Review Article

Dermatology Journal of Cosmetic and Laser Therapy

Determinants of Demand for Health Care Services by Rural Households

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Submitted: 2023, Apr 05; **Accepted:** 2023, May 08; **Published:** 2023, Jun 08

Citation: Michael, O. O., Adesola, A. A. (2023). Determinants of Demand for Health Care Services by Rural Households. *Dearma J Cosmetic Laser Therapy, 2*(2), 08-14.

Abstract

The study looked into the factors that influence rural families in the Akinyele Local Government's need for health care services. Two hundred (200) questionnaires were employed to collect certain important and pertinent data. Regression analysis, percentages, and frequency distribution statistics are some of the techniques employed. This frequency and the percentage allow us to understand how the respondents feel about the queries posed and answers provided. The regression analysis was utilized to determine the variables' sign and size as well as their significance. The regression analysis shows that price of healthcare service, the cost of drug, educational qualification and the distance to health centres are statistically significant in determining the demand for health care services among the people in Akinyele local government area while income, age and gender are statistically insignificant. As price of healthcare services, cost of drugs and distance to health centres are significant at 5% level of significance, education qualification is significant at 10% level of significance.

Keywords: Demand, Health Care, Determinant

1. Introduction

A healthy society reflects the prosperity of a country; therefore, health is a fundamental right of all citizens, and health promotion is integral to health care. According to the definition of health, it is a condition of whole physical, social, and mental wellbeing rather than just the absence of disease or infirmity. Disease is also a part of excellent health, as it is more consistent with poor health. In recent years, the ability to live a socially and economically useful life has been added to the notion of health. The Federal Ministry of Health has stated clearly that the protective, preventive, restorative, and rehabilitative care provided to every citizen of the nation within the limits of available resources is the primary focus of the national health policy. This will ensure that people and communities can live productive, fulfilling lives and contribute to society.

The pursuit of perfect health by man is a social and cultural constant. This may be explained by the fact that human existence and the achievement of specified objectives and aspirations on Earth both depend on good health. The utilization of health facilities is essential if man is to live and operate to his full potential. Because of this, societies have evolved many types of health care systems over time to take care of their citizens. However, issues with the population's health quality, the equitable distribution of healthcare facilities across social groups, and people's access to or use of these facilities, particularly among the underprivileged, continue.

Health care administrators frequently focus on enhancing the standard of staff training, treatment methods, supply availability, and environment of healthcare institutions. Although these initiatives are crucial, many of the population's access challenges are not necessarily resolved by them. There are frequently enough health services available, yet few people use them. Concerns about the availability of services, their physical and financial accessibility, understanding of those resources, instruction on how to use self- and practitioner-provided services most effectively, and cultural treatment norms are all equally relevant.

In Nigeria, the three levels of government—federal, state, and local—all have a continuous list of expenditures they must make for health services. In Nigeria, the private sector also plays significant roles in the provision of healthcare. These include "private for profit" and "private not for profit" healthcare facilities run by corporations, non-profits, and religious organizations. Despite rising public spending on the delivery of modern healthcare, the usage of health services has remained low in Nigeria. This shows that before the decision to seek therapy and the subsequent arrival at a clinic, a plethora of intricate and potentially perplexing options interact. Even when the ailment would be best addressed in public health facilities, those factors are frequently compelling enough to shift attention to other forms of therapy. It follows that a detailed understanding of the elements involved in the usage of health services is necessary to provide patients with accessible and affordable healthcare.

1.1 Objectives of the Study

The main objective of this study is to examine the determinants of demand for health care services by rural households of Akinyele Local Government. The specific objectives are:

• To examine the relationship between the socio-demographic characteristics of the respondents and the demand for health care service in Akinyele Local government.
• To examine the major socio-economic factors that affect or determine use access to health facilities and services by residents of Akinyele Local government.
• To examine the relationship between cost of drugs and the demand for health care service in Akinyele Local government.

