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Cost Effectiveness and Demand for Medical Services among Rural Dwellers in Ekiti State, Nigeria *(Pp. 306-321)*

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Abstract
With daily improvement in science and technology, the demand for modern medical services is becoming increasing. This is because modern medical services provide answers to some medical problems which could not be handled by traditional or other forms of medicine. Regrettably, these medical services receive low patronage as a result of high medical costs. The study examines cost effectiveness of demand for medical services in Ekiti State. It employs data from both primary and secondary sources and use cognitive consumer behaviour approach as basis for its theoretical underpinning. Results from the study show though, most of the medical facilities were available in the state but the cost of patronizing them was high and the patrons encountered problems in the course of patronage. The study suggests subsidization in the cost of drugs and possibly, makes health free so as to allow better patronage. The study is of benefit to policy makers and researchers.

Key words: Cost effectiveness, demand, medical services, conceptualization

Introduction

Cost, according to Oxford Advanced Learner's Dictionary (2006) is defined as the amount of money that one needs in order to buy, make or do

something. It goes further by defining cost as the amount of money that needs to be spent on a business. It includes efforts in order to do or achieve something. On the other hand, demand for medical services simply means, the varying amount of goods and services sought by the consumer, at varying prices, given constant income and other factors such as transport cost and waiting, income of consumer, access to health care in terms of availability of health resources e.g. personnel, facilities, equipment and supplies. Demand for medical services in general could best be described as perfectly inelastic

Although, health status is a strong component in determining the demand for medical services, the fact remains that the demand for medical services increases with income (Aregbeyen, 1987). An improvement in health care of the populace should be one of the priorities of a good government. This is because good health is basic to human welfare and fundamental objectives of socio and economic development. Realizing this fact, Idris (2009), Lagos State Commissioner for Health, reiterated government decision to provide its citizens qualitative health care so as to attain excellence in health service delivery by applying best practices at all levels of care. He opined that government mission is to deliver qualitative, affordable and equitable health care services to the citizenry through appropriate technology through highly motivated staff.

While commenting on government policies on health care delivery at all levels, one needs to point out the health situation in most of the rural areas of Nigeria (Ekiti State inclusive) which habour majority of the population. Rural Nigeria, unfortunately, still remains, till date the most neglected, and its people, the most deprived with respect to the provision of modern health care services. In addition, they lack other basic infrastructural necessities that are essential to the maintenance and promotion of good health. More so, as a majority of the nation's population who produce the nation's food needs including valuable export crops, reside in this infrastructurally underserved area. Even, the few area where medical facilities exist, such facilities are often short-staffed, poorly maintained and are often inadequately supplied with drugs.

It is probably because of most of these reasons that the rural areas are subjected to high incidence of morbidity and mortality resulting from the prevalence of preventable parasitic and infectious diseases (Aregbeyen, 1992). Even, one thing is for the facilities (medical) to be provided in these rural areas but, as a result of how income of the rural inhabitants coupled

with the prevailing harsh economic situation, the populace find it difficult to patronize the medical facilities available in their areas and consequently, meet their health needs through alternative options like the traditional healer, itinerant drug sellers and local remedies. This idea of self medication could be inimical to the realization of health for all in the year 2020.

Based on the fore going, this study therefore, considered necessary to assess the cost implication and demand for medical services among the rural dwellers in Ekiti study. To achieve this aim, the following objectives shall be examined:

- To assess the medical services available in the area;
- to examine the cost of treatment in the study area;
- to assess the cost of transport among the rural inhabitants, and
- to examine major problems confronting the patrons of rural medical services in the area.

Theoretical Background and Literature Review

In economic terms, cost curve shows the minimum cost of producing various levels of output. Both explicit and implicit costs are included. Explicitly cost refers to the actual expenditure of the firm to purchase or hire the inputs it needs while implicit cost refers to the value of the inputs owned by the firm and used by the firm in its own production process.

In health economics, costs incurred in the course of patronage of medical service could be described as social cost (Omotoso 2007). This could be explicit and implicit. Explicit cost refers to such costs on drugs, surgery, diagnostic, consultancy, transport. They are actual monetary cost while implicit costs refer to such costs that could not be qualified in monetary aspect but borne by such patrons of medical services. They include psychological cost; pain borne, time consume, mental torture and physiological costs.

