



Situational Factors: The Ever Present Bottlenecks in Efforts to Improve Personal Treatment Seeking-Behavior Regarding Malaria in Uganda

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Abstract

This study assesses the contribution of situational factors to an individuals' disposition towards seeking treatment when they have or suspect themselves to have malaria. The purpose of this study was to get evidence-based knowledge on the role of situational factors in order to inform areas of interventions that could increase individual's active involvement in their health-care mainly in seeking timely treatment for malaria or suspected malaria. This is a cross-sectional, correlational design on a clustered sample of 380 rural households in 05 sub-counties of Kanungu district. Data were collected using researcher-administered questionnaires, structured and pre-tested on a population of 380 persons. Key-informant interviews and focus group discussions were held. Results indicated a significant positive relationship between Situational factors and treatment seeking behavior ($r = 296^{**}$, $p \leq 0.0$). In conclusion, when an individual suspects to have malaria through personal assessment of the attendant feelings from signs and symptoms, what immediately comes to mind are the situational elements like distance to the health facility and cost of treatment. It is recommended that health communicators should address situational factors which, according to this study are mainly costs-related. If it is distance, messages should mirror the advantages of distance in order to change behavior in that direction.

Subject Areas

Epidemiology

Keywords

Situational Factors, Treatment Seeking Behavior, Malaria

1. Introduction

Malaria has remained one of the leading causes of mortality and morbidity in Uganda with a prevalence of 19%. Malaria accounts for between 30% - 50% of all outpatient visits at health facilities and 15% - 20% of all hospital admissions. It accounts for 20% of hospital deaths. By 2012, all players in the communications effort against malaria had a goal of reducing malaria-related mortality and morbidity by 70% by 2015. This was not achieved since another strategic objective proposed in 2015 was that at least 85% of the population should undertake correct practices in malaria prevention and treatment by 2017.

In 2020, Uganda had the 3rd highest global burden of malaria cases and deaths and the highest proportion of malaria cases in East and Southern Africa. In 2021, the malaria national incidence was at 246 cases of malaria for every 1000 people, then increased to 320 cases per 1000 people in 2022 yet the target was to reduce cases of malaria to 215 for every 1000 people. Indeed, by December 2022, WHO rated Uganda as having the world's highest malaria incidence rate of 478 cases per 1000 people per year. This scenario continues to call for more research on insights and contributing factors like climate change.

In Uganda, the Centers for Diseases Control report [1] said that at an individual and household level generally, the costs related to malaria included purchase of drugs for treating malaria at home; expenses for travel to, and treatment at dispensaries and clinics; lost days of work; absence from school; expenses for preventive measures and expenses for burial in case of deaths. For the national governments, costs include maintenance, supply and staffing of health facilities; purchase of drugs and supplies; public health interventions against malaria (insecticide spraying or distribution of insecticide-treated bed nets) lost days of work with resulting loss of income; and lost opportunities for joint economic ventures and tourism. It's upon this background that this study attempts to assess the contribution of situational factors in shaping treatment seeking behavior in Kanungu, one of the remote districts in South-Western Uganda [2].

In 2014, the Uganda National Malaria Control Project developed a strategic plan (2014-2020) [3]. Among its objectives was a rapid and synchronized scale-up of cost-effective interventions to achieve universal coverage of malaria prevention and treatment. This was premised among other factors, on evidence that many people still engaged in self-treatment and relied on non- artemisinin-based combination therapies (ACTs), 75% - 80% persons with suspected

malaria got treatment from local drug shops with recommended and non-recommended over-the-counter anti-malarial drugs despite government efforts to increase access to ACTs as first line of treatment.

2. Methods

2.1. Sampling

The District Health Officer guided on purposive sampling to choose the five sub-counties for the study (Nyamirama, Kambuga, Rugyeyo, Kanyantorogo and Kirima) based on malaria prevalence. For the households in each parish, there was no necessity for sampling because of uncertainty to get participants at home. Data collectors used availability of “qualified” respondents to get a maximum of 19 households in each of the 4 parishes of the 5 selected sub-counties (19 households \times 4 parishes \times 5 sub-counties = 380 respondents). The study was confined to adults aged 18 years and above mainly house heads who would satisfy the “inclusion criteria” of having experienced fever that turned out to be malaria, or was suspected to be malaria during the one-year recall period.

2.2. Use of Questionnaires

A questionnaire (written in local language) with sets of predetermined close-ended questions was employed. Respondents were required to indicate the frequency to which the statements represented their experiences by ticking the most applicable scale. Responses were recorded in two forms of 5-point Likert scales. One scale used Strongly Agree = 5, Agree = 4, Not sure = 3, Disagree = 2, Strongly Disagree = 1. Another scale also had 5 points as; Always = 5, Frequently = 4, Sometimes = 3, Rarely = 2, Never = 1). The questionnaire was subjected to a Cronbach alpha test, then pre-tested on 40 respondents (slightly above 10% of eventual sample). Then, the Key Informant Interview checklist and Focus Group Discussion checklist were evaluated by 09 researchers (subject matter experts) before using them in data collection.