2. Literature Review

2 .1 Theory of Demand

The law of demand can be used to explain consumer desire for goods and services. In accordance with the law, demand for a commodity or service decreases as its price rises, all other things being equal. In contrast, the quantity of a good or service required increases as the price of that good or service decreases. This suggests that all other things being equal, the quantity requested and the price of a good are inversely connected. Schedules of demand are used to verify the law of demand. A demand schedule displays the quantities of a product that were desired at various prices at a specific time and location. It might be for a specific person or a certain market (which consists of horizontally aggregated individual demand schedules). The quantity of a good or service that a buyer is willing and able to buy at specific pricing at a given moment, all other things being equal, is referred to as demand. Figure 3.1, which follows, further exemplifies this.

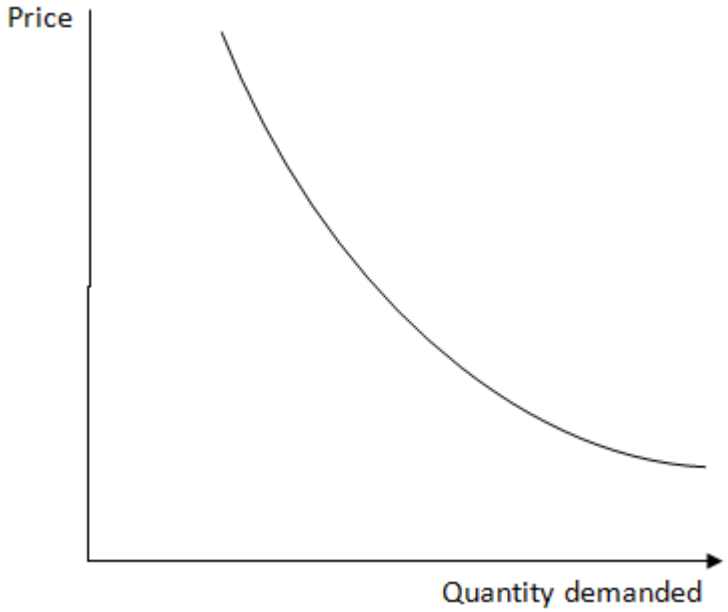

Figure 1: Demand curve for a normal good

2.2 Health Belief Model (HBM)

Irwin M. Rosenstock, Godfrey M. Hochbaum, S. Stephen Kegeles, and Howard Leventhal are the authors of the health belief model. According to HBM, a person's tendency to engage in a particular health-seeking behavior will be predicted by their perception of their own risk of contracting an illness or disease and their confidence in the efficacy of the advised health behavior or action.

With the premise that the two elements of health-related behavior are 1) the desire to avoid sickness, or alternatively get well if already ill; and, 2) the belief that a particular health action would prevent, or cure, illness, the HBM is based on psychology and behavioral theory. In the end, a person's course of action frequently depends on how they see the advantages of and obstacles to engaging in healthy activity. The HBM consists of six structures. The first four constructions served as the HBM's founding principles. The final two were included as knowledge of the HBM increased.

The concept presupposes that an individual's contribution to health and illness prevention is central to four fundamental considerations, which include:

- The individual's perceived susceptibility to disease.
- The individual's perception of illness severity.
- The individual's rational perception of benefits versus cost.
- The individual's cue to action like the media friends and family.

The third and fourth factors might act as the basis for an explanation of this investigation. Cost savings and social, familial, and media pressure can have an impact on how often people use herbal remedies. It is impossible to overstate the influence that friends and family have on our behavior when it comes to seeking health. Additionally, it has been proven that the media has a significant impact on how people behave when seeking out health care.

The theory has come under fire for failing to take emotions into account when explaining health-related behavior; fear, for instance, is thought to have a significant role in motivating people to seek out healthy behaviors.

2.3 Empirical Review

With the help of three study questions and a cross-sectional survey design, Nnonyelu and Nwankwo (2014) investigated

the factors that affect varying levels of access to healthcare in five states in southeast Nigeria [1]. The study discovered that characteristics such as degree of education, gender, patriarchal social structure, rural habitation, poverty, religious and cultural attitudes regarding particular diseases, and location of health facilities, among others, have a significant impact on access to health services. It was advised that in addition to providing health services, institutional arrangements and widespread public education be made to address the various social barriers preventing southeast Nigerians from accessing and fully utilizing health services.