In geographic terms, cognitive consumer behaviour approach of carter (1981) could be applied as ones of the basis of this research work. The discrepancy between action as predicted by central place theory and human behaviour in the real situation provides the basis for the concept of cognitive consumer behaviour. The cognitive behavioural approach to consumer behaviour is a synthetic framework starting with the individual as the basic unit of analysis (Omole, 2002). The individuals behaviour according to Carter (1981) is

viewed as a function of the environmental situation and the decision making process with respect to the environment.

Unlike the deterministic locational theory framework that makes a set of assumptions that fashion out the processes of human decision making, the cognitive behavioural approach focuses upon the nature of decision making process and the parameters which determine its outcome (Downs, 1970). Downs (1970) identified four aspects of cognitive consumer behaviour approach. These are (1) Motivation, goals and altitudes (2) Decision-making and preference process (3) Perception (4) Search procedures and learning processes.

Motivation, Goals and Attitudes: Whatever motivates a consumer of service is paramount because it will determine the consequent attitudes and goals. For example a consumer that seeks to minimize costs will be ready to spend more time looking around for the cheapest source of goods or services, after all, the cheapest might not be available at the nearest distance, another consumer might look at patronage as a basis for socializing and choose the friendliest service provider for the purchase of goods and services.

Decision – Making and Preference processes: Downs (1970) was of the opinion that the motive and attitudes of the consumer have to be translated into action and this is done via a decision–making process in which various lacking needs are placed against each other. Therefore, each consumer will have a preference structure deceived from basic attitudes and this can be represented by a series of cognitive categories such as cost (Cheap or dear), distance near or far); variety of services (quality services or poor services) and a host of other.

Perception: Perception deals with cognitive mapping (Olayiwola, 1990). Perception involves an assessment of services or facilities based on standard developed in the mind of the assessor. Man has different powers of perception and this do not doubt influence consumer behaviour. The preference of structure of an individual is a function of his perception of the available services or facilities. This depends on other factors such as personal experience, educational background and up-bringing among others.

Search procedures and learning process: The tenet of the argument under the search procedures and learning process is that no individual would have perfect knowledge of an area which to base decisions until when such in individual has an accumulation of knowledge and information about the area

and region he lives. This is rather a continuous process of learning, information seeking and comparative analysis of services for instance, relating it to medical services, information on the successful treatment of medical services would be relevant.

During the search or learning process, the searcher finds out about (medical service), which is most in accord with his preference. The problem is that such processes will culminate into habit which become out of phase with changing reality, and until it is completed or rigidified into habit, the actual behaviour of the individual may not be a confirmation of the preference held.

Downs (1970) cognitive consumer behaviour approaches serve as good guide in the evaluation of this study On literature review, many studies on the demand for health services had been carried out, on such studies, such major determinants include the health needs of the population under study, their income, price of obtaining health care including transportation cost and waiting time, income of consumers, access to care in turns of availability of health resources e.g. personnel, facilities, equipment and supplies.

Furthermore, demographic factors such as sex, household size, structure and so on are considered. Of all these variables, studies on the effect of price on demand, have received the most attention in the literature. (Aregbeyen, 1992). This attention may be attributed to the fact that demand in health economics simply means the varying amount of goods or services sought by the consumer at varying, prices given constant income and other factors listed above.

Although, health status is a strong component in determining the demand for medical services, the fact remains that the demand for medical services increases with income (William, et al, 1987). Nevertheless, there can only be demand for what is available. Unfortunately, very few studies of household demand for primary health care services have been undertaken till date, especially in Nigeria (Aregbeyen, 1997).

Results from demand studies in Cote d'Ivore and in Kenya by Dor. et. al. (1987) have shown that user fees are high enough in a bid to recover the cost of providing health care services, patients are bound to be strongly discouraged from seeking care. Another familiar study carried out in Kenya by Nwaibu (1989) strongly supported the above assertion. Related studies in Switzerland by Yodder (1989), and in Ghana by Waddington and Enyimayew (1989), indicated that the demand for modern health care

services declined after user fees were introduced in government health facilities.

