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RESEARCH ARTICLE

FACTORS THAT INFLUENCE CHOICE OF HEALTHCARE PROVIDER OPTIONS FOR MALARIA IN MWEA IRRIGATION SCHEME

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ABSTRACT

This paper discusses the factors that influence the choice of health care provider for malaria illness based on a study of Mwea Irrigation Scheme. The descriptive cross-sectional study was conducted in four-phases that utilized both qualitative and quantitative techniques for data collection and analysis. Among the individuals utilizing government health facility during the health facility based exit interviews, 39.7% and 45.2% cited the cost of service and perceived quality respectively as the factors considered when choosing the facility. The study findings reported that non-medical factors are significant when choices to utilize formal health services are considered. Medical cost, perceived quality of care, distance and geographical location were all-important when choices to utilize health services delivery facilities were made, the study findings emphasize the importance of improving the quality of care in all health care options. It is also important to monitor quality control on the standards in all health facilities. The study recommended an urgent need to improve patient-provider interaction, and perceived quality of care to positively influence the decision-making dynamics.

INTRODUCTION

Malaria is a protozoan disease whose causative agents in humans are four species of Plasmodium, *P. falciparum, P. vivax, P. ovale* and *P. malarie* of these, *P. falciparum* accounts for the majority of the cases and is the most pathogenic. Malaria is transmitted through the bite of the female anopheles mosquito. If the infected mosquito bites a healthy person, the protozoa enter the victim's body, where they invade the red blood cells destroying them by lyses throughout the circulation. Symptoms appear within a week to several months after infection, but usually within 7 to 21 days (Fauci *et al.,* 1998). Symptoms usually vary in severity and include fever, headaches, aching joints, loss of appetite, and sometimes diarrhoea, nausea and vomiting. The mean duration between the onset of symptoms and development of severe complications is 1.8 days while the mean duration between onset and death is 1 day in children (Greenwoood *et al.,* 1987; Mwenesi *et al.,* 1995). Even relatively mild infections are physically debilitating to the patient. Delay in treatment can quickly lead to much more severe illness, including convulsions, breathing difficulties, unconsciousness and severe anaemia. In such serious cases, death can be rapid unless the patient receives immediate hospital treatment. Malaria is by far the world's most significant tropical parasitic disease and remains the top public health concern. The principle determinants of its epidemiology are the number of mosquitoes (density), the human-biting habits, and the longevity of the anopheles mosquito vectors (Fauci *et al.,* 1998). Increased risk of the disease is linked with numerous civil wars and social unrest in various African countries, combined with fluctuating ecological changes in land use linked to economic activities or agricultural policy that changes the use of land like road building, mining, logging, commercial tree ling, deforestation, creation of dams and irrigation projects. Other causes of its spread include fluctuating global meteorological changes, for example, El Nino, global warming which influence vector breeding sites. Malaria transmission in Mwea Irrigation Scheme, our study area is low but stable, with farming practices providing a favourable breeding site for mosquitoes leading to a parasite prevalence of less than 20% (Malaria Information System, 2000).

Malaria causes high morbidity and mortality leading to enormous cumulative human suffering and economic damage. Its impact is especially noticeable in rural areas, where malaria frequently strikes at the time of the year when there is greatest need for agricultural work (WHO, 1998). The toll it exerts must be viewed not only in terms of the physical, financial and emotional pain it inflicts on individual families but also by its macroeconomic impact (National Malaria Strategy, 2001-2010). At domestic level, malaria is directly responsible for massive losses of work time such that in Kenya, an estimated 170 million working days are lost each year as a result of the disease (National Malaria Strategy, 2001-2010). Disrupted education and the effects of repeated bouts of the disease also cause delayed child development. The health sector is heavily