In rural Cross River State, Nigeria, Nkpoyen et al, (2014) examined how health capital and poverty reduction related [2]. The results showed a substantial relationship between the reduction of rural poverty and the health capital variables of health care demand, accessibility and affordability of health care services, and the percentage of household income devoted to health care. It was determined that changes in physical and financial access to health, independent of changes in rural poverty, would have only a little impact on rural residents' decisions about their health care.

Aina et al. (2015) looked into the factors that influence rural households in Nigeria's Ekiti State's demand for health care services [3]. The empirical analysis revealed that, among all the explanatory variables employed, sex, marital status, household expenditure, and waiting time were identified as significant factors affecting demand for health care services, among rural households sourcing health care services from dispensary/Primary health care, private hospitals/clinics, patient medicine stores, general / teaching hospitals, and traditional/spiritual homes. The basic category was patient medicine retailers.

In Ogun state, southwest Nigeria, Omonona et al. (2015) looked at rural households' access to and usage of healthcare services [4]. Structured questionnaires were used to gather primary data. The findings revealed that the respondents had an average household size of 8 people and a mean age of 46. The majority of responders (43.5%) lacked a formal education, and farming was their primary occupation. 58 percent of respondents reported having access to health care services, while only 42.50 percent actually used them. The majority of responders (40.5%) travel 5–9 kilometres before visiting a medical facility. According to accessibility indices, the research area has unequal access to new medical facilities.

In Oyo State, Nigeria, Olaiya and Owoeye (2016) examined the impact of health insurance on the demand for medical treatment [5]. The demand for health insurance in Oyo State is precisely determined by the study. The Chi-Square Test and descriptive statistics were used in the study. According to the report, there is a substantial correlation between age group and payment method, with older persons using health insurance (NHIS) at a rate that is 22.0% higher than that of other women.

The demand for healthcare services and related factors among patients in the community of Tsegedie District, Northern Ethiopia, were explored by Tsegay et al. (2018) [6]. In Northern Ethiopia, a community-based cross-sectional survey was carried out between March 1 and March 30, 2016. According to the report, the majority of patients (72.5%) in the Tsegedie district sought access to contemporary healthcare. The demand for health care services was found to be substantially correlated with the accessibility of the facility, user costs, household educational level, quality of care, and sickness severity. Instead of relying on user fees, out-of-pocket expenses should be replaced by prepayment plans like community-based insurance, and effective health information dissemination initiatives should be strengthened to raise awareness of contemporary treatment.

Zamzaireen et al. (2018) looked into the factors that influence demand for healthcare [7]. The findings revealed that a total of 327 articles from the databases and nine more from other sources were initially searched. Duplicate articles were eliminated. 233 papers were then subjected to primary screening based on their titles and abstracts. Following this, 20 papers were ultimately picked and included in the final literature search after 75 articles received a secondary evaluation for eligibility. The demand for healthcare related to the use of healthcare based on the types of healthcare providers and services offered, health status, and also health spending. Age, gender, ethnicity, education, occupation, household income and size, marital status, family size, health status, health problems, and duration of those problems, medical insurance coverage, medical and non-medical costs or prices, health expenditure, distance to provider, and waiting time were the factors that determined the demand for healthcare.

The 2019 study by Rifkatu and Olanrewaju looked at the factors that influence the use of prenatal care in Nigeria. Economic and noneconomic factors were statistically significant at 1% and 5%, respectively, according to the results of the two-part model analysis. Income, pricing, and supply factors are a few examples of economic variables. Wealth, employment, health insurance, "distance and travel to health facilities," "no provider," and "no female provider" were used to gauge these factors. Age, education, birth order, location, ethnicity, marital status, and religion were non-economic factors.