However, contrary to expectation especially as it relates to Africa , a study on health care demand in the Bicol Region of Philipines (Akin, et al, 1986), favoured the charge of user for PHC services as well as tertiary care services. This study also found that user fees will not have significant effect on utilization of modern medical care services since, the patients in this region of study were highly insensitive to the prices of medical care.

Another dimension to the determination of demand for health care services is hinted on the consumer's perception of his illness and his ability to afford a visit (Aregbeyen, 1997). This also is dependent on household decision making process according to the type and stage of illness. Furthermore, as to the decision on what type of care to seek (modern, traditional or others), De Jong (1989), found that demand for modern health care services in rural areas in Africa is believed to be motivated by the growing belief that traditional medicine can treat only a limited number of illness. But he quickly added that patients patronize modern health care facilities only if the services provided there are of good quality.

From the above exposition, different factors apart from prices effect demand for modern health services particularly in the rural areas of developing countries. This depends on the level of government investment in health especially, with regards to increasing accessibility to modern health care, epidemiology and equity considerations. In summary, the following factors and realities must be considered when designing a demand model for modern health care in the rural areas:

- Health needs of the people – mortality pattern, age and sex, as well as environment factors.
- Accessibility to basic needs – nutrition, education, safe water, PHC, shelter, occupation, sanitation, income, employment, and so on, all which contribute positively to health and well being.
- The rural dwellers have the opinion to apply self-treatment or seek professional care depending on type of illness.
- In seeking professional care, the rural dwellers has, the option to use any of the following health care practioners: trade-medical

practitioners public or private modern health care facility, faith healer or any other health care practioner.

- The choice of health care provider to use depends on a number of household constraints such as income, family size, easy access to care proximity to health facility, waiting time at maternity centre, transportation, availability of drugs, price, cultural barriers etc.

Factors affecting health care services demand are expressed in Figure 1.

- Modern Health Care Services
- Demand in Rural Communities
- Health Needs
- Modern Health Care Facilities
- Other Health Providers
- Price
- Income
- Other Factors such as Education, Socio Economic Status, cultural, etc.

Above all, demand for medical services could be described as perfectly inelastic. This is because it is a thing of necessity just like a demand for salt though, when it comes to the stage of making choice in the course of patronage it could be a competitive one. (Omotoso, 2007)

Participants and Procedures

The study area is Ekiti State situated in the South/Western part of Nigeria and carved from the old Ondo State in 1996 with twelve local government areas that made up of the Ekiti Zone of the old Ondo State. However, additional four local governments were carved out of the old ones and today, the state is made up of sixteen local government areas and Ado-Ekiti is the State capital (Ekiti Government, 2004). The research work was carried out in the rural areas of Ekiti State and data were collected from the sampled areas for both quantitative and qualitative analysis. Ekiti State consists of three Senatorial Districts namely: Ekiti North, Central and South Senatorial Districts. Six rural communities were purposively selected for the study and the six rural communities were spatially selected in the three Senatorial Districts of Ekiti State. The six rural communities include: Awo and Ikoro in the Central,

Ijesa-Isu and Orin in the North while Ogotun and Ogbese were selected in the South.

Data for the study were collected from both primary and secondary sources. Two principal actors were involved in the collection of data. These are the medical consumers and medical operators. A double random sampling include: a stratified sampling which entailed a hypothetical division of the community into zones. The zones are: core, intermediate and periphery.

In a community where it was difficult to identify the zones, respondents were drawn from the existing streets and quarters within such rural settlements. In most of the rural communities, existing transport networks were used to demarcate the streets and quarters. The respondents to the medical consumers' questionnaire were majorly the householeads or elderly persons met at home and such questions relating to medical services available in their areas; cost of treatment, cost of transport and problems encountered in the course of patronizing the medical services were asked while the sampling frame was upon the residential building. 1500 copies of questionnaire were distributed to the medical patrons while 1257 copies questionnaire were retrieved representing 83.8% and this was analysed. In selection of medical operators, this involved both the private and public medical establishments of different ranks; tables, simple percentages and Pearson's product moment correlation techniques were used to analyse data.