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burdened by the cost of drugs and treatment since Malaria accounts for 30% of all outpatient illnesses, 19% of all hospital admissions of which 5.1% die from complications of the disease (National Malaria Strategy, 2001-2010). Efforts to control the disease have hitherto been sporadic, piecemeal and, thus have neither effectively reduced nor decelerated the overall disease rates. Indeed, both illness rates and epidemic outbreaks are on the increase (National Malaria Strategy, 2001-2010). In Kenya, attention to the control of Malaria through provision of early diagnosis and prompt treatment as the cornerstone has gained impetus over the last three decades. As a follow up, the current national malaria control strategy (NMS) 2001-2010 that Kenya has adopted as a response to international commitment to "Roll Back Malaria" places prompt gnosis and treatment as one of the key components. However, the strategy is still in its early implementation stage. Nevertheless, several studies have been undertaken indicating that a decision making process in identifying the appropriate kind of healthcare at the onset of malaria illness is important for early diagnosis and treatment. The decision making process includes any activity undertaken by individuals who perceive themselves to have a health problem or to be ill for the purpose of finding an appropriate remedy (Ward *et al.,* 1997). The behaviour is based on their explanatory model of their health condition that involves the recognition of symptoms which in turn are interpreted by individuals and significant others and proceed to address the problem appropriately (Fabrega, 1974).

It is governed by individual and/or household's behaviour, community norms and provider –related characteristics that include non-cognitive factors such as availability and cost of health services. The optimal treatment process has been noted as sequential, involving several stages as shown in Figure 1 (Baune and Kachur, 1999).

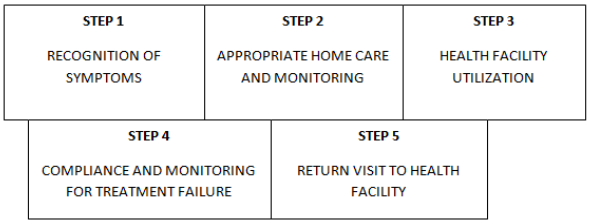

Figure 1.1: A Five-step community case management model for malaria illness as proposed by support for Analysis and Research in Africa (SARA) project under USAID
Data source: Baune and Kachur (1999)

The steps in the care-seeking model show that there are many points where breakdown in the process can occur, and thus there are many potential points of interventions. Actual practices rarely conform to optimal model. This study will describe the process in treatment seeking for the household's members in Mwea Irrigation Scheme, looking at any deviations from the model in order to provide insight into the key problems. This will guide in priority setting of intervention efforts to these key problems and minimize spending resources on the less important problems.

Concerns on Malaria Control and Treatment

The communities of Mwea Irrigation Scheme have been exposed to high risk for Malaria illness due to farming practices. The intervention activities for control calls for a need to understand first, the pattern of treatment seeking for a malarial illness and second, the individuals, households and health resource provider factors that influence the choice and utilization of the various health service options. With an estimated incidence of 300-500 million clinical cases of malaria every year and between 1.1 and 2.7 million deaths occurring due to the disease over the same period, malaria is one of the most important causes of morbidity and mortality globally. Its control remains one of the world's greatest public health challenges. In the absence of any 100% effective preventative intervention (Whether a vaccine, insecticide treated nets or vector control) the management of clinical malaria is the most vital and cost-effective action, to reduce the malaria burden globally (National Malaria Strategy, 2001-2010).

Early diagnosis and treatment at peripheral health services such as village health posts and dispensaries is the cornerstone of current malaria control strategies (WHO, 1993). Early treatment depends upon prompt recognition of symptoms and signs of malaria in the household. This is in most instances followed by a two-fold decision. The first decision is about whether or not to seek treatment for the razed malarial illness. If the outcome of the first decision is to seek care, the next decision involves the choice of treatment, since medical pluralism characterizes the health sector in Kenya including Mwea Irrigation Scheme, the study area. Delay in seeking care and obtaining diagnosis and treatment can allow for continued transmission and the greater probability of adverse sequel. The successful implementation and sustainability of any malaria control intervention requires an understanding of the individuals, household's characteristics and health resource provider factors that influence the choice and utilization of the various health service options.

Determinants of Health Seeking Behaviour

Two distinct categories of health seeking behaviour models have been distinguished which are the bases of any activity undertaken by an individual who perceive themselves to have a health problem or to be ill for the purpose of finding an appropriate remedy. They include Decision Theoretic Models and Models of Stages of Health Seeking Behaviour (Mukolwe, 1989). The decision Theoretic models analyze the several factors that influence the choice of a therapeutic system.