3. Research Methodology

The theory of demand serves as the foundation for the study's theoretical framework. The law of demand can be used to explain consumer desire for goods and services. In accordance with the law, demand for a commodity or service decreases as its price rises, all other things being equal. In contrast, the quantity of a good or service required increases as the price of that good or service decreases.

3.1 Model Specification

Based on previous literature and consumer demand theory, this study propose a theoretical model to explain the determinants of demand for health care services.

$$D=f(P_1,P_2,Y,A,G,E\&T) \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (1)$$

Where:

D	-	**Demand for Health**
P_1	-	**Price of Health Care Service**
P_2	-	**Cost of Drugs**

Y - **Family Income of the Respondents**
A - **Age of the Respondents**
G - **Gender of the Respondents**
E - **Level of Education of the Respondents**
T - **Distance to Health Centre**
$ß_0$ = intercept, $ß_1$, $ß_2$, $ß_3$, $ß_4$, $ß_5$, $ß_6$ & $ß_7$ = slope coefficient, e = well behaved stochastic term

4. Empirical Analysis and Interpretation

4.1 Descriptive Analysis of Variables

Table 1: Socio-Economic Characteristics of the Respondents and the Demand for Healthcare Service

		Do you attend medical health centres whenever you are sick?	Total
		Yes	
Age	Below 20 years	15 (7.5%)	15 (7.5%)
	21 – 30 years	80 (40.0%)	80 (40.0%)
	31 – 40 years	71(35.5%)	71 (35.5%)
	41 years and above	34 (17.0%)	34 (17.0%)
Sex	Male	84 (42.0%)	84 (42.0%)
	Female	116 (58.0%)	116 (58.0%)
Marital status	Single	75 (37.5%)	75 (37.5%)
	Married	103 (51.5%)	103 (51.5%)
	Divorced	9 (4.5%)	9 (4.5%)
	Widowed	5 (2.5%)	5 (2.5%)
	Single parent	8 (4.0%)	8 (4.0%)
Level of education	No Education	4 (2.0%)	4 (2.0%)
	Primary Education	3 (1.5%)	3 (1.5%)
	Secondary Education	38 (19.0%)	38 (19.0%)
	Tertiary Education (NCE/OND, HND, BSC)	48 (24.0%)	48 (24.0%)
	Masters	95 (47.5%)	95 (47.5%)
	ICAN, ANAN and other professional certificates	12 (6%)	12 (6%)
Religion	Christianity	128 (64.0%)	128 (64.0%)
	Islamic	70 (35.0%)	70 (35.0%)
	Traditionalist	2 (1.0%)	2 (1.0%)
Occupation	Student	31 (15.5%)	31 (15.5%)
	Business	73 (36.5%)	73 (36.5%)
	Civil Servant	55 (27.5%)	55 (27.5%)
	Private Service	38 (19.0%)	38 (19.0%)
	Farmer	2 (1.0%)	2 (1.0%)
	Not working	1 (0.5%)	1 (0.5%)
Average monthly income	Less than N10,000	25 (12.5%)	25 (12.5%)
	N10,001 - N50,000	95 (47.5%)	95 (47.5%)
	N50,001 - N100,000	47 (23.5%)	47 (23.5%)
	Above N100,000	33 (16.5%)	33 (16.5%)
Tribe	Hausa	11 (5.5%)	11 (5.5%)
	Igbo	42 (21.0%)	42 (21.0%)
	Yoruba	147 (73.5%)	147 (73.5%)

Source: Field Survey, 2021

Table 1 above shows the crosstab of the socio-economic characteristics of the respondents in relation with the demand for health care service. The result revealed that 42% of the respondent that demanded for health care service were male while 58% of the respondents that demanded for health care service were female. About 35.5% of respondents between the age of 20 and 30 years demanded for health care service, 40% of the respondents between the age of 31 and 40 years demanded for health care service, 17% of respondents between the age of 41 and 40 demanded for health care service while only 7.5% of the respondents above 50 years demanded for health care service.

