

## Research Article

# Sociodemographic Correlates of Choice of Health Care Services in Six Rural Communities in North Central Nigeria

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Received 24 July 2014; Revised 24 November 2014; Accepted 25 November 2014; Published 22 December 2014

Academic Editor: Guang-Hui Dong

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Household expenditure on health has increasingly remained a major source of health care financing in Nigeria despite the introduction of several social health scheme policies provided by the government for meeting the health care costs of patients. Recognizing these limitations, this study assessed the type of health care services people commonly use in various illnesses and the sociodemographic correlates of the preferred health care services by household heads in six rural communities of North Central Nigeria. A cross-sectional community-based descriptive study design was used to study 154 household heads in the settlements using a multistage sampling method. Multiple logistic regressions were performed to investigate independent predictors that had significant chi-square at  $P < 0.05$ . The leading causes of illness experienced by respondents were medical conditions (42.0%) and 41.7% of them sought treatment from patent medicine vendors. The dominant reasons for health-seeking preferences were financial access (53.7%) and proximity (48.6%). Age had a higher impact (Beta = 0.892) on the health-seeking preferences of the respondents as compared to their occupation and religion (Beta = 0.368 and  $-0.746$ , resp.). Therefore, in order to meet the health care of patients, it is pertinent that the unmet needs of patients are properly addressed by appropriate agencies.

## 1. Introduction

Health care embraces all the goods and services designed to promote health, including preventive, curative, and palliative interventions whether directed to individuals or populations [1]. It is, therefore, a necessity and a basic human need. Based on that recognition, the Alma-Ata declaration of the 1978 Primary Health Care (PHC) conference, endorsed by practically all governments, called for social and economic guarantees that would ensure that the basic health needs for all citizens of the world will be achieved by or before the year 2000 [2]. When the goal post of the Alma-Ata declaration was almost approaching, representatives from 189 countries met at the Millennium Summit in New York to adopt the Millennium Development Goals (MDGs). The MDGs just like the PHC declaration also place health at the heart of development

and represent commitment by governments throughout the world to reduce poverty and hunger, lack of education, and gender inequality and to tackle ill-health conditions [3]. Unfortunately, for most developing countries, the prospects of achieving even a minimal level of adequacy in health services and health remains a mirage. While health care needs are increasing, governments' expenditure on health in developing countries is declining [4].

Health care providers in Nigeria in the precolonial period were predominantly made up of traditional healers and diviners. In the colonial era there was a paradigm shift from the traditional health practice to orthodox and traditional medical services running concurrently. In these cases, orthodox medical services that were initially meant for the British Army were later extended to members of the colonial government and local populations living close to them. Various religious

bodies later further established hospitals to supplement the efforts of the government and that continued until the postindependence era [5]. Now it is a concurrent responsibility of the three tiers of government (local, state, and national) in the country to provide orthodox medical care to the citizenry. However, because Nigeria operates a mixed economy, private providers of health care and tradomedical health practitioners still have a visible role to play in health care delivery as well [6]. Despite the existence of these public and private health services, Nigeria as a country has never been able to meet up with the international standards that have been set for the advancement of health over the years. Nigeria's poor health care system has been described as alarming by many authorities, and that calls for urgent attention from the government at all levels as well as medical practitioners [6, 7]. In 2011, Nigeria's health care system was ranked 51st out of 53 countries in Africa, as against the case in the 60s and 70s, when Nigeria was ranked 4th in the Commonwealth [8].

Various contributory factors have been identified at the individual level, communities, and societal levels. For instance, due to poor leadership and poor political commitment, the federal government still has a low health expenditure of about 1.5% to over 150 million Nigerians [9]. These coupled with the skewed distribution of public health facilities in the country left the rural areas with high disease morbidity and mortality. About 70% of the health facilities are situated in the urban areas, while 30% are in the rural areas. However, 70% of health-related conditions are found in the rural areas where poverty also abounds [6, 9]. At the individual level, poverty and ignorance remain as the most important determinants of ill-health as they contribute significantly to increasing exposure to disease-causing agents and also prevent access to health care services. Over 20 percent of foreign patients seeking medical attention in most developed countries are from Nigeria, but the majority of these patients are, of course, the well-to-do individuals in the society. The poor ones who are in the rural areas, who have issues of poverty to contend with, cannot afford medical bills outside the shores of Nigeria. Within the country, most hospital expenditures incurred by these same poor patients are made out of pocket [6–8, 10]. Other determinant factors reported by some scholars include the age of the patient, their occupation, the nature of illness they experienced, and the functional status of the health facilities which the patients visit (i.e., in terms of the attitude and skill of staff) [7, 9, 10].