The system models examine the processes in health seeking that involves the recognition of symptoms which in turn are interpreted by individuals and significant others and proceed to address problem appropriately (Fabrega, 1974). The decision theoretic models can be further categorized as (Mukolwe, 1989):

- Those that utilize individual psychological variables to explain decisions e.g. the health-belief model (Igun, 1979).
- Those that utilize individual demographic characteristics and health delivery systems (Anderson *et al.,* 1963). Anderson postulated that the decision to seek medical help is a function of a set of variables namely; predisposing factors such as age, sex, marital status, household size, social status, education, race; enabling factors such as

family income, health insurance, religion, and perceived morbidity as intervening variables.

- Those, which explain health seeking behaviour decisions as a result of socio-psychological processes. In this model, the socio-economic variables of an individual have been reported to influence his health related behaviour.

Patient-based factors; provider-based factors; care-taker perceptions; social and demographic factors availability of funds; distance from the health care provider; social networks; and biological signs and symptoms, all have been studied as important variables in health seeking behaviour (Ryan, 1998) The determinant models predict about 20-30 % of peoples' illness behaviour and they provide some landing of people's illness behaviour (Ryan, 1998). Among the demographic aspects of the head of the households that have been explored in developing countries are: the level of education, occupation and income (Munguti, 1998). There is limited data with regard to differences in use of health sector with respect to age sex, and those that exist suggest considerable variation by locality. In Kenya, the source of Larials for children less than 10 years old was slightly more likely to be a health facility (20% versus 12%) than for those over 10 years respectively, and slightly less likely to be a shop (19% versus 28% respectively) (Kaseje *et al.,* 1987). In this study, the distinction between young and old was relatively broad. It may be that the response to symptoms in children less than 5 or even 2 years old is very different.

The ability to pay has been reported as the major determinant of the utilization of health services once symptoms are perceived as serious (Berkanovic *et al.,* 1973). The cultural and psychological factors once thought to account for much of the observed variations among social classes and ethnic groups in their utilization behaviour are irrelevant (Anderson *et al.,* 1963; Berkanovic *et al.,* 1973). In Swaziland, an increase of up to 400% in hospital user fees at the government hospital led to a drop in attendance of about 17% (Mechanic, 1963). A study in Kenya reveals a similar trend in health is utilization. After introducing cost sharing in government health facilities, attendance dropped by 50%, when these changes were suspended, patients moved to government facilities from the private health sector over the next 7-month (Ryan, 1998). An essential factor in determining whether a person seeking medical advice complies with treatment and maintains a relationship with the provider/health facility is patient satisfaction, satisfaction is a perceived need met by quality care.

Literature review on Quality of care from the patients/clients perspective suggests that it has several dimensions namely technical competence, interpersonal relations, accessibility and amenities (Brawely, 2000). Technical competence refers to the skills and actual performance of the health providers in regards to examinations, consultations and the other technical procedures. The interaction between the provider and the client comprises the category of interpersonal relations. In this case, effective listening and communication skills have a critical impact on customer satisfaction. Accessibility to the client means that the health care services are unrestricted by barriers such as geography, economy or language. Finally, amenities refer to the clients' perception of physical health care facility, as well as supplies and equipment within the facility (Brawely, 2000). Studies in developing countries have noted accessibility in particular to be major determinants of utilization of health facilities (Abyan and Osman, 1993; Godoy, 1988; National Malaria Strategy, 2001-2010). Accessibility has been described to have three dimensions namely: Congestion and time delay: cost of service: socio-psychological accessibility of a service (Lasker, 1981). This refers to the quality of communication between providers and consumers of the service. This may act as a barrier to the consumer. Distance affects the healthcare seeking behaviour in two ways -transportation cost and time allocated while seeking care. Cost therefore becomes a function of distance in a way that if the distance to be travelled is big, the cost of access will tend to be high also. In order to overcome this limitation to utilization, building of health facilities near olds and construction of all-weather roads are some of the approaches that have been used in Kenya.

The effect of distance was demonstrated in utilization of outpatient facility in Chogoria Hospital, Kenya (Airey, 1992). Road construction led to a 78% increase in outpatient hospital attendance. In a hospital-study on utilization of Presbyterian Church run hospitals, accessibility and the socio-cultural that guide the response to an illness episode emerged to determine the hospital utilization (Kimani, 1982). However, although distance to a health care service is still an important factor, more and more are ready to travel long distances to seek modern health care services than traditional health care services, although the choice depends on the time illness occurs (night or day) (Mukolwe, 1989). Religious affiliation is an important variable in illness behaviour. Religion may cause patients to seek medical intervention or restrict them from visiting hospitals. A study done among four groups of people Jews, Protestants, Catholics, and those who had no particular preference of any religion' more Jews (78%) than protestants (55%), Catholics (46%) and non-denominational (52%) ire higher social group to have a higher tendency to visit a physician (Mechanic, 1963). This was also noted in the lower social group (Mechanic, 1963). In Kenya, a religious sect called "Akorino" is known to urge their faithful to seek medical intervention through prayers since they advocate faith healing.