On the marital status of the respondents that consumes rice, 37.5% of the single respondents demanded for health care service, 51.5% of the married respondents demanded for health care service, 4.5% of the divorced respondents demanded for health care service, and 2.5% of the widowed respondents demanded for health care service while 4% of the respondents that demanded for health care service were single parents.

Regarding the level of education of the respondents who requested health care services, 2% of the respondents who demanded health care services had no education, 1.5% of the respondents who demanded services had a primary education, 19% of the respondents who demanded for health care services had a secondary education, 24% of the respondents who demanded for health services had a tertiary education, and 47.5% of the respondents who demanded for health services had a higher education.

Regarding the respondents' religion, 35% of them are Muslims, 34% of them are Christians, and 1% of them are traditionalists. Of those who demanded health care services, the majority (64%) of respondents are Christians. Additionally, 15.5% of respondents who demanded health care services were students, 36.5% were business owners, 27.5% were government employees, 19% were owners of private businesses, and 1% are farmers.

On the average monthly income of the respondents that demanded for health care service, 12.5% of the respondents that received less than 10,000 naira demanded for health care service, 47.5% of the respondents that received between 10,001 and 50,000 consumer rice, 23.5% of the respondents that received between 50,001 and 100,000 naira demanded for health care service while 16.5% of the respondents that received above 100,000 naira demanded for health care service.

Relating to the family type of the respondents that demanded for health care service, 85.5% of the respondents that demanded for health care service have a nuclear family while 14.5% of the respondents that demanded for health care service have a polygamous family. Also, 5.5% of the respondents with one person in their household demanded for health care service, 14% of the respondents with 2 persons in their household demanded for health care service, 28.5% of the respondents with 3 persons in their household demanded for health care service while 52% of the respondents with more than 3 persons in their household demanded for health care service.

Relating to the tribe of the respondents that demanded for health care service, 5.5% of the respondents that demanded for health care service are Hausa, 21% of the respondents that demanded for health care service are Igbo while 73.5% of the respondents that demanded for health care service are Yoruba.

Table 2: Healthcare Accessibility

Questions	Strongly Agree	Agree	Disagree	Strongly Disagree
I have not been able to visit the health center regularly due to high medical cost	87(43.5%)	52(21%)	34(17%)	27(13.5%)
Inability to obtain convenient appointment times is a barrier to health center accessibility.	44(22%)	49(24.5%)	62(31%)	45(22.5%)
Lengthy waiting room times reduce the likelihood of successfully making and keeping healthcare appointment	50(25%)	43(21.5%)	59(29.5%)	48(24%)
I travel greater distances to access different points of the health care delivery system.	33(16.5%)	45(22.5%)	64(32%)	58(29%)
Health care facilities in my area are small and often provide limited services.	62(31%)	53(26.5%)	33(31.5%)	52(26%)

Source: Field Survey, 2021

The respondents' access to healthcare is displayed in Table 2 above. 13.5% of respondents strongly disagreed that they were unable to visit the health center on a regular basis due to high medical costs, while 17% of respondents disagreed they were unable to visit the health center on a regular basis due to high medical costs. Of the respondents, 43.5% strongly agreed that they were unable to visit the health center on a regular basis due to high medical costs.

About 22% of the respondents strongly agreed that the inability to obtain convenient appointment times is a barrier to health center accessibility, 24.5% of the respondents agreed that the inability to obtain convenient appointment times is a barrier to health center accessibility, 31% of the respondents disagreed that the inability to obtain convenient appointment times is a barrier to health center accessibility while 22.5% of the respondents strongly agreed that the inability to obtain convenient appointment times is a barrier to health center accessibility.

About 25 respondents strongly agreed that long wait times make it more difficult to schedule and keep a medical appointment; 21.5% agreed; 29.5% disagreed; and 24% did not agree with

this statement. Approximately 16.5% of respondents strongly agreed that they travel farther to access various points of the healthcare delivery system, while 22.5% agreed. However, 32% of respondents disagreed that they travel farther to access various points of the healthcare delivery system, and 29% of respondents strongly disagreed that they do.

