Factors Influencing Households' Preferences for Traditional and Modern Health Care Services in Debre Birhan, Ethiopia

Goshu Mekonnen Andualem [+] and Abayomi Samuel Oyekale[++]

[+]Debre Birhan University, Department of Economics, Ethiopia
[++]Department of Agricultural Economics and Extension, North-West University Mafikeng Campus, Mmabatho 2735 South Africa. abayomi.oyekale@nwu.ac.za

Abstract: Ethiopia's health care system is unable to effectively cope with the significant health problems facing the country. This this investigates household's preferences modern and traditional health services. Data were collected from 600 households that were randomly selected for interview using well structured pre-tested questionnaire. The Multinomial Logit regression was used to analyze households' preferences. Result predicted that the higher the household size, the older the patient, the further the modern health care providers and the dearer the cost of treatment, the more attractive the traditional HCIs be.It was recommended that rather than discriminating against traditional healers, governments should endeavour to set up mechanisms for enhancing their efficiency.
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1. Introduction

For the development of any economy, availability of human, financial and natural capital in quantity and quality is very crucial. Among those capital assets, human capital is considered as a strong pillar for economic development. Therefore, existence of healthy human capital is an asset of inestimable value. That is why it is often said that health is wealth. In response to this, many countries have givenhigh priorities to health sector development (Dor and van der Gaag, 1988). However, it had been argued that policy makers should be worried about health condition of their citizens not because of its potential economic development impacts, but due its being a fundamental basic human right. As a result, provision of medical care service has become a top rating agenda of all governments.

However, Ethiopia's health care system is among the least developed in sub-Saharan Africa and is not, at present, able to effectively cope with the significant health problems facing the country. The government has chosen to strengthen primary health care as a strategic approach to address a major gap in the country's health care system. The main problem, however, is how to provide health care services to every society given the myriads of economic development challenges that the country faces. One of the major issues in expansion of health care facilities is ability to match the physical infrastructure with adequately trained health personnel. The low availability of health care professionals with modern medical training, together with lack of funds for medical services, leads to the preponderancy of less reliable traditional healers that use home-based therapies to heal common ailments. As a result, for many developing countries, traditional medicine has become the sole alternative treatment for all diseases.

The World Health Organization (WHO) defines traditional medicine as health practices, approaches, knowledge and beliefs incorporating plant, animal and mineral based medicines, spiritual therapies, manual techniques and exercises, applied individually or in combination to treat, diagnose and prevent illnesses and maintain well-being (WHO, 2001). It is known that many countries in African, Asia and Latin America use traditional medicine (TM) to meet some of their primary health care needs. In Africa, up to 80% of the population uses traditional medicine for primary health care (WHO, 2003). Traditional medicine, also known as complementary and alternative medicine, refers to the sum total of all knowledge and practices used in diagnosis, prevention and elimination of physical, mental or social imbalance and relying exclusively on practical experience and observations handed down from generation to generation (WHO, 2001).

The importance of traditional medicines for human being both now and in the past is enormous. In most cases, traditional medicines are used as "first aid or stop-gap measure" before the patient is referred to modern health facilities. But for a number of African countries traditional medicine is the only affordable and accessible health care. Traditional medical practitioners include bonesetters (wogesha in amharic),midwifery (yelmid awalajs in amharic), plant herbalists (medhanit awakis or kitel betashs) herbalists, as well as 'debtera', 'tenquay' (witch

doctors), and spiritual healers such as 'weqaby' and 'kalicha' (Papadopoulo and Gebrehiwot, 2002). Approaches that are used to diagnose, treat or prevent illness include spiritual therapies, charms containing a written scrip(kitab in Amharic), holy water (tsebel inAmharic), among others. In most cases, common health problems that can be tackled by traditional health practitioners ranges from ordinary headaches, diarrhea and vomiting to life-threatening diseases such as cancer and diseases associated with HIV&AIDS.