Just like any other part of the country, Benue State is not exempted. Benue State Ministry of Health (BSMoH) Report of 2009 shows that Benue State with a projected population of 4,497,988 in 2008 had 368 registered medical doctors giving doctor-patient ratio of 1:12,222, while the number of registered nurses/midwives is 2,172 representing nurse-patient ratio of 1:2,071 [11]. This study, therefore, focused on the utilization of health care services in rural areas in Benue State, based on four conceptual predictions. The first is that the patient's utilization of health services largely depends on their socioeconomic status. The second factor is based on the assumption that the income of people greatly affects their choice of health care services [12]. Another dimension is the perception of illness and the availability of health facilities,

which may determine the use of health facilities [13]. Finally, the fourth dimension is the establishment of the association between the socioeconomic status of the household heads and their belief system which may influence their health-seeking preference for themselves, other adults, and young members of their families [14].

## 2. Materials and Methods

**2.1. Study Location.** The study was community-based, conducted in Apa Local Government Area (LGA) of Benue State from January through February 2012. Apa is one of the twenty-three LGAs in Benue State, North Central Nigeria. The Local Government Area was created in August 1991 by the then Military Head of State of Nigeria, General Ibrahim Badamosi Babangida, covering what was the old Ochekwu District of Otukpo LGA. The LGA is made up of 84 villages (settlements) divided into 11 political districts/wards. The major big villages in the LGA include Ugboko (the headquarters), Oji, Ojantele, Akpete, Iga-Okpaya, Ikobi, Odugbo, Ofoke, Oba Alifeti, Idada, Edikwu-Icho, Ugbobi, Ebugodo, and Opaha. The LGA has an estimated population of 996,000 (2006 population census). The Local Government Area shares boundary with Agatu, Otukpo, and Gwer-West Local Government Areas of Benue State to its north, south, and east, respectively, while to its west, it is bordered by Ankpa and Omala Local Government Areas of Kogi State. The Local Government Area is blessed with abundant forest resources and is one of the main sources of timber to big towns like Otukpo. The Local Government Area is also known for its agricultural products with cassava, maize, yam, melon, and guinea-corn being the main farm produce. The people of the Local Government Area predominantly speak a dialect of Idoma language. There is a Comprehensive Health Care Centre located at Ugbokpo which serves as a referral health centre for the people of the LGA. In addition, there is a Primary Health Care (PHC) facility in each of the district headquarters providing health care services to the people. Other health care providers include formal private providers, informal private providers, patent medicine vendors, traditional healers, and faith healers [15].

**2.2. Study Population and Design.** A cross-sectional, community-based, descriptive study design was employed for the study. The study population was the household heads in all the settlements of the 11 districts/wards. The household heads who had experienced any disease episode in the three months prior to the survey were included while those who were not around at the time of the study and those who had never experienced any disease episode 3 months prior to the survey were excluded from the study. Those who did not consent were also excluded.

**2.3. Sample Size Estimation.** A minimum sample size of 138 households was arrived at using the formula (see [16])

$$n = \frac{Z^2 p (1 - p)}{d^2}, \quad (1)$$

with assumption of 90% of the household heads in the community utilizing standard health care services from a previous study [17] and 5% tolerable margin of error at 95% confidence interval. Considering attrition rate of 10%, the calculated sample size was adjusted to 154.