Results and Discussion

Four major objectives were examined in the study. The first one relates to the medical services available in the area. Results from the study show that three major hierarchies of medical facilities were available in the area. These are the tertiary; secondary and primary medical services. In all, there are were two tertiary medical in Ekiti State namely: University Teaching Hospital located in Ado-Ekiti and Federal Medical Centre located in Ido-Ekiti, Forty-Eight (48) secondary medical centres include the specialist Hospital, General Hospitals and comprehensive health centres. Table 1 showed the hierarchies of medical facilities in Ekiti State . There were 252 primary health care institutions; and 95 registered private hospitals in the state. These medical facilities in the area provide consultancy; diagnostic. Pharmaceutical, ante and post natal services surgical, family planning and general consulting services to the inhabitants (see table 1)

On the cost of treatment in the area, such costs were assumed to include transport cost, cost of drugs, bedding, diagnostic and others medical charges.

In this study, 131 (10.4%) claimed to have spent below N500 per trip on medical treatment; 134 (10.7%) spent between N501 – N1,00 95 (7.6%) spent between N1000 = N1,500, 68 (5.4%) spent between N1501 – N2,000 while 185 (14.7%) on medical treatment per trip. (See table 2).

Further hypothesis was carried to find out whether the cost of treatment does not determine the volume of patronage in the area. Pearson's product moment correlation technique was applied to the table 2 and at 0.05% significant level, the result of the correlation analysis in the calculation shows that value of r-0.86 and when t-test was conducted, the t-value was 1860. This implies that r-value was insignificant; therefore, the null hypothesis was rejected while the alternate hypothesis that says cost of treatment determines the volume of patronage was accepted.

On the cost of transport in the area, 617 (49%) of the respondents claimed to be spending below N100 as transport cost per trip; 493 (39.2%) spent between N101 – N200 per trip, 83 (6.7%) between N301 – N400 per trip and 30 (2.3%) spent above N400 per trip (see table 3) Hypothesis tested to determine that accessibility to the medical facilities in Ekiti State does not affect its patronage shows that transport cost plays a prominent role. Transport cost was used as one of the determinants of accessibility. Pearson's product moment correlation technique was applied. Results show at 0.05% significant level, r-value was – 0.9176 and the t-test was 1.860, r-value was not statistically significant, however, the null hypothesis was rejected and the alternate hypothesis was accepted.

On problems encountered by the patrons of medical services in the rural areas of Ekiti State, the major problems identified were; insufficient and high cost of drugs, 527 (41.9%) incompetent and inadequate personnel 285 (22.7%), lack of money, 231 (18.3%), transportation problem, 186 (8.4%) and no quick attention, 108 (8.6%). (See table 4). On a general note, insufficient and high cost of drugs ranked highest of all the problems encountered by the rural dwellers in the state.

As a result of insufficient and high cost of drugs in the area, this had a negative impact on the people as they meet their health needs through alternative options like the traditional healer, itinerant drug sellers and local remedies.

Conclusion

Health is wealth. An improvement in health can directly affect income, there will be an increase in the number of hours worked coupled with the fact that no economy could properly regarded as sound when the generality of the people are poor in health, cost of treatment in the study are is still high, patients are still paying above N2,500 per treatment, most of the patrons find it difficult to afford health care service hence, they meet their health needs through alternative options like the traditional healers, itinerant drug sellers, local remedies and selff medication. This is quite unfortunate.

To achieve health for all by the year 2020, it is therefore suggested that health, be made affordable and even free. Moreover, efforts made by government to invest in the economy, this will provide employment opportunities for people and there should be improvement in education and training and re-training of medical personnel's while provision of better and modern medical services be vigorously pursued and above all, a conducive environment be created.

Table 1: Medical Facilities in Ekiti State

Ado-Ekiti	Ownership Type	Tertiary	Secondary	Primary	Total
Ado-Ekiti	Public	1	0	18	19
	Private	0	9	19	28
	Total	1	9	37	47
Efon	Public	0	1	12	13
	Private	0	1	3	4
	Total	0	2	15	17
Ekiti East	Public	0	1	8	9
	Private	0	1	9	10
	Total	0	2	17	19
Ekiti South West	Public	0	1	12	13
	Private	0	2	14	16
	Total	0	3	26	29
Ekiti West	Public	0	2	19	21
	Private	0	2	1	3
	Total	0	4	20	24
Emure	Public	0	0	9	10
	Private	0	1	3	3
	Total	0	1	12	13
Gbonyin	Public	0	2	10	12
	Private	0	0	8	8