Studies reviewed provided rural -urban differences in access to health services, income, and prevalence. Data from Guinea in West Africa showed that use of the official health sector was much higher in urban than in rural areas (69% versus 33%) (Glik *et al.,* 1989). Some evidence exists that experience with malaria affects-seeking behaviour. In the Philippines, people were asked what advice they would give to neighbours with respect to treating malaria. People in the community with the malaria were less likely to recommend seeing a doctor than those in the lowest-malaria incidences (42% versus 69%). In addition those in the high-Malaria incidences more likely to only recommend taking drugs (48% versus 20%). People in the high-malaria incidence community who had malaria were even more likely to recommend taking drugs than those who had not had malaria (49% versus 32%) (Lariosa, 1987). In another Thai study, delays in seeking care from the official sector were higher in the high -prevalence areas than in the low-prevalence community (Kaewsonthi *et al.,* 1986).

A considerable number of studies noted that severity was related to use of official health sector unfortunately, few studies discussed how severity was measured. In a study done in Malawi, mothers whose children had cerebral malaria waited less in taking their children in for medical help than did mothers whose children had non-cerebral malaria (Molyneux *et al.,* 1989). The mothers reported to take their children to the hospital within 8 hours if they suspected that the children had cerebral malaria while mothers whose children had non-cerebral malaria waited for an average of 47 hours. Thus disease severity (or at least the perception of severity) affects the health seeking behaviour of patients or the decisions made by those who take care of the patients. This is an issue which has been examined in the present study i.e. what symptoms are considered severe by the community and how the clinical measures of severity (severe anaemia, jaundice, hypoglycaemia, convulsion, and renal impairment) agrees with perceived severity.

MATERIALS AND METHODS

This was a descriptive cross-sectional study conducted in four-phases, carried out in Mwea Irrigation Scheme to describe the treatment seeking behaviour for malaria. Mwea Division is located in Kirinyaga District, Central Province of Kenya. It lies about 100 kilometres north of Nairobi, Kenya, on the foothills of Mount Kenya at an altitude of approximately 1,160 meters above sea level and latitude 0-40 south. The first phase involved a community consultative workshop. During these visits/consultations, purposive sampling of the stakeholders in Mwea was done with the assistance of the office of Mwea Community Development Assistant. Participants were then divided randomly into five groups and requested to address each of the health and development issues under the following guidelines: causes; effects/impact and strategies. The second phase involved a participatory rural appraisal which comprised mapping (resource, social and access maps), transect, discussions (focus group discussions), key informant interviews, and gender analysis. Phase three involved a household's quantitative study component, where the sampling frame for all households was obtained using the social and resource maps developed using Participatory Rural Appraisal in phase II. The last phase involved the use of exit interviews administered to 98 individuals conveniently sampled on presenting with laboratory diagnosis of clinical malaria in the health facilities in the division. The data collected were analyzed using qualitative and quantitative techniques. Descriptive analyses were carried out to provide summary statistics on each variable. Bivariate analyses were carried out to compare relationships between variables. Content analysis and thematic analysis for qualitative data were also performed.

RESULTS

Reason for Choice of Healthcare Provider

The major reasons considered when choosing among the alternative healthcare options included the ability to pay for health services. Table 1 represents the reasons reported by the households that influenced utilization for first choices of care. To utilize government facilities, the ability to pay and distance to the health care options were reported to be more often considered. The majority of those whose first choice was a private facility considered the perceived quality of care at the facility more than its cost and its distance.

Factors Influencing the Choices and Utilization of Health Providers

Household Characteristics

Three household characteristics were related to utilization of the healthcare providers, namely size of the household, socio-economic status and monthly incomes of the households. The utilization of healthcare considered was only when single source of care occurred. Thus in instances of multiple sources of treatment, the data obtained were not utilized in analysis.