2.3. Focus Group Discussions (FGDs)

From each of the 5 sub-counties, 6 key informants were purposively selected making a total of 30. Again, from each of the 5 sub-counties, 1 Focus Group Discussion (FGDs) was held making a total of 5 FGDs for the study. For analysis, data were consistently crosschecked to identify human-based entry errors to ensure accuracy, consistency and uniformity. Data generated from FGDs and KIIs were initially transcribed from audio to written responses and thereafter analyzed qualitatively using STATA Version 16.0. The relationships between study variables were got through a correlation analysis. A table has been generated for data presentation.

2.4. Ethical Clearance

Ethical clearance was obtained from the Mbarara University Research and Ethics

Table 1. Situational factors.

	Disagree N (%)	Agree N (%)	Mean	Std Deviation S
A full dose for Malaria treatment is not affordable	35 (9.5)	331 (90)	4.32	1.038
Sometimes I substitute traditional herbs to clinical medicines for malaria because they are readily available	170 (45.9)	200 (54)	2.99	1.555
Whenever I feel fever I rush to the clinic because it is near	252 (67.2)	91 (23.1)	2.59	1.212
Prayer can heal malaria instead of costly treatment	352 (92.6)	26 (6.9)	1.41	0.844
Malaria tablets are sometimes not affordable	40 (10.5)	307 (81)	4.00	1.007
Malaria injections are usually not affordable	33 (8.7)	306 (83.2)	4.04	0.975
Laboratory tests are sometimes not affordable	41 (0.8)	312 (82.1)	4.01	1.009
The health center is far from here	86 (22.7)	292 (76.8)	3.78	1.419
I don't usually go to hospital because its far	98 (25.9)	281 (74.1)	3.69	1.472
Transport money to the health center is a lot for me	92 (24.3)	286 (75.7)	3.72	1.461
Buying tablets from the shops/pharmacies is the same as getting them from hospital because in hospital I also pay	283 (74.5)	90 (13.4)	2.15	1.419
I don't usually walk to hospital if I have fever. I use other means of transport instead of walking	179 (47.2)	199 (52.5)	3.14	1.715
I go to clinic only if fever is much	124 (32.7)	254 (67.1)	3.24	1.374
I use the hospital much because drugs are available	97 (25.7)	274 (72.5)	3.80	1.372
Malaria tablets are cheaper in shops than in pharmacies	204 (54.4)	170 (43.3)	2.66	1.500
I use the hospital much because it is near my home	97 (25.5)	190 (50)	3.78	1.409
I have shared malaria tablets with a family member before	190 (50)	190 (50)	2.80	1.637
I keep malaria drugs at home for future immediate use	246 (57.8)	133 (35)	2.34	1.519
Malaria tablets from drug shops no longer cure malaria fever	301 (80)	47 (12.5)	1.87	1.134

Continued

I prefer getting tabs from the shop because they give on credit	159 (42.3)	217 (57.7)	3.11	1.475
Healthcare givers in hospital are rude to malaria patients who don't have money	118 (31.4)	231 (64.3)	3.56	1.512
A motorable road is more than one Kilometer away from here	99 (26.4)	275 (73.4)	3.76	1.565

Source: Raw data 2017. Note: Figures in brackets represent percentage of valid responses.

Committee, Uganda National Council for Science and Technology, Office of the President of Uganda, Resident District Commissioner Kanungu, District Health Officer, and Local Council Chair persons of the sub-counties where data was collected. Additionally, during data collection, recruits were oriented about the purpose of the study and requested to consent to participate. Respondents were told specifically that they could decline responding to any question, or were free to pull-out of the interactions at any stage. After field data collection, transcription and coding, all voice data and the hard copy responses were kept securely in line with the promised confidentiality of the response data.

3. Findings

Respondents' responses on each statement about the influence of situational factors regarding malaria are presented in **Table 1** below. Responses are explained in terms of descriptive statistics which included; mean, standard deviation (S), plus aggregated responses on either "Agree/Strongly Agree" or "Disagree/Strongly disagree" score. The following scale was used during the interpretation of mean.

<u>Mean range</u>	<u>Response rating</u>
Mean \leq 2.50	Disagree
2.5 < mean \leq 3.50	Not sure
Mean > 3.50	Agree

Pearson correlation [4] showed the following results presented in **Table 2** below (cost and distance are sub-sets of situational factors).

