



Health and financial status as predictors of the utilization of health care services in Bauchi

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Abstract

Background: Health Care is very vital for human existence. It is the act of maintaining or improving of one's health through the prevention, diagnosis and treatment of illness. This study was aimed determining how health status and financial status influence the utilization of Health Care services by rural dwellers in Bauchi State. Three research questions were answered using descriptive statistics, and analyzed using SPSS version 25. Survey design was used for the study, 3 local government areas were selected from each senatorial district.

Materials and Methods: A total of 3,447 respondents were sampled for the study, using simple random sampling procedure. A well-structured questionnaire was used to elicit data for the study. The Instrument Titled "Questionnaire on Factors Affecting the utilization of Healthcare Facilities in Rural Areas. The reliability index was determined using Cronbach's alpha test of internal consistency. The instrument was reliable at an alpha value of 0.861.

Results: The result shows that the utilization of health care centers in Bauchi State is very low among the rural dwellers. In the rural areas of Bauchi State, the health status of the respondents did not aid the utilization of health care centers ($r = 0.006$). The insurance is positively correlated with health care centers utilization ($r = 0.009$). Occupation ($r = -0.022$) is negatively correlated with utilization of health care facilities among rural dwellers of Bauchi State. The financial status of the respondents is not significantly correlated with utilization of healthcare services in Bauchi State.

Conclusion: The utilization of health care centers in Bauchi State is very low among the rural dwellers. In the rural areas of Bauchi State, the health status of the respondents did not aid the utilization of health care centers. Insurance can influence the utilization of health care services positively, while occupation. The Government of Bauchi, as well as none governmental organization must do a lot to enlighten the residence in the rural areas of the state on the importance of utilizing health care services, and the consequence of neglecting to do so, so as to encourage more patronage of the health facilities and thereby reduce mortality.

Keywords: Health care, Insurance, Financial status, Rural dwellers, Utilization

Introduction

Health Care is very vital for human existence. It is the act of maintaining or improving of one's health through the prevention, diagnosis and treatment of illness. Healthcare of an individual is usually managed by health practitioners in facilities provided by the government or entrepreneurs who are willing to invest in the health sector. The choice of health facility varies from person to person and from place to place. It also depends on factors predisposed to the persons to use the facilities [1]. As a population of a country ages, there is the increase in diseases and health conditions which demands an increasing use of health care services. However, the trend is that a larger percentage of the population rather resort self-medical care than use the hospital facilities around them. It was stated that the utilization of health services in developing countries is not a satisfactory, owing to the importance in public health policy issues of any country [2]. The list of some factors that are associated with utilization of health services; among the factors listed are health status of the individuals and their financial status [3].

The health status of an individual involves his/her wellness or otherwise. The later may involve metabolic diseases or diseases caused by microbes. Metabolic diseases include diabetes, obesity, kidney failure, heart diseases etc., while diseases caused by microorganisms include bacterial, fungal, protozoal

and viral diseases. Thus, the health status of an individual can be a barrier to the utilization of health care services.

Financial Barrier has been a major hindrance of usage of health care services [4]. It was also stated that access to health care is tied to the affordability of the health insurance. Financial [4]. Barrier to health care is usually found among the low income earners who are uninsured that the high income earners [5]. In a 2013 commonwealth survey, most countries ranks low when it comes to access to health care because of the large number of insured people [6]. In a study conducted by on the importance of Medical Insurance to access to proper health care, it was found that people who lack insurance coverage have limited access to health care than those who don't, and a bulk of the adult who needed medical care could not afford it. They found that only 20% of the adults in the study area were able to conveniently afford their medical bills without insurance [7].

In a study carried out from a period of 2004–2014, uninsured adults were 4–5 times more likely than those who had private coverage and 1.5–3.0 times more likely than those who had medical insurance to report difficulty in medical care and prescription access. For adults who had insurance from government, medical care access problems were stable until 2008 and then decreased through 2014 [8].