The use of traditional medicine (especially of medicinal plants) in Ethiopia dates back to the time of the Axumite kingdom (Fekadu, 2005).However, modern medicine came into the country during the last quarter of the nineteenth century with the arrival of missionary doctors, nurses, and midwives (Ofcansky and Berry ed., 1991). Although Ethiopia practiced traditional and modern health services long time ago, the sector is delivering poor services to the people and the society had been affected by different communicable infectious diseases and nutritional deficiencies. Shortage and high turnover of human resource and inadequacy of essential drugs and supplies had been adversely affecting the development of the sector. However, there has been encouraging improvements in the coverage and utilization of the health service since the last two decades. But relative to other developing countries only little success was achieved in coping with the acute and endemic diseases that debilitated large segments of the population. Like all other important sectors, the health sector has suffered from the chronic economic problems the country faced for decades. The number of modern health care institutions in Ethiopia are very few in number and the quality of health services suffers from poor infrastructure, lack of critical medical equipments, low number of knowledgeable healthcare human resource, and sporadic pharmaceutical supplies.

A study of the pharmaceutical drug use showed that 35% of the patients did not obtain the prescribed drugs due to lack of money (MOH, 2003). The cost of treatment in the private sector was too expensive than that of the government facilities. The high cost of medical care coupled with its limited coverage made the private health care (HCs) less attractive. However, most traditional medicines are delivered either free or with a relatively low cost, which contributes to the use of rural based healers for community primary health care need. The traditional medicine, once again, remained active participant in health service market of the country especially in rural areas. In spite of the significant role that Traditional HCs play in national health sector, the contribution of traditional HCs to the national economy is undervalued and not fully recognized.

Despite its existence and continued use over many countries, and its popularity and extensive use during the last decade, traditional medicine has not been officially recognized in most countries. Consequently, education, training and research in this area have not been accorded due attention and support. The quantity and quality as well as the safety and efficacy of data on traditional medicine are far from sufficient to meet the criteria needed to support its use worldwide.

Some pharmacists have argued that some of the traditional medicines and drugs used in traditional medicines are very dangerous for health and it has been affecting our people since long time ago. According to Rockos, “taenicides” are widely known to be toxic. For instance, over dosage of Hagenia abyssinica results in blindness and changes in central nervous system function (Rockos, 1969). Traditional healers may create delay in the treatment of communicable diseases such as TB if they fail to refer patients to modern health care services early. Moreover, a number of harmful practices have been traced to healers, including female genital mutilation, uvulectomy, and milk tooth extraction (Yimer, Bijune and Alene, 2005). Therefore, a study on the associated costs of traditional medicine is very necessary so as to reduce the negative cost related with false healers.

Generally, studies that have been conducted on households’ demand for HCs are very few and even those studies undertaken so far are solely concerned with urban population that accounts for only about 15% of the population. Consequently, only little is known about the health care demand of rural households, especially about how they make choice of health care providers (Traditional vs modern HCs) and valuation of the traditional HCs (the benefit and the cost related with THC). To the knowledge of the researchers, no studies were conducted on valuation of traditional health care services in Ethiopia. Hence this study is in response to this information gaps by taking North Showa as a particular study area.

The general objective of the study is to examine household’s preferences for traditional and modern health care services. The specific objectives are to identify the desirable quality of each HCs (as perceived by the patients); and analyze factors explaining households’ preferences for modern and traditional health care institutions; and make policy recommendations based on the key findings from the study.

2. Materials and Methods

Data and Sampling Procedures

The main objective of the survey was to collect information on household's preferences for health care services in North Shwa. The study used well structure pre-tested data that were collected from personal interviews of households. The simple random sampling method was used to select respondent from their houses. In all, 600 questionnaires were administered and used for this study.

Multinomial Logit Model

Due to the nature of the data, Multinomial Logit Model was considered to be the most appropriate. The dependent variable is the choice of specific HC service providers. The alternative health care providers (or the HCs to be chosen) are Government /Public, Private, and Traditional HCIs. The traditional institutions refer to all traditional treatments provided by traditional health practitioner. It also includes the use of herbs, holly men, and holy water (or tsebel in Amharic). The basic and important assumption here is that each individual patient seeks treatment and knows the available health institutions with their respective expected cost, waiting time and distance (Ii, 1996). The independent variables (X) include different attributes of both the individual and the health care providers.