Socio-Economic Status

There was statistically significant relationship between utilization of services and socio-economic status (p=0.036). More than half of those in low and middle classes utilized government health providers. Relatively equal proportions of those in high socio-economic classes their choices across all the options available.

Household Size

The sizes of the household were categorised into three to allow the relationship to be observed by the use of chi-square test of significance. No statistically significant relationship was reported to utilization of the health care providers across the different household sizes.

Monthly Incomes

The monthly incomes of the households were shown to have no statistical relationship with utilization of health care providers for material illness. More households generating monthly incomes of less than Ksh 10,000 reported utilizing government facilities (60.3%). There was an increase in utilization of private facility as the monthly income of the household increase (from 11.8% to 26.7%).

Socio Demographic Characteristics of the Head of Household

The results of the demographic aspects of the head of households considered in the study, such as age, occupation, marital status, the level of education, sex of the head of household, and religion and their relationship with utilization of the healthcare providers are presented as follows.

Age of Household Head

The findings reported no statistically significant relationship (p=0.808) between the ages of the head of the household and the source of health care provider utilized.

Sex of Household Head

Data showed no statistically significant relationship (p=0.108) between utilization of the health care provider and the sex of the head of household. More male-headed households were found to utilize the private healthcare providers than the female-headed households. Majority of the female-headed households utilized the government facility.

Table 1: Reasons for Choices Made Among the Alternative Healthcare Options

1st choice of care	Reasons related ability to pay	Quality of service	Distance	Seriousness of illness	Others e.g recommended by someone	Total
Government	52(69.3%)	9(12%)	14 (18.7%)	-	-	75(100%)
Private	2 (12.5%)	9 (56.25%)	2(12.5%)	1(6.5%)	2(12.5%)	16 (100%)
Retail	11(64.7%)	2(11.8%)	2(11.8%)	-	2(11.8%)	17(100%)
Pharmacy	4 (50%)	1(12.5%)	-	2(25%)	1(12.5%)	8 (100%)

Table 2: Relationship between Ages of the Head of Household and Utilization of Health Care Providers

Utilization	Age categories			Total
	20-39 years	40-59 years	Equal or greater than 60 years	
Government	31(53.4%)	27 (61.4%)	15 (53.6%)	73 (56.2%)
Private	10 (17.2%)	5 (11.4%)	6 (21.4%)	21 (16.2%)
Self-medication	17 (29.3%)	12 (27.3%)	7 (25.0%)	36 (27.7%)
Total	58 (100.0%)	44 (100.0%)	28 (100.0%)	130 (100.0%)

Chi square= 1.602; d.f=4; p-value=0.808

Table 3: Relationship between Occupation of the Head of Household and Utilization of Health Providers

Utilization	Self- employed/salaried employment	Farmer	Adults unemployed	Total
Government	12 (42.9%)	32 (52.5%)	32 (72.7%)	76 (57.1%)
Private	5 (17.9%)	14 (23.0%)	3 (6.8%)	22 (16.5%)
Self Medication	11 (39.3%)	15 (24.6%)	9 (20.5%)	35 (26.3%)
Total	28 (100.0%)	61 (100.0%)	44 (100.0%)	133 (100.0%)

Chi-Square=9.597 d.f=4 P-Value=0.048

Table 4: Relationship between the Marital Status of Heads of Households and Utilization of Healthcare Providers

Utilization	Marriage union	Other than Marriage union	Total
Government	55 (54.5%)	20(64.5 %)	75 (56.8%)
Private	19 (18.8%)	2(6.5%)	21(15.9%)
Self Medication	27 (26.7 %)	9 (29.0 %)	36 (27.3%)
Total	101 (100.0%)	31 (100.0%)	132 (100.0%)

Chi-square =2.746 d.f=2; p-value=0.253

Table 5: Relationship between Age of the Patient and Utilization of the Healthcare Provider

Utilization	Age Categories				Total
	0-5 years	> 5-15 years	>15-49 years	>49 years	
Government	17 (65.4%)	18 (69.2%)	27 (45.0%)	14 (63.6%)	76 (56.7%)
Private	2 (7.7%)	2(1.7%)	15 (25.0%)	3 (13.6%)	22 (16.4%)
Self-Medication	7 (26.9%)	6(23.1%)	18 (30.0%)	5 (22.7%)	36 (26.9%)
Total	26 (100.0%)	26 (100.0%)	60 (100.0%)	22 (100.0%)	134 100.0%)