**2.4. Sampling Technique.** The World Health Organization (WHO) multistage sampling techniques used for Lot Quality Assurance Sampling (LQAS) to assess Oral Polio Vaccine (OPV) coverage in Nigeria in 2011 were adopted for the survey. In the first stage, six wards (including the LGA headquarters) out of the 11 in the LGA were selected by convenience. The selection was based on the estimated population statistics obtained from the LGA head office before the commencement of the survey. The selected wards were more populated and had more households. Six villages from the selected wards were selected later using the probability proportionate to the population size (PPS) methodology. The selected settlements were then mapped and numbered. Twenty-nine (29) households were selected from Ugbokpo and twenty-five from each of the remaining settlements to arrive at the total minimum sample size of 154. A household is defined as people eating from a common pot. A compound may include many households. The first household was selected using a table of random numbers and the subsequent households were selected by systematic method. To ensure that the sample is spread across the settlement, once a household is selected, three households next to the surveyed one were excluded and the movement was maintained continuously to the right side. In situations where the research assistants arrived at the same house again, they turn to the left and continue sampling until the maximum for each of the settlements was obtained. Where there is more than one household in a compound, only one was selected by simple random sampling using a table of random numbers [18]. In situations where an eligible household head was absent, a repeat visit was conducted by research assistants for three consecutive times before a replacement would be considered. Such households were revisited at specified periods when they were probably assumed to be present.

**2.5. Data Collection.** The research was conducted through the administration of structured questionnaires to household heads in the settlement. The questionnaire was first prepared in English and then translated into the local language (Idoma) and then translated back to English to check for consistency and phrasing of difficult concepts. Trained research assistants were used to collect the data. Pretesting was conducted with 16 household heads (10% of estimated sample), at Akpete ward, about 20 km away from Ugboko (the headquarters). Questions causing difficulty in the pretest were rephrased and corrected. Information obtained was the type of health-related events experienced in the three months preceding the study, type of health services sought for, and the factors influencing their choice.

**2.6. Measurement.** The main outcome used in the study was the common disease conditions the household heads

experienced in 3 months before the survey and the health-seeking preference. Any disease condition experienced is considered as an episode and an individual can have several morbid conditions simultaneously. Where two or more episodes occur simultaneously, the primary condition is considered as the disease condition experienced. Any disease in which no form of medical attention was sought for was not considered; thus, the relative frequency of occurrence of a disease experienced by a respondent was expressed per 154 (total). The disease conditions considered were grouped into medical, surgical, and psychiatric conditions.

**2.7. Data Analysis.** All analyses were conducted using the Statistical Package for Social Sciences (SPSS) version 20. The analysis deals with responses to four issues, the sociodemographic characteristics, the type of disease condition experienced, where health care was sought, and reasons for health-seeking preference. Data sorted were categorized, summarized, and presented in exploratory formats as frequency tables. Chi-square ( $\chi^2$ ) test was used for test of association between the sociodemographic variables and the main outcome of the study, with statistical significance set at  $P$  value of 0.05. Linear relationship between the predictor variable and the outcome (criterion variable) was further performed for selected independent predictors that have significant chi-square, using multiple logistic regression models by controlling for possible confounders.

### 3. Results

**3.1. Sociodemographic Characteristics.** The sociodemographic characteristics of the respondents as shown in Table 1 show that the respondents' ages ranged from 17 to 68 years with the mean age of 34.6 years (SD = 2.9). The majority of the household heads were male ( $n = 133$ , 86.4%). The predominant highest educational level attained is secondary (37.7%), while the occupation and the monthly income were farming (62.3%) and 1000–5000 naira (46.1%), respectively.

Tables 2 and 3 provide information on the types of disease conditions experienced in the three months before the survey and the reported choice of health-seeking preference. The table reveals that a very small proportion of the respondents (5.8%) experienced psychiatric disease conditions, while the majority (77.9%) experienced medical disease conditions, followed by surgical conditions (16.2%). Among the medical conditions, malaria predominates (20.0%) and the least was hemorrhoids (0.8%) which was described as pile. The majority of the cases in surgery categories were abnormal growths/tumors (28.0%), while in the psychiatry category depression predominates (44.4%). The overall picture across all the disease conditions shows a strong preference for modern health care except in psychiatric disease conditions, where traditional/spiritual healers health care (55.5%) is more preferred (Likelihood Ratio = 29.039;  $P$  value = 0.000). Of the total of 120 (77.9%) respondents who had medical conditions, the majority of them (41.7%) sought patent medicine vendors when they experienced illness, while 24 (20.0%) sought private health facilities. Twenty-one (17.55%) sought self-medication, 15 (12.5%) sought public health facilities, and less

TABLE 1: Sociodemographic characteristics of respondents ( $n = 154$ ).