Some researchers observed that the financial burden of paying for health services is analyzed at the household level. It is measured as a share of out-of-pocket health payment in a

household's total capacity to pay. At any given period of time there always are some households that have no spending on health care^[9, 10], some researchers found that average monthly salary showed a high positive correlation with utilization of dental services. They found that if the average monthly salary were reduced, a great number of patients would reduce their dental services sought for in the health centers. They therefore concluded that a low salary appears to discourage patients from seeking medical and dental services in Japan^[11]. A study found that health status is a very strong determinant of the type of healthcare services preferred by older adults. Ghanaians found that People with higher income preferred the private health facilities, while those with lower income rather use the traditionalist or public hospitals. Another study revealed that income correlates highly with risk factors for chronic disease: noting that people, who have lower family income have higher rates of heart disease, stroke, diabetes, or hypertension, and have four or more common chronic conditions. Accordingly, People in families whose income makes them fall on the poverty level are more likely to be obese and to smoke cigarettes than wealthier people. Adults who live in poverty are also more likely to have self-reported serious psychological distress, as measured by a series of questions about their perceived mental health. They stated that Economic resources (such as income and wealth) enable access to material goods and services, including health-care services. A study found that people with low income were more likely to delay in receiving medical care due to the cost than those with higher income^[12]. They therefore concluded that the health-care needs of those under the poverty level are still being unmet because of their less utilization of medical facilities.

The intensity of illness significantly affects utilization of health care services. The higher the severity or number of ill people, the higher the degree of utilization of services. The way people report their health status is directly related to their use of medical services^[2]. In a study undertaken in southern Brazil, the probability of visiting a doctor by people with poor health is 30% higher than those who reported excellent health^[14].

It has been discovered that the most significant predictor for health care utilization is the individual's health status. Health status had been determined to be a significant predictor for prescription drug use. Prescription drug insurance has also been shown to increase pharmacy utilization, but its impact on overall health care costs has yet to be determined^[15]. Persons with disabilities often have health and medical needs stemming from their disability or from an underlying condition, co-occurring conditions, or common risk factors. Therefore, they may have greater need for both general and specialty care than adults without disabilities. They found that in general, adults with a disability reported more barriers to care than adults without a disability^[16].

Generally, in Nigeria, it has been found that people hardly visit health facilities unless they are seriously ill, as majority believes that seeking health care in health facilities is too costly. In situation of illness, a utilization level of 76.7%^[17], a 77.8% level of utilization of health facilities^[18]. A study revealed that only 50% of the respondent utilized health care facilities when they are ill^[19]. This study therefore seeks to examine the factors that promotes the utilization of healthcare services by rural dwellers residing in Bauchi State, Nigeria.

Several studies have shown that rural communities have higher mortality rate and increased financial burden caused by chronic diseases, limited financial reimbursement for healthcare costs, a higher percentage of people at the poverty level, demographic

aging and de-population^[12]. Generally Health service providers in rural areas struggle to maintain primary health services because of lack of all the basic amenities needed in the health care centers. Rural communities' dwellers suffer a higher mortality from illness, since they are without much opportunity and time to learn about health, residents of rural areas tend to lack awareness and health literacy. The difficulties of travelling to clinics in cities make it harder for individuals to maintain their health, and they tend to visit health services only irregularly. The study therefore seek to fill by gap by asking: what are the factors that affect the utilization of health care services by inhabitants of rural areas of Bauchi State?

Research Questions

The following research question were raised to guide the study

1. What is the level of Utilization of health facilities by rural dwellers in Bauchi State?
2. How does health status influence the utilization of health care services by rural dwellers of Bauchi State?
3. How does financial status influence the utilization of health care services by rural dwellers of Bauchi State?

Materials and Methods

Study Design

The design for this study is the survey design. The survey design is a systematic means of data collection from a group of people considered to be representative of the entire population. It involves looking at people who differ on one key characteristic at one specific point in time. Survey research could be observational in nature, questionnaire based, panel base or interview. For the purpose of this study, the questionnaire based survey research was conducted. This study design was chosen because it is the most suitable method of getting first hand data for the purpose of describing a population that is being studied.