The estimated equations can be presented as:

$Yi=\beta0+\beta1age+\beta2sex+\beta3Educ+\beta4\ Dist+\beta5mcost+\beta6wtime+\beta7psv+\beta8wlth+\beta9hhs+\beta10sfty$

Where, Yi is health care provide choice with Traditional = 0, Private = 1 and government =2.

Table 1: List and description of explanatory variables

Variable Name	Description
Age	A continuous variable for the age of the patient
Sex	A dummy variable for the sex of the patient (1= male; 0= female)
Edu (Education)	A continuous variable for the years of education
Dist (Distance)	A continuous variable for the distance of the institution chosen from the home of the patient
Mcost (Monetary cost)	A continuous variable for the total monetary cost that the patient pays for the treatment
Wtime (Waiting Time)	A continuous variable for the time that the patient stays at the health institution before getting treatment
Psv (Perceived severity of illness)	A dummy variable for the value that the patient attaches for the severity of their illness as they perceive it (1= for serious; 0= otherwise)
Wlth (Wealth)	A continuous variable for households' wealth index
Hhs (households size)	A continuous variable for the total number of the member of the household
Sf (safety)	A dummy variable for the value that the patient attaches for the safety of services delivered by medical institutions as they perceive it (1= excellent; 0= otherwise)

3. Results and Discussions

Demographic characteristics of the respondents

Table 2: Demographic characteristics of respondents

Demographic characteristics		Number	%	Mean	Min.	Max.
Sex of the household	Male	540	90.00	-	-	-
	Female	60	10.00	-	-	-
Age of the household heads		-		49	24	72
Marital status of the household head	Married	430	71.67	-	-	-
	Unmarried	160	26.67	-	-	-
Household size				4	1	15
HH monthly income				800	300	7000
Education level of household heads				6	0	17
Religion of the household heads	Christian	430	71.67		-	-
	Muslim	102	17.00		-	-
	Other	68	11.33		-	-

Source: Survey result, 2012

Table 2 shows that 90% of the respondents were males. This indicates that most of the household heads in rural areas are males. The table also depicts that the average educational status of the respondents is 6 years of schooling. Majority (71.67%) were married, while 71.67% were also Christians. Average

age of household heads is 49 years. The average household size is 4, although household with maximum number of household members has 15 persons. Average monthly income is Bir 800, while the maximum that was recorded is Bir 7000.

Traditional health care practitioners

Table 3 shows the patronage of the households with different types of traditional healers. The table indicates important information related to traditional health care services. As it is depicted in the above table, all types of traditional health care service practitioners do not have any recognition from government authority. This would have two implications. First, it might encourage illegal and false healers and affect patients adversely. Second, it encourages tax evasion practices and which may under estimate GDP of the country. The other important finding is the existence of high variations between the total amount of money collected and their expectation. This is a good indication for under valuation of traditional health sector.

Table 3: Traditional health practitioners' patronages, expected charges and government recorgnition

	Traditional health care givers					
	Bonesetter	Midwifery	Plant herbalists	Witch doctor	Spiritual healers	Others
Number of practitioner	13	14	8	3	31	31
Number of people treated	32	32	210	51	> 3000	200
Number of people cured	25	32		51	>2000	200
Number of people died	0	0	0	0	0	0
Recognition	No	No	3	No	No	No
Expected mean amount of birr	4000	10000	25000	--	0	50 000
Total birr collected	70	800	7000	--	0	5000

Source: Survey result, 2012

Preferred health care services by rural households

In developing countries, patients have three health care service alternatives. These are the traditional, private and modern health care services. In rural areas, traditional health care services are becoming an important alternative health care service provider. The distribution of different health care services as perceived by the respondents is presented in table 4.

Table 4: Distribution of health care services

Healthcare services	Distribution (%)
Traditional	40
Private	7
Government	53

Source: Survey result, 2012

Distribution of patients by their respective reasons for choosing a health institution

Traditional health care services and government (public) health care services together, constitute more than 90% of medical accessibility. The contribution of private sector is too small in rural areas as it is perceived by the respondents. This may be due to the fact that many private health institutions are always too expensive and unaffordable by the people.