Characteristic	Frequency	Percent
Age group (years)		
<20	12	7.8
20–30	50	32.5
31–40	35	22.7
41–50	25	16.2
51–60	20	13.0
>60	12	7.8
Sex		
Male	133	86.4
Female	21	13.6
Religion		
Christian	119	77.3
Muslim	20	13.6
Traditionalist	15	9.7
Educational status		
None	25	16.2
Quranic	8	5.2
Primary	41	26.6
Secondary	58	37.7
Tertiary	22	14.3
Occupation		
Farming	96	62.3
Business	33	21.4
Civil service	25	16.2
Monthly income (in numbers)		
<1000	40	26.0
1000–5000	71	46.1
6000–10000	28	18.1
>10000	15	9.7

than one-third (8.3%) sought traditional medications. The majority of those that had surgical conditions sought private hospitals as their first point of contact (40.0%), while a small proportion (14.3%) of the respondents resorted to self-medication. The approximate median out-of-pocket expenditure on treatment per illness episode in medical, surgical, and psychiatric conditions was two hundred and twenty-five naira (₦225.00), five thousand naira (₦5000.00), and three hundred and fifty-five naira only (₦355.00), respectively.

Table 4 explores the reasons for health care seeking preference and it reveals that there is a statistical relationship between the health-seeking preference and the reasons for choosing a particular health care service (Likelihood Ratio = 76.720;  $df = 12$ ;  $P$  value = 0.000). Amongst the reasons provided by the respondents, the cost of medication (42.2%) from the preferred health care service predominates, followed by the presumed skills of the staff (21.4%) and the proximity to the health facility (20.8%). The attitude of the staff (15.6%) constitutes the least reason.

Table 5 is a multivariate analysis of sociodemographic variables (predictors) to health-seeking preference (criterion variable). Using the enter method, a significant model

TABLE 2: Respondents' major causes of disease.

Disease conditions	Frequency	Percent
Medical		
Malaria	24	20.0
Typhoid	15	12.5
Respiratory tract infection	13	10.8
Genitourinary tract (UTI)	12	10.0
Hypertension	8	6.7
Skin rashes	8	6.7
Dysentery	6	5.0
Jaundice	6	5.0
HIV/AIDS	5	4.2
Tuberculosis	5	4.2
Peptic ulcer	4	3.3
Arthritis	4	3.3
Conjunctivitis	3	5.0
Cholera	3	2.5
Diabetes mellitus	3	2.5
Hemorrhoids (piles)	1	0.8
Total	<b>120</b>	<b>100.0</b>
Surgery		
Tumors	7	28.0
Abscess	5	20.0
Lacerations/cuts	4	16.0
Hernia	2	8.0
Caesarean section	2	8.0
Fibroid	2	8.0
Appendix	2	8.0
Ectopic	1	4.0
Total	<b>25</b>	<b>100.0</b>
Psychiatry		
Depression	4	44.4
Epilepsy	3	33.3
Irrational behaviour	1	11.1
Madness	1	11.1
Total	<b>9</b>	<b>100.0</b>

emerged ( $F_{6,147} = 52.677$ ,  $P < 0.0005$ , and Adjusted  $R$  Square = 0.826). Significant variables are age, religion, and occupation. Age has higher impact (Beta = 0.892) on the health-seeking preference of the respondents as compared to their occupation and religion (Beta = 0.368 and  $-0.746$ , resp.). Monthly income, sex, and the educational level of the respondents do not have a significant impact on their health-seeking preference ( $P > 0.0005$ ).

#### 4. Discussion

In our study, the sociodemographic correlates of choice of health care facility visited by patients vary from one disease condition to the other. The sociodemographic characteristics of the respondents in this study resemble those of a typical agrarian community as the majority of the household heads are farmers with a monthly income structure of about 5,000

TABLE 3: Health-seeking preference by disease condition of respondents.