Study Location

Bauchi State is a State in northern Nigeria with its capital in Bauchi. The State occupies an area of land totaling 49,119 km² (18,965 sq²) representing about 5.3% of Nigeria's total land mass and is located between latitudes 9° 3' and 12° 3' north and longitudes 8° 50' and 11° east. The state is bordered by seven states, Kano and Jigawa to the north, Taraba and Plateau to the south, Gombe and Yobe to the east and Kaduna to the west. It spans between two vegetation zones namely the Suan Savannah and the Sahel Savannah.^[21]

Bauchi State has a total of 55 tribal groups in which Gerawa, Sayawa, Jarawa, Kirfawa, Turawa Bolewa, Karekare, Kanuri, Fa'awa, Butawa, Warjawa, Zulawa, Boyawa MBadawa, Hausa and Fulani are the main tribes. Bauchi state is an agricultural state, its vast fertile soil is an added advantage for agricultural products, which include maize, rice, millet, groundnut and guinea corn. Irrigation farming is practiced and supported by the use of dams like Balanga Dam, etc. cattle and other livestock are also reared in the state. The state has industries like the Bazamri PVC – Wire Limited, Kuda Nails Factory, Yankari Natural Water Company, Zaki Flour Mill and Arewa Ceramic Industry.

Sample Size and Sampling Technique

Using a simple random sampling technique, 3 local government areas were selected from each senatorial district; the LGAs selected are presented in Table 1.

Table 1: Sample size Determination for the Three LGAs selected from each Senatorial Districts

S/N	Items Zone	Area Concerned	Targeted Population	Average
1.	Southern zone	Bauchi L.G.A	233083	164,169
		Tafawa-balewa L.G.A	104462	
		Alkaleri L.G.A	154963	
		Total	492508	
2.	Northern zone	Katagum L.G.A	138331	101427
		Shira L.G.A	110477	
		Jama'are L.G.A	55474	
		Total	304282	
3.	Central zone	Ningi L.G.A	182213	141210
		Misau L.G.A	123413	
		Darazu L.G.A	118003	
		Total	423629	

Kish Leslie formula was used to determine the sample size of quantitative data²³.

$$n = z^2 pq / d^2$$

d = degree of precision of the study

z = standard normal deviation corresponding to 95% confidence interval which is 1.96

p = population of 50%²³

$$q = (1-p)$$

$$n = (1.96)^2 \times 0.5 \times 0.5 / (0.05)^2 = 384$$

$$n_o = 384$$

Sample size for each LGA

$$n / 1 + (n_o - 1 / \text{pop})$$

$$\text{For southern zone} = 384 / 1 + (384 - 1) / 164169 = 383$$

$$\text{For 3 affected Local Government} = 383 \times 3 = 1149$$

$$\text{For northern zone} = 384 / 1 + (384 - 1) / 10142 = 7 \text{ } 383$$

$$\text{For 3 affected Local Government} = 383 \times 3 = 1149$$

$$\text{For central zone} = 384 / 1 + (384 - 1) / 164169 = 383$$

$$\text{For 3 affected Local Government} = 383 \times 3 = 1149$$

$$\text{Total} = 3447$$

A total of 3447 respondents were sampled for the study. The procedure used is the simple random sampling procedure.

Research Instrument

A well-structured questionnaire was used to elicit data for the study. The Instrument Titled "Questionnaire on Factors Affecting the utilization of Healthcare Facilities in Rural Areas. The Instrument is divided into section. The First Section (Section A) dealt with the demographic and general information of the respondents. Variable such as age, gender, educational level was addressed in this section. The Second Section (Section B) addresses the living condition of the respondents. Variables addressed here are ownership of house, type of toilets used, access to safe drinking water, etc. The Third Section (Section C) addresses the health utilization of the health centers, while the Fourth Section (Section D) dealt with the various factors that can influence the respondent use of health facilities around them.

Reliability of the Research Instrument

The reliability index was determined using Cronbach alpha test of internal consistency. The instrument was reliable at an alpha value of 0.861.