The choices to different health care services depend on different factors. Some of the factors that make patients to choose a health care provider are provided in table 5. The table shows that traditional health care services are closest to people relative to others health care institutions. The result shows that average distance of patient's home to traditional, public and private health care services are 1.1km, 5km and 20 km respectively. Low waiting time is the main reason for patients to be attracted to private health care institutions, even if their high service charge discourages the large segment of the society. With respect to cost, traditional health care providers, where most of its services are provided at zero prices, attracts many patients. But the less safety medical treatment and the absence of recognition decreased its importance.

Table 5: Reasons for choosing different health care services

Reasons	Health care services		
	Public (%)	Private (%)	Traditional (%)
Proximity	25	8	66
Low waiting time	7.16	72	20
High quality	32.6	50	17
Low service charge	33.3	5	62
Flexible payment system	0	3	97
Safety	52	35	12
Recognition	100	100	0
Accessibility	17	5	78
High speed	2	57	41
Cure capacity	33	17	50

Source: Survey, 2012

Attitude towards traditional health care

All traditional health care services are not benefiting the society. Some traditional medicines are very dangerous for health. Therefore, such activities are condemned by the society even if some people are benefiting from their services. Table 6 shows the respondents attitude toward different traditional health care services.As it is shown in the above table, many respondents reported that Witch doctor and traditional midwifery are the two condemned health care service providers. On the other hand, two types of traditional health care services; Bonesetter and plant herbalists are the two important traditional health sectors which are supported by many respondents.

Table 6: respondent's attitude toward traditional health care services

Traditional health care services	Supported health care services	Condemned health care services
Bonesetter	504	96
Midwifery	60	540
Plant herbalists	440	160
Witch doctor	15	585
Spiritual healers	596	4

Source: Survey result, 2012

Econometric Results

The econometric model presented in this section attempts to make some analysis and make inferences based on the information obtained from the sampled respondents. These econometric methods are employed to determine factors affecting the preference of households to different health care services and to estimate mean WTP of the respondents.

Choice to health care services

As mentioned and specified in the methodology section of this paper, multinomial logit model was employed to analyze the determinants of relative demand for HCIs. There are two common approaches for interpreting regression results of such categorical models: the log-odds approach and the relative risk approach. Since the latter is only the natural exponent of the former, both approaches lead top the same conclusion and hence the choice of the approaches depends on the taste and preference of the researcher. In this study, the log-odds ratio will be used to interpret the results. The regression result of the model is given in Table 7. To make the output more convenient for the discussion, Traditional HCI was set as base outcome. Therefore, the result of each outcome will be interpreted in relative to the base outcome. At the end, the impact of each variables on intra modern HCIs is evaluated. Before going to the demand analysis of each HCI, it would be good to evaluate how significant the fitted model is. The model summary presented Table 7 shows that the null hypothesis of all regression coefficients are equal to zero can be rejected at 1 percent significance level. In the following sections, we will look at the demand of HCIs relative to one another.

Table 7: The log-odds for Private and Government HCIs relative to Traditional HCIsMultinomial Logistic Regression Results

Variables	Private HCI		Government HCI	
	coefficient	P>Z	coefficient	P>Z
Age	-0.084	0.000***	0.001	0.000***
Sex	-0.723	0.511	-0.003	0.212
Education	0.882	0.001***	0.458	0.000***
Distance	-0.007	0.006***	-0.56	0.000***
Medical cost	-0.064	0.000***	-0.056	0.000***
Waiting time	-0.003	0.001***	-0.987	0.006***
Perceived severity of illness	0.067	0.101	0.523	0.901
Wealth)	0.009	0.082*	0.023	0.000***
households size	-0.002	0.0081***	-0.128	0.600
Safety perception	0.005	0.231	0.036	0.050**
Constant	2.001	0.004	0.962	0.342

(Traditional HCI is the base outcome)

Note: *** = statistically significant at 1%, ** = statistically significant at 5%, *** = statistically significant at 10%.