	Total	2	2	18	20
Ido-Osi	Public	1	1	12	11
	Private	0	2	7	8
	Total	1	2	19	22
Ijero	Public	0	1	15	20
	Private	0	0	6	6
	Total	0	1	25	26
Ikere	Public	0	1	6	7
	Private	0	5	9	14
	Total	0	6	15	21
Ikole	Public	0	2	12	14
	Private	0	2	6	8
	Total	0	4	18	22
Ilejemeje	Public	0	1	9	10
	Private	0	0	0	0
	Total	0	1	9	10
Irepodun/Ifelodun	Public	0	1	12	13
	Private	0	3	14	17
	Total	0	4	26	30
Ise/Orun	Public	0	1	11	12
	Private	0	0	5	5
	Total	0	1	16	17
Moba	Public	0	1	12	13
	Private	0	1	5	6
	Total	0	2	17	19
Oye	Public	0	3	16	19
	Private	0	1	5	6
	Total	0	4	21	25
TOTAL	Public	0	21	197	219
	Private	1	28	114	142
	Total	1	49	311	361

Source: Author's Field Survey 2006

Table 2 Cost of Treatment per Trip

	Ijesa Isu		Orin		Ogotun		Ogbese		Ikoro		Awo		Total	
	Freq	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**
Below N500	8	3.3	21	12.0	10	4.3	34	22.4	47	16.8	11	6.2	131	10.4
Between N501-N1000	38	15.6	13	7.5	4	1.7	28	18.4	21	7.5	30	17.1	134	10.7
Between N501-N600	24	9.8	1	0.6	6	2.6	7	4.6	19	6.8	11	6.3	68	5.4
Between N600 – N2500	43	17.6	14	8.0	56	24.1	29	19.1	20	7.1	23	13.1	186	14.7
Above N2500	112	45.9	113	64.9	130	41	47	27.0	159	56.8	89	50.9	644	512
Total	**244**	**100**	**174**	**100**	**232**	**100**	**152**	**100**	**280**	**100**	**175**	**100**	**1257**	**100**

Source: (Author's Field Survey, 2006)

Table 3: Patrons Transport Cost Per Medical Treatment Trip

	Ijesa Isu		Orin		Ogotun		Ogbese		Ikoro		Awo		Total	
	Freq	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**
Below N100	146	59.8	60	34.5	120	51.7	73	48.1	185	65.7	33	18.9	617	49.0
N101-N200	74	30.3	95	54.6	80	34.5	60	39.5	79	28.2	105	60.0	493	39.2
N201-N300	17	7.0	8	4.6	15	6.5	10	6.6	15	5.4	18	10.3	83	6.7
N301-N400	5	2.0	6	3.4	10	4.3	6	3.9	00	00	7	4.0	34	2.7
Above N400	2	0.8	5	2.90	7	3.0	3	2.0	1	0.4	12	6.4	30	2.3
Total	244	100	174	100	232	100	152	100	280	100	175	100	1257	100

Source: (Author's Field Survey, 2006)

Table 4 Problems Encountered During Medical Treatment

	Ijesa Isu		Orin		Ogotun		Ogbese		Ikoro		Awo		Total	
	Freq	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**
Insufficient drugs	106	43.5	98	56.3	131	56.4	69	45.4	83	29.6	40	22.9	527	41.9
Incompetence/Personnel	33	13.5	15	8.6	25	10.8	18	11.8	107	38.2	87	49.7	285	22.7
Lack of money	41	16.8	30	17.2	55	23.7	37	24.3	44	15.7	24	13.7	231	18.9
Transport problem	30	12.3	31	17.8	8	3.4	17	11.2	13	4.6	7	4.0	106	8.4
No quick attention	34	13.9	00	00	13	5.6	11	7.2	33	11.8	17	9.7	108	8.6
Total	**244**	**100**	**174**	**100**	**232**	**100**	**152**	**100**	**280**	**100**	**175**	**100**	**1257**	**100**

Source: (Author's Field Survey, 2006)

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