Method of Data Collection

The questionnaires were administered to adults in rural areas in Bauchi State. The questionnaires were administered by the researcher and some research assistants that were trained to evaluate them and interpret the content of the questionnaire to the respondents in the local dialect (for those who cannot read

or understand English Language). The questionnaires were collected personally by the researcher and assistants immediately the questionnaires were filled by the respondents. All questionnaires collected from the respondents were received by the researcher, and data retrieved from the questionnaires were collated for analysis.

Method of Data Analysis

The data from the study were presented using descriptive statistics of mean and percentages for the research questions. The analysis was carried out using SPSS version 25.

Implication of the Study

The result of the research work will help enlighten government on how to tackle problem that hinders utilization of Healthcare Facilities in Bauchi state and the country at large.

Results

The result obtained from the data analyses is presented in tables and figures. The demographic representation of the respondents was first presented and thereafter the research questions answered.

Demographic variables of respondents

The respondents' gender, age, marital status, educational status and occupation. The percentages of respondents based on these classification is presented in Table 2.

Table 2: Demography of respondents

Variables		N	%
Gender	Male	1447	42.0
	Female	2000	58.0
Age	under 20yrs	400	11.6
	20- 25yrs	600	17.4
	26-30yrs	447	13.0
	31- 35yrs	850	24.7
	36- 40yrs	700	20.3
	above 40yrs	450	13.1
Marital Status	Single	200	5.8
	Married	2500	72.5
	Divorced	400	11.6
	Separated	347	10.1
Educational Qualification	No formal education	1687	48.9
	Primary	1050	30.5
	Secondary	450	13.1
	Tertiary	260	7.5
Occupation	Unemployed	1500	43.5
	Farmers	847	24.6
	civil servant	400	11.6
	work in a private company	150	4.4
	self employed	400	11.6

Table 2 shows that 42% of the respondents are males while 58% of them are females. 11.6 were under the age of 20, 17.4% were between 20 and 25 years of age, 13% were between 26 and 30 years of age, 24.7% of the respondents were between the ages of 31 and 35 years, 20.3% between the ages of 36 and 40 while the remaining 13.1% were above the age of 40. When classified based on their marital status, only 5.8% of the respondents were singles, 72.5% are married, 11.6% divorced and 10.1% of the respondents are separated from their spouses. Close to half of the respondents sampled (49.9%) do nothave any form of formal education, only 30.5% had primary education as their highest educational qualification, 13.1% had secondary education and only 7.5% studied up to the tertiary level of education. Based on the occupation of the respondents, 43.5% are unemployed, 24.5% are farmers, 11.6% are civil servants, 4.4% works in some private companies around and 11.6% are self-employed.

Research Question One

What is the level of Utilization of health facilities by rural dwellers in Bauchi State?

Table 3: level of Utilization of health facilities by rural dwellers in Bauchi State

		Frequency	Percent
in the past 6 months, have you or members of your family been ill and needed treatment	No	1197	34.7%
	Yes	2250	65.3%
where did you go for treatment	Traditionalist	1947	86.5%
	drug store	251	11.2%
	hospital/clinic/health center	52	2.3%
how would you rate the usage of healthcare facility closest to you	very low	800	23.2%
	Low	1000	29.0%
	High	1007	29.2%
	very high	640	18.6%

Table 3 shows that in the rural areas of Bauchi State, out of the 3447 respondents, 65.3% (2250) of them stated that in the past six months they were sick and actually need treatment. But when asked where they went for treatment, only 2.3% (52) went to the hospital for treatment. 11.2% (251) got drugs form the drug shops around and 86.5% (1947) visited the traditionalist. The usage of the closet hospital or health care center was rated by the respondents. 23.3%(800) rated the usage very low, 29%(1000) rated it low, 29.2% (10070 rated the usage of the health center closet to them high while only 18.6% (640) respondents rated its usage very high. From the Table 3, the utilization of health care centers in Bauchi State is very low among the rural dwellers.

Research question Two

How does health status influence the utilization of health care services by rural dwellers of Bauchi State?