In the table below, there is a significant relationship between situational factors and treatment seeking behavior. Test: $r = 0.296$, $p \leq 0.01$; implying that situational factors are good predictors of treatment seeking behavior by about 0.296. This means that when an individual suspect to have malaria through personal assessment of the attendant feeling from signs and symptoms, what immediately comes to mind are the situational elements like distance to the health facility and cost of treatment. Of the two situational factors particularly tested in this study, perceived cost of treatment had a bigger contribution (Test: $r = 0.340^{**}$, $p \leq 0.01$) compared to perceived distance in getting treatment (Test: $r = 0.084^{**}$, $p \leq 0.01$). Also, when weighed against each other as situational factors,

Table 2. Inter-item correlations.

	Perceived Cost	Perceived Distance	Situational Factors (overall)	Treatment Seeking Behavior
Perceived Cost	1.00			
Perceived Distance	0.427**	1.00		
Situational Factors (overall)	0.940**	0.710**	1.00	
Treatment Seeking Behavior	0.340**	0.084**	0.296**	1.00

**Correlation is significant at the 0.01 level (2-tailed). Source: extracted from raw data in SPSS.

the score remains with the same picture (0.940** and 0.710**) respectively.

4. Discussion

Studies done in Kenya [5] and Uganda [6] indicated that ability to meet the costs associated with a particular treatment was an important factor influencing access and choice of treatment. That even where malaria treatment was supposedly free (in government health facilities), individuals still incurred costs, such as transport and laboratory services. Consequently, people often started with a cheaper treatment, then choose a more expensive option as the illness persisted or when funds become available [7].

Situational factors in this study were issues revolving around costs related to treatment, distance from home to a health facility, issues to do with perceived efficacy of drugs and medicines, seriousness of symptoms and medication adherence [8] [9].

Majority respondents (n 331: 90%, mean: 4.32) said that a full dosage for malaria treatment was not affordable (very expensive) and relatedly 274 (72.5%) said that the issue of expensive medicines was the reason they go to hospital where they expect free medicine (mean: 3.80). This issue of non-affordability cuts across both tablets (n307: 81%, mean: 4.00) and injections (n 306: 83.2%, mean 4.04) in addition to laboratory tests (n 312: 82.1%, mean: 4.01). Thus, 200 (54%) of the respondents acknowledged substituting traditional herbs for clinical medicines for treatment of malaria symptoms.

To concur with Malaria Atlas Project [10] the table above also shows that majority respondents (n = 275: 73.4%, mean 3.76) live more than a kilometer away from a motorable road and hence (286: 75.7%) respondents consider transport money to the health facilities as “a lot” (mean: 3.76). Subsequently, it appears to be the reason why 281 (74.1%) use alternative sources of medication because of this transport limitation (mean: 3.69). However, when fever intensified, 254 respondents (67.1%, mean: 3.24) would then consider going to the clinic. Not surprisingly therefore, 190 (50%, mean: 2.80) of the study participants said they had

ever shared malaria tablets with a family member while 133 (35%) respondents reported keeping malaria drugs at home for future use. The preference for the source of first choice of treatment location is reported by 217 (57.7%) respondents as related to the “credit” facilities offered by drug shops (mean: 3.11) in case one doesn’t have immediate cash.

Lastly, on a good note, 301 (80%, mean: 1.87) respondents still believe in the efficacy of malaria tablets in curing/treating malaria. Key Informants were asked to comment on what situational factors could prevent some people in their areas from seeking prompt treatment whenever they were sick. A host of factors were mentioned and they included the following: Lack of money, Long distances from homes to health centers, Poor means of transport, Perception on lack of drugs in the health units, Fear of long lines at health centers, Doubting what kind of disease it is, Ignorance about how dangerous malaria can be, Influence of traditional healers, Planting season, High hospital bills, Fear of injections or tablets, Fear of other outcomes from laboratory tests, Rude language by medical workers, Poor communication from health workers, Lack of confidence in the government healthcare system, Absence of medical workers and then Self-medication.

“...People travel all the way from Nyamirama to get treatment here in Kambuga when there are no drugs in their Health Centre III.” (KI, female nurse)

“...long distance and poor means of transport. Using a boda at night sometimes they refuse to take you or ask for a lot of money. Sometimes you are not even sure that there are drugs or the doctor. So you remain at home until you are badly off.” (KI, Nyarurambi-Rugyeyo)

“...lack of easy access to drugs in health centers, lack of financial capacity and beliefs in use of traditional herbs. But these days mainly, its lack of confidence in the government health care system.” (Civil servant, Kashojwa-Rugyeyo)

“...traditional beliefs, some people fear tablets and injections. Poverty among the people and long distance to the health centers (Female VHW from Kambuga)”.

“...season of planting, distance, poverty, lack of awareness and stock out of drugs (VHW-Ntungwa, Nyamirama)”.

“...lack of money for transport and buying drugs. There is also poor communication from health workers and this repels patients. But most importantly, lack of availability of malaria drugs in government health centers (Sub-county chief, Nyamirama)”.

“...if you feel fever in the evening or at night, you must wait until the next morning. If you call a boda boda man, you will be lucky if he accepts but even then can ask you for 10,000