Chi-square=8.406: d.f=6; p-value=0.210

Education Level of Household Head

The categories of education levels were condensed into three levels, namely informal and pre-school education, primary education and secondary/college level of education. This was necessary to allow the use of chi-square test of significance. The three levels were then related to utilization of various health care providers utilized as a single source of care. The heads of household's level of education was found to have no statistical significant relationship (p=0.882) to the utilization of the government, private and self-medication as a source of treatment malarial illness.

Occupation of Household Head

There was a statistically significant relationship between the occupation of the head of household and the utilization of the health provider as a source of treatment for malarial illness (p = 0.048). Majority of the unemployed adults utilized Government Health facilities.

Marital Status of Household Head

No statistically significant relationship (p=0.253) was reported between utilization of the healthcare provider and marital status of the head of the household.

Religion of Household Head

No statistically significant relationship (p=0.811) was noted between utilization of the healthcare provider and the religious affiliation of the head of the household.

Socio Demographic Characteristic of Individuals with Malaria

There were more individual members of households (68.0%) reporting illness in non-irrigated area than the irrigated area. There were particularly more households reporting malarial illness in Murinduko village (47.4%) compared with the rest of the villages. Malarial illness was also reported at a higher

incidence among females (53.1%) than among males (46.9%). The incidences of malaria illness reported among different age group did not vary widely except for the age groups 6-9 years where it was significantly low (4.3%). Among those reporting a malarial illness, 30.7% were farmers while 30.6% were students and others (who included those below 5 years of age) It was also reported that 20.7% of those reporting malarial illness and had only attained informal education included those below 5 years.

Age of Patient

The age of the individual with malaria was found to have no statistically significant relationship (p=0.210) with utilization of health providers for malaria. Government based providers were utilized by individuals of all ages. However, relatively more individuals reported utilization of the private sector in the age category 15-49 years than in other categories.

Sex of Patient

There was no statistical significant relationship (p=0.334) between the sex of the patient and the utilization of the healthcare provider options.

Marital Status of Patient

There was no statistically significant relationship (p=0.218) between the marital status of the patient and the utilization of the healthcare options.

Occupation of Patient

Unlike other variables related to the individuals with malaria, occupation was reported to have a statistically significant relationship with utilization of the healthcare providers.

Education Level of Patient

There was no statistically significant relationship (p=0.386) between the level of education and utilization of healthcare provider options.

Religion of Patient

No statistically significant relationship (p-0.723) was reported between religion of the patient and utilization of healthcare provider.

Health Care Provider Characteristics

The results on the proximity the health care provider, quality of care as perceived by the consumers and the cost of services for malaria illness and their relationship with choices and utilization of the health care providers are provided below.

Perceived Quality of Service

The categories of perceived quality of service reported were compared among different healthcare providers that were utilized as a single source of care. The findings showed that majority of those utilizing the government health facilities, 93(72.2%), perceived this as providing medium quality of service and only 15(13.0%) perceived quality to be relatively low. Among the ones utilizing the shops, the perceived quality was relatively low as reported by 28(60.9%) of the households. There was a statistically significant relationship between utilization of health providers and the quality of service (p=0.000). Private providers were perceived to provide higher quality of service than others. Government facilities were perceived to offer lower quality of service than other providers despite its higher utilization.

Cost of Service

The treatment expenditure for a malarial illness reported a leptokurtic distribution with a right-sided skewness as tested by K-S test (k>0.25, sk>0). The overall median cost for treatment of a malaria illness in a government health facility and that resulting from self medication was lower than in private and mission facilities. The maximum costs reported from the government facility are associated with admission fees, which not only include medication cost but also accommodation and nursing care. There was a statistically significant relationship (p-value=0.0000 between utilization of health providers and the cost of service.

Distance to Healthcare Facility

Majority of households utilizing healthcare services were lying between 5 km to the user. An estimated 94.5% of those who reported the distance to the government healthcare options lived within 5 km while only 68.4% of those reporting to the private healthcare options lived within 5 km. There was a statistically significant relationship between utilization of health providers and the distance to the facility (p-value = 0.001).

