	3	1.1
Secondary	22	7.7
Tertiary	256	90.1
Marital status		
Married	258	90.8
Single	22	7.7
Widowed	3	1.1
Divorced/separated	1	0.4
Family type		
Monogamous	216	76.1
Polygamous	46	16.2
Still single	22	7.7
Family size (median = $6 \pm 4.8$ )		
0-4	84	29.6
5-9	152	53.5
$\geq 10$	48	16.9
Residential location		
Within Kano state	282	99.3
Outside Kano state	2	0.7
Workplace location		
Within Kano state	254	89.4
Outside Kano state	30	10.6

most cited relocation/transfer (32.0%), unsatisfactory services (24.0%), and issues of distance from the health-care facility (14.0%) as reasons for switching health-care facility. Other reasons reported were as follows: no reason (6, 12.0%), frequent referrals to AKTH (4, 8.0%), poor facilities (2, 4.0%), lack of specialists (2, 4.0%), and enrollment at unintended facility by NHIS (1, 2.0%).

### Respondents' Reasons for Choosing AKTH as Primary Health Facility

Most respondents preferred AKTH over other NHIS-accredited health-care facilities in Kano city for reasons such as having better equipment/facilities (237, 83.5%), better overall quality of care (224, 78.9%), having more

**Table 2.** Respondents' Residential Location in Relation to AKTH.

Variable	n	Percent
LGA of residence		
Tarauni	67	23.6
Kumbutso	65	22.9
Nasarawa	42	14.8
Gwale	39	13.7
Municipal	31	10.9
Fagge	11	3.9
Others	27	9.5
LGA outside Kano State	2	0.7
Mode of transport to hospital		
Private vehicle	164	57.8
Commercial bus/car	66	23.2
Commercial tricycle	48	16.9
Trekking	6	2.1
Perception of distance from residence to hospital		
Near	140	49.3
Far	101	35.6
Unsure	43	15.1
Estimated distance between residence and hospital (km)		
0-4.9	81	28.5
5.0-9.9	92	32.4
10.0-14.9	60	21.1
15.0-19.9	24	8.5
≥20	27	9.5
Duration of service utilization at AKTH (months)		
1-12	59	20.8
13-60	127	44.7
61-120	75	26.4
≥121	23	8.1
Number of persons covered by health insurance (median = 4 ± 1.6)		
0-6	280	98.6
>6	4	1.4

Abbreviations: AKTH, Aminu Kano Teaching Hospital; LGA, local government area.

specialist/trained workers (223, 78.5%), easier to see specialists (197, 69.4%), had used the hospital previously and was satisfied (153, 53.9%), and that the AKTH was closer to their home (148, 52.1%; Table 4). Most respondents (195, 68.7%) felt that they should be responsible for choosing their PHF, whereas a few (10, 3.5%) felt their health maintenance organization should be responsible.

## Discussion

We studied NHIS enrollees' perception of factors influencing the choice of an accredited primary health facility in Kano, northwest Nigeria. We found that factors influencing respondents' choice of PHF were variegated and complex (10–12). The NHIS has eliminated several cultural, physical, and resource-related barriers to access to health care via minimal/absent user fees, adequate spread of accredited PHF (private and government owned), same benefit packages for all, but leaves the intricate activity of choice of PHF with the enrollees. Information about available PHFs is often obtained from personal experiences, potential enrollee

**Table 3.** Respondents' Awareness of NHIS Services in Other Health-Care Facilities in Kano.

Variable	n	Percent
Kano state government hospitals (MMSH, AWSH)		
Aware	215	75.7
Unaware	69	24.3
Federal government hospital (NOH Dala)		
Aware	215	75.7
Unaware	69	24.3
Private hospitals (international and premier clinics)		
Aware	231	81.3
Unaware	53	18.7
Previous NHIS enrollment with another hospital		
Yes	50	17.6
No	234	82.4
Reasons for switching hospital (n = 50)		
Relocation/transfer	16	32
Unsatisfactory service	12	24
Distance from residence	7	14
No reason	6	12
Others <sup>a</sup>	9	18

Abbreviations: AKTH, Aminu Kano Teaching Hospital; AWSH, Abdullahi Wase Specialist Hospital; MMSH, Murtala Muhammad Specialist Hospital; NHIS, National Health Insurance Scheme; NOH, National Orthopaedic Hospital.

<sup>a</sup>Frequent referrals to AKTH (8%), poor facilities (4%), lack of specialists (4%), and enrollment at unintended facility by NHIS (2%).