Health-seeking preference	Disease condition			Total
	Medical freq. (%)	Surgery freq. (%)	Psychiatry freq. (%)	
Self-medication	21 (17.5)	1 (4.0)	0 (0.0)	22 (14.3)
Patent medical store	50 (41.7)	5 (20.0)	0 (0.0)	55 (35.7)
Traditional/spiritual	10 (8.3)	4 (16.0)	5 (55.6)	19 (12.3)
Private	24 (20.0)	10 (40.0)	3 (33.3)	37 (24.0)
Public	15 (12.5)	5 (20.0)	1 (11.1)	21 (13.6)
<b>Total</b>	<b>120 (100.0)</b>	<b>25 (100.0)</b>	<b>9 (100.0)</b>	<b>154 (100.0)</b>
Median out-of-pocket expenditure per illness episode (₦)	<b>225 (3.90)</b>	<b>5200 (89.97)</b>	<b>355 (6.14)</b>	<b>5780 (100.0)</b>

Likelihood Ratio = 29.039; df = 8; P value = 0.000.

TABLE 4: Reasons by choice of type of health care services.

Health-seeking preference	Reasons for health-seeking preference				Total
	Cost of medication	Proximity	Attitude of staff	Skill of staff	
Self-medication	15 (68.2)	0 (0.0)	0 (0.0)	7 (31.8)	22
Patent medical store	20 (36.4)	24 (43.6)	6 (10.9)	5 (9.1)	55
Traditional	5 (26.3)	0 (0.0)	10 (52.6)	4 (21.1)	19
Private	20 (54.1)	7 (18.9)	6 (16.2)	4 (10.8)	37
Public	5 (23.8)	1 (4.8)	2 (9.5)	13 (61.9)	21
<b>Total</b>	<b>65 (42.2)</b>	<b>32 (20.8)</b>	<b>24 (15.6)</b>	<b>33 (21.4)</b>	<b>154</b>

Likelihood Ratio = 76.720; df = 12; P value = 0.000.

TABLE 5: Multiple linear regression.

Predictor variable	Dependent variable: health-seeking preference	
	Beta	P value
Age (years)	0.892	$P < 0.0005$
Sex	0.106	$P = 0.033$
Religion	-0.746	$P < 0.0005$
Education level	0.099	$P = 0.091$
Monthly income	-0.003	$P = 0.979$
Occupation	0.368	$P = 0.003$

naira or less. When translated to international standards of living cost, it is less than one US dollar per day. By implication, the entire family's access to appropriate health care services can be impeded since the level of income of the household head greatly affects their choice of health care services [6–8, 11].

On health-seeking preferences among patients, this study displayed nonuniformity for the different disease conditions experienced by the respondents. While there is overwhelming reliance on patent medicine vendors by patients with medical conditions, those with surgical conditions had a relatively higher preference for private health practitioners. On the other hand, a patient that primarily presents with psychiatric health challenges had preference for traditional or spiritual homes as against other options of health care services (Table 3). There is consistency between the hypothetical reasons reported in literatures [12–14] and actual behaviours reported in this study. All these is suggesting that

information on health education and the appropriate course of action for the most common diseases, which is the focus of the health intervention, seems to have been influenced mainly by the socioeconomic status of individuals. A potential explanation may lie in the source of income of the household heads [6], low doctor to patient ratio [11], and recent spread of health posts and health extension workers in Nigeria [5, 6]. By implication, since there is a skewed distribution of health facilities and professional staff across the country [6, 11], the majority of out-of-pocket expenditure by patients in North Central Nigeria will commonly be wasted on ineffective or unnecessary products and services. Hence, going by the WHO standard of health care [19], there is a lot of improvement desired in this area of the health sector and even the health-seeking preferences of patients.

In terms of access to health service as a determining factor to the quality of care that patients may seek [12, 14], our study identifies cost of medication, proximity to health facility, and attitude of staff as being among the major determinants of patients' preference for the different types of health care options available in the rural areas of North Central Nigeria (Table 4). In this study, there is a significant statistical relationship between the costs of medication and the health-seeking preference displayed in all the disease conditions examined (Likelihood Ratio = 76.720; df = 12; P value = 0.000). The direct implication is that increasing user charges decreases the likelihood of seeking health care from the formal health provider relative to self-treatment and patent medicine vendor. Our findings are consistent with those reported in other studies where user fees were reported to be a key factor determining health-seeking behavior of sick

individuals [20, 21]. However, this contradicts the findings by Schwartz et al. and Akin et al. who found user fees to be insignificant determinants of choice of health care providers in the Philippines [22] and Nigeria [23], respectively.