Location of Household

There was a statistically significant relationship (p=0.000) between utilization of health providers for malaria with the location of the household.

DISCUSSION

The determinants of the treatment seeking behaviour were crucial issues that were investigated, Health provider variables that were studied defined accessibility factors in the foregoing study. They included distance to the healthcare provider, quality of care as perceived by the consumers and the cost of services for malaria illness. These factors were shown to have a statistically significant relationship p utilization of health care options sought for malarial illness. Among the individuals utilizing government health facility during the health facility-based exit interviews, 39.7% and 45.2% cited the high cost of service and perceived quality consequently as factors considered when choosing the facility.

Perceived quality was assessed from the customer service perspective. Provider-patient interaction widely gained significance as an area of research largely because of its centrality in influencing sequent use of health services. Furthermore, a market-oriented strategy promises a competitive advantage for health-care providers in the service industry. The patient-provider interaction draws on gender, age, social class, race, religious orientation and education that are often different for the client and the service provider. During the focus group discussions, the unfriendly personnel found in healthcare facilities contributed to the under-utilization of government facilities. The unfriendly behaviour could emanate from the characteristics of the clients and provider that defines power relationships communication that

complicates the subsequent decisions to use the facility. This is an issue that may need to be researched on in further studies. The private facilities in Mwea Irrigation Scheme were not spared either. There was repeated condemnation of quality of care offered by these facilities in the division. Sub-standard service was evident even from the narrations of the discussants. The services did not even auger well with the cost demanded by the providers. Complaints ranging from incorrect laboratory reports and treatment of wrong diagnosis were reported by the discussants. Poor supervision of health facilities was reported by the discussants to contribute to the delivery of sub-standard services in the private facilities. The community members reported the presence of quacks in the villages and private clinics. Discussants noted that government facilities offer relatively more correct diagnosis and laboratory reports. They also recommended stocking with drugs in these facilities to attract more clients. A balance between cost of service and quality should be reached to ensure accessibility. Distance was shown to have a statistically significant relationship with utilization, which is not a unique finding in this study as this has been reported before in other studies (Mwabu *et al.* 1995). The location of the health facility in either the irrigated or non-irrigated regions was also reported to relate statistically significantly to the utilization of treatment providers for malaria. This could be explained by the differences in geographical accessibility of each facility (Kimani, 1982). This information has important policy implication since changes in medical costs and perceived quality would mean changes in utilization. Individual characteristics studied included age, sex, education level, occupation, marital status and religion. There was a statistically significant relationship between the occupation of the head of household and the utilization of the health provider (p=0.048). Among the heads of the households w hose occupation was farming, 52.5% of them utilized the government health providers while the rest were distributed between private and self-medication. Among the households headed by unemployed households, 72.7% utilized the government health provider. This is probably related to affordability issues of health services. A statistically significant relationship between occupation of the individuals with malaria and utilization of health providers was also noted. Although more male-headed households were found to utilize the private healthcare providers than the female - headed households, no statistically significant relationship was reported with utilization. This emphasis the need for gender issues involved in treatment seeking behaviour to be further researched on. One of the households' characteristics was noted to statistically relate to utilization of the healthcare providers namely socio-economic status. This is likely to be associated with the ability to pay for the services.

CONCLUSION AND RECOMMENDATIONS

The study findings reported that non-medical factors are significant when choices to utilize formal health services are considered. Medical cost, perceived quality of care, distance and geographical location were all-important when choices to utilize health services delivery facilities were made, the study findings emphasize the importance of improving the quality of care in all health care options. It is also important to monitor quality control on the standards in all health facilities. From the above discussion, this paper recommends the need for patient-provider interaction improvement, since perceived quality of care as determined in this study was reported to have massive influence on decisions when choosing among alternative choices of health care. In addition, sustainable income generating activities should be initiated to support the communities in order to enable them overcome the barriers of cost when seeking care. Health financing activities such as community-based insurance schemes may alleviate poor treatment seeking behaviour through enhancing the community's ability to demand health services since the medical cost barriers will be reduced. Additional strategies such as cost containment by pooled procurement, negotiation of more favourable prices, removal of charges, tariffs and taxes and introduction of subsidies are a key to improving the affordability of newer and more expensive treatment regimes and to widespread availability of these treatments to at risk population in Africa.

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