Table 4: Correlation between need factors and utilization of health care services

		Health status	Utilization
Health status	Pearson Correlation	1	.006
	Sig (2-tailed)		.716
	N	3447	3447
Utilization	Pearson Correlation	.006	1
	Sig (2-tailed)	.716	
	N	3447	3447

Health status of a respondent is one of the need factor that could necessitate the utilization of health care center, but table 4.4 shows that in the rural areas of Bauchi State, the health status of the respondents did not aid the utilization of health care centers (r = 0.006).

Research question Three

How does financial status influence the utilization of health care services by rural dwellers of Bauchi State?

Table 5: Correlation between enabling factors and utilization of health care services

	Utilization (r)
Insurance	0.009ns
Income	-0.017ns
Occupation	-0.022ns

N = 3447, ns- not significant

Table 5 shows that insurance is positively correlated with health care centers utilization (r = 0.009). But income (r = -0.017) and occupation (r = -0.022) are negatively correlated with utilization of health care facilities among rural dwellers of Bauchi State. The financial status of the respondents is not significantly correlated with utilization of healthcare services in Bauchi State.

Discussion

The utilization of health care centers in Bauchi State is very low among the rural dwellers (about 14%). On the contrary, a study on the utilization of health and medical health care seeking behaviour and unmet health needs in rural areas of Kenya, found that about 70% to 80% of the people living in rural areas of Kenya who were sick utilized the formal healthcare facilities over informal services²⁴. Another study revealed that about 76.7% of the household members who reported been ill, sought healthcare in a health facility¹⁷. They added that about 94% of those who sought healthcare in health facilities visited the dispensary –level facilities, while the remaining 6% sought health care in hospital and clinics in the sub-counties. It has been found that generally in Nigeria, people hardly visit health facilities unless they are seriously ill, as majority believes that seeking health care in health facilities is too costly. A study in South-Western Nigeria revealed that only 50% of the respondent utilized health care facilities when they are ill. The variations observed may be due to different study locations and state government policies¹⁷.

Health status of a respondent is one factor that could necessitate the utilization of health care center, but the findings in the present study however showed that in rural areas of Bauchi State, the health status of the respondents did not aid the utilization of health care centers (r = 0.006). Some reports also showed however, that the intensity of illness significantly affects utilization of health care services. The higher the severity or number of ill people, the higher the degree of utilization of services, also, the probability of visiting a doctor by people with poor health is 30% higher than those who reported excellent health^{2,14}.

The study further revealed that the financial status of the respondents which may be evident in the insurance, occupation as well as income was not significantly correlated with their utilization of health facilities in the study location. In this study, insurance is positively correlated with health care centers utilization. But income and occupation are negatively correlated with utilization of health care facilities among rural dwellers of Bauchi State. It has been observed that the factors such as medical insurance, income, proximity, free health care, and

influence from third party are all significantly correlated with healthcare facilities utilization²⁰. The variation between this report and the present study may be as a result of variation in study area. In a study conducted on health insurance and the utilization of health care, it was found that health insurance increased access to health care and utilization of health services²⁵. This report agrees with the findings in the present study. In Ghana however, a study found that those without insurance preferred the pharmacy and traditional treatment¹², this contradicts the findings in this study.

Conclusion

Based on the outcome of this study, and the discussions made, the following conclusions are drawn:

1. The utilization of health care centers in Bauchi State is very low among the rural dwellers.
2. In the rural areas of Bauchi State, the health status of the respondents did not aid the utilization of health care centers.
3. Insurance can influence the utilization of health care services positively, while occupation.

Recommendations

Based on the conclusions drawn in this study, the following recommendation has become necessary:

1. The Government of Bauchi, as well as none governmental organization must do a lot to enlighten the residence in the rural areas of the state on the importance of utilizing health care services, and the consequence of neglecting to do so, so as to encourage more patronage of the health facilities and thereby reduce mortality.
2. Sick people in the rural areas should be discouraged from going to traditionalist, but to visit the health care centers, as this will help reduce mortality.
3. Since health Insurance is a factor that influence the utilization of health care services, then the state government should make such readily available for the populace to access, particularly the government workers in the rural areas. This can be achieved through policy making and execution with subsidy.

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