About 31% of respondents strongly agreed that the healthcare facilities in their area are small and frequently offer limited services; 26% of respondents strongly disagreed; 26.5% of respondents agreed; 31.5% of respondents disagreed; and 26% of respondents disagreed but did not strongly disagree that the healthcare facilities in their area are small and frequently offer limited services.

Regression Analysis of the Determinants of Healthcare Services

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.808[a]	.558	.542	.65159	1.745

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12.265	13	.943	2.222	.015[a]
	Residual	35.240	83	.425		
	Total	47.505	96			

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.730	.418		1.747	.084
P1	-.168	.081	-.231	-2.080	.041
P2	.118	.186	.067	2.634	.028
Y	.097	.203	.055	.480	.632
A	.037	.166	.026	.222	.825
G	-.119	.172	-.082	-.689	.492
E	.192	.109	.249	1.761	.082
T	-.208	.099	-.255	-2.114	.038

The regression output above shows that price of healthcare service, the cost of drug, educational qualification and the distance to health centres are statistically significant in determining the demand for health care services among the people in Akinyele local government area while income, age and gender are statistically insignificant. As price of healthcare services, cost of drugs and distance to health centres are significant at 5% level of significance, education qualification is significant at 10% level of significance.

The correlation between the variables reveals a positive relationship between the demand for healthcare services and the cost of pharmaceuticals, income, age, and educational level. This means that the demand for healthcare services will rise by 0.18%, 0.09%, 0.03%, and 0.19%, respectively, for each percentage increase in the fact that the healthcare facilities in their area are tiny and frequently offer limited services. Additionally, because the demand for healthcare services is inversely correlated with the cost of healthcare, gender, and distance, the demand for healthcare services will decrease by 0.16%, 0.11%, and 0.20%, respectively, for each percentage rise in each of the variables.

This result is consistent with studies by Hanson, Yip, and Hsiao (2004) as well as Ali and Noman (2013), which demonstrate a negative relationship between the cost of healthcare and demand [9,10]. The patient receives the most comprehensive medical care possible thanks to a decrease in the cost of healthcare and unequal consulting fees charged by private providers. The results of Ali and Noman's (2013) study show a favorable relationship between income and health care demand and education. Therefore, using a health awareness campaign as a stand-in for education may lead to an increase in demand for health services.

5. Discussion of Finding

The study looked into the factors that influence rural families in the Akinyele Local Government's need for health care services. Two hundred (200) questionnaires were employed to collect certain important and pertinent data. Regression analysis, percentages, and frequency distribution statistics are some of the techniques employed. This frequency and the percentage allow us to understand how the respondents feel about the queries posed and answers provided. The regression analysis was utilized to determine the variables' sign and size as well as their significance.

The regression analysis shows that price of healthcare service, the cost of drug, educational qualification and the distance to health centres are statistically significant in determining the demand for health care services among the people in Akinyele local government area while income, age and gender are statistically insignificant. As price of healthcare services, cost of

drugs and distance to health centres are significant at 5% level of significance, education qualification is significant at 10% level of significance.

5.1 Conclusions

A basic human need is for health. The level of population health and how equally access to healthcare is distributed among social groups can serve as valid indicators of a society's level of progress. The positions of this study are that healthcare service, the cost of drug, educational qualification and the distance to health centres are great determinants of healthcare demand in Akinyele local government area.

Recommendations

The following recommendations are made based on the study's findings: 1

• The government should make critical medications and healthcare services available for free or at no cost to the public at public health facilities, with a monitoring team to assure efficient implementation.

• Health facilities should be placed closer to the populace, especially in rural regions, with little regard for political or class factors that can hurt the underprivileged masses.

• The government should offer employment possibilities so that people can get money to take care of their health by making proper use of the local medical facilities.

Data Availability

The corresponding author can provide the datasets that were gathered and/or analyzed during the current investigation upon request. The accompanying authors are in complete control of the data used in the study and are accountable for their accuracy and integrity.

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