**Table 4.** Respondent's Reason for Choosing AKTH as Primary Health Facility.

Variable	n	Percent
Reasons (n = 284)		
Facility was chosen by my employer (yes)	58	20.4
Facility was close to my home (yes)	148	52.1
Facility was close to my workplace (yes)	113	39.8
Had used facility previously and was satisfied (yes)	153	53.9
Facility had better functioning equipment/facilities (yes)	237	83.5
Facility had more specialists/trained workers (yes)	223	78.5
Facility had reduced waiting times (yes)	96	33.8
Facility was recommended by my family and friends (yes)	88	31.0
It was easier to see a specialist (yes)	197	69.4
Facility had better overall quality of care (yes)	224	78.9
Others	15	5.3
Facility was a neat hospital	6	2.1
Facility had friendly staff	5	1.8
I trust the hospital services	4	1.4
Who should choose your primary health facility?		
Me	195	68.7
My employer	18	6.3
HMO	10	3.5
I don't know	61	21.5

Abbreviations: AKTH, Aminu Kano Teaching Hospital; HMO, health maintenance organization.

education, and word-of-mouth advertising (13). Although, 90% of this study respondents had tertiary education, only 31% of them felt that word-of-mouth advertising by family

and friends influenced their choice; this tends to restate that choice is a complex activity associated with interplay of forces confined to the individual or household.

Better facilities/equipment was reported by the highest proportion of respondents (83.5%) as reason for choosing their PHF. This suggests that potential enrollees place premium on functioning and up-to-date facilities and equipment in a PHF over factors such as distance to health facility from their place of residence, which was reported by only 52.1% of respondents in decision-making; however, this deduction could be from the discordance between perceived and actual distance between place of residence and PHF observed in this study. Most respondents (71.5%) lived 5 km or more from the health facility; this exceeds the travel distance of less than 5 km and travel time of within 5 minutes cited by other studies that increases patient facility utilization (12,13). In addition, only 35.6% of respondents perceived that they lived far from the PHF. Although travel time to PHF was not measured in this study, it is known to be poorer patient utilization indicator than travel distance (13). In addition, over half (57.8%) of the respondents owned cars and this might explain their perception of living closer to their PHF as this may reduce the travel time.

Another remarkable finding in this study was the index PHF's overall quality of care reported by 78.9% of respondents as reason for their decision. This tends to suggest that prior to choosing their PHF, enrollees' subjective judgment of the structural (eg, physical environment, number of personnel) (14,15), interpersonal (eg, behavior of health-care workers), and technical (eg, outcome of treatments) components of the health-care facility were considered (16). These judgments may have derived from contact experiences before enrollment; 53.9% of respondents in this study had used the index facility previously and were satisfied with services. This finding is corroborated by the over three-quarter of respondents who chose this facility because it had more specialists and trained health workers than any other facility in the city.

Ease in seeing specialists was another reason advanced by 69.4% of respondents for choosing this primary health facility. It is a common protocol in Nigerian secondary and tertiary hospitals for all external referrals to specialists, depending on their severity to go through the primary care clinics, accident and emergency departments, or labor ward (for patients in labor) for review or triage before referral to appropriate specialty clinics. At the specialty clinics, appointments are given (many times ranging from weeks to months). This study finding suggests that most potential enrollees prefer PHF where this pathway is shortened. Similar reason was reported by 8% of respondents who had previously switched health-care facility.

Among the factors reported by fewer proportion of respondents were reduced waiting times, nearness to workplace, and choice of PHF by their employer. It could be inferred that their pre-enrollment experiences at index facility were probably not pleasant in the area of clinic waiting time; this corroborates the results of a previous study in this facility that cited prolonged waiting times as one of the

challenges besetting the clinic (6). Again, respondents may have also felt that distance from their place of residence was more important for the whole family than distance from their workplace. The observed incidence of choice of PHF by an employer was surprising as the scheme has left the choice of PHF in the domain of prospective enrollees. This should be discouraged by the scheme's supervisory body through effective education of prospective enrollees.

### *Policy Implication*

Functioning and up-to-date equipment and facilities, ease in receiving specialist care, and overall high quality of care in accredited facilities appear crucial to prospective enrollees' decision-making toward choosing a PHF. In the current competitive health-care industry, health facility managers must see these factors as important in attracting more enrollees to their facilities. Therefore, increased investment on equipment is required in all NHIS-accredited health facilities to improve patronage and reduce congestion in few facilities. Educational programs for prospective enrollees may need to include their autonomy in the choice of primary health facility, emphases on proximity of places of abode to PHF to improve outcome during emergencies. The NHIS supervisory bodies must ensure that accredited facilities have improved referral protocols to ease delays faced by enrollees at referral hospitals.

### *Limitations of our Study*

Among the limitations of this study is that the study outcome is limited to similar settings with health-insured populations as noninsured populations may have differing factors associated with choice of health-care facility. Future studies involving several accredited facilities (private and public) may be necessary to ascertain the true determinants of choice of health facility in the city. Finally, lack of previous similar studies in this domain made direct comparison of findings difficult.

### **Conclusion**

There are multiple intertwined factors associated with enrollee choice of primary health facility in this study. The NHIS enrollees value the presence of functioning equipment/facilities, ease in receiving specialist care, and overall high quality of care in their choice of primary health facility. Improving enrollee patronage of accredited facilities may require addressing these factors. Education of enrollees and potential enrollees on the importance of choosing PHF close to their places of abode may also be needed to decongest the few facilities with heavy patronage and improve outcome of emergent conditions.

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