Source: Survey result, 2012

Demand of Traditional HCIs relative to Private HCIs

In this framework, it can be seen from the regression result that age of the patient, sex of the patient, distance to the HCI, monetary cost of the service, household size and waiting time at the HCI are expected to reduce the multinomial odds of Private HCI relative to Traditional HCI. More specifically, if the patient's age increase by one unit

(year), the log of the ratio of the two probabilities, P(PHCI)/P(THCI), will be decreased by 0.084 unit while holding all other variables in the model constant. Put differently, holding all other variables in the model constant, the multinomial log-odds for Traditional HCI relative to privet HCI would be expected to increase by 0.084 units for a unit increase in age of the patient.

In the same way, we can see that the multinomial logit of educated patients relative to less educated patients is 0.882 units higher for the choice of Private HCI to Traditional HCI, given all other predictor variables in the model are held constant. Similarly, a unit increase in distance, monetary cost of treatment, a unit increase in the household size, sex of the patient and waiting time related to Private HCI would be expected to decrease the multinomial log-odds of Private HCIs by 0.007, 0.064, 0.002, 0.723 and 0.003 units, respectively, in favor of Traditional HCI. This implies that the further the Private HCI or the longer the waiting time or the higher the cost of treatment at Private HCIs or an increase in household size, the higher the preference to Traditional HCIs. Interestingly, the estimated coefficients of these four variables are statistically significant at 1 percent level. However, the other remaining variables such as education of the patient, perceived severity of illness, safety of the medical instrument and wealth of the household are expected to increase the multinomial odds for Private HCI relative to Traditional HCI. But the coefficients of all these variables are insignificant except that of education which is significant at 1 percent level.

Demand of Traditional HCIs relative to Government HCIs

The regression output for demand of Government HCI relative to Traditional HCIs is shown in columns 4 and 5 of Table 7. It showsthat the two demographic variables (household size and sex) are expected to reduce the multinomial log-odds of Government HCI in favor of Traditional HCI. This implies that the higher the household size, the more attractive the Traditional HCIs would be. Likewise, the female patients have higher likelihood of using Traditional HCIs. Furthermore, it can be seen from the table that, a unit increase in distance to Government HCI or waiting time at Government HCIs or monetary cost of treatment at Government HCIs would be expected to decrease its multinomial logit by 0.56, 0.056 and 0.987 units, respectively, in favor of Traditional HCI. More interestingly, the coefficients of all variables except sex of the patient and household size are significant at 1 percent level. On the other hand, all other variables such as age and education status of the patient, safety mode of medicine, perceived severity of illness and household wealth, however, are expected to increase the multinomial logits of Government HCI relative to Traditional HCI; i.e., the higher the value of these variables, the lower the preference to Traditional HCIs. Again, the coefficients of all these variables are significant at least at 5 percent significant level except perceived severity of illness

4. Conclusion and Recommendations

Improving the health status of the society is becoming the main policy agenda of many countries. Ethiopian government is implementing different macro and micro health policies. But the main constraint for the success of those policies is the lack of the integration between health care institutions and those policies. Those policies do not give due attention for traditional health care institutions. Therefore, the main objective of this study was to identify household's preference to different health care institutions and their WTP for the improvement of those heath care facilities.To investigate household's preference to public, private and traditional health care institutions the study used Multinomial logit model. The Multinomial Logit estimation result predicted that the older the patient gets, the more he/she will prefer Traditional HCI to both the modern HCIs; the dearer the cost of treatment at modern institutions, the higher the preference for Traditional health care services; the farther the modern health care providers, the more attractive the Traditional HCIs are; the wealthier the household, the more they prefer modern HCIs; and the higher the perceived severity of illness, the more preference for modern HCIs.

Based on the descriptive and econometrics analysis, the study recommends that traditional health care institution can work as side by side with modern health care services as an alternative health care institution. Any effort to suppress traditional heath care institutions may hide false healers. Therefore, government should encourage true healers by giving training so as to improve their quality service delivery. To prompt modern health care institutions increasing their accessibility, introducing flexible payment system such as health insurance and increasing the number of qualified medical people so as to decrease waiting time. Improving modern health care institutions may be difficult without the participation of the society. Therefore, government should collect the prescribed amount of money from the society so as to improve the quality and number of health care institutions.

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