This study also demonstrates the influence of distance on health-seeking preference. Increasing the distance would increase the likelihood of a patient opting for informal health care providers rather than any of the formal health care providers. This negative impact of proximity of patient to health facility is higher at the patent medicine vendor (43.6%), followed by private health facility. These findings are comparable to findings in a research carried out in Kenya [20, 24] and the Philippines [22]. The effect of the distance in this study can be explained by the extra monetary cost which distance adds to the total cost of treatment. Looking at the average out-of-pocket expenditure on treatment per illness episode in this study (Table 3), if those who visit private or public health facilities have already made a decision to spend extra money on treatment, the impact of distance on the choice probability for their health-seeking preference should not affect their choice substantially. However, assuming that visiting private or public facility is driven by low user fees, holding other factors constant, an increase in distance is synonymous with increasing price (i.e., through travel cost) and has the effect of lowering the probability of visiting such a facility. In the final analysis, the patient may seek options like the patent medicine vendors which may even carry the drugs to the patient's door post. However, the findings in this study differ from those reported in Benin Republic by Bolduc et al. who used travel time as an indicator of access to medical care and found it to be implausibly positively correlated with the probability of seeking health care at both public and private facilities [25].

Regarding the attitude and skill of the health providers, our study shows that the attitude of the staff (52.6%) increases the likelihood of patients opting for traditional health care providers, while the presumptive negative perception of the skill of the practitioner by the patient made most of the patients settle for self-medication (31.8%). The implication of this is that the patients may build more trust in traditional health providers and themselves in the event of any illness or injury relative to going for modern treatment. This could be explained by the sociodemographic characteristics of the respondents. Being from an agrarian community, the patients' perspectives on the services they receive could be shaped by their cultural values, previous experiences, perceptions of the role of the health system, and interactions with providers; and all these in many ways affect how clients view the risks and benefits of care.

In the multivariate analysis carried out in our study, the effect of age and religion on the demand for health care is significant and positive across all the health facilities indicating that the probability of using professional health care service relative to self-treatment increases with age ( $P < 0.0005$ ) and the type of religion practiced by the individual ( $P < 0.0005$ ). This finding could be confounded by other variables such as educational level ( $P = 0.091$ ) and monthly income ( $P = 0.979$ ) which are likely to increase with age. The result is in line with the fact that the households headed by older people

have a higher propensity of seeking professional health care rather than self-medicate. This to a large extent implies that the head of the household still controls economic resources even in a rural area [6, 26].

## 5. Conclusion

The leading causes of illness experienced by respondents were medical conditions and the majority of them sought treatment from patent medicine vendors while those who experienced surgical cases predominantly sought private health facilities and those who had psychiatric cases often sought traditional medications. The overall median out-of-pocket expenditure on treatment per illness episode was one thousand nine hundred and twenty-six naira and sixty-seven kobo (₦1926.67) only. The dominant determining sociodemographic variables were age and religion of the patients and the financial access and proximity of the health facility. Hence, in order to meet the health care needs of patients, it is pertinent that the unmet needs of patients are properly addressed by appropriate agencies.

## Limitations of the Study

Since the inclusion was based on past experience of disease episodes 3 months prior to the survey, there could be recall bias which must have missed some important subjects which could have provided very useful information. Courtesy bias may be a significant limitation to this study. The interviewed subjects may have been reluctant to disclose use of traditional healers and traditional medicine as they may tend to be in hospitalized cohorts.

## Ethical Approval

Ethical approval for the study was obtained from the ethical committee of Benue University Teaching Hospital, Makurdi, before the study was conducted. An informed written consent was also obtained from Apa LGA Council Chairman and the entire selected village heads. Verbal consent of the respondents was also sought.

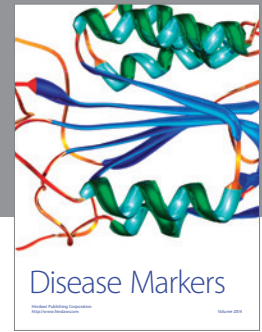
## Conflict of Interests

The authors declare that there is no conflict of interests regarding the publication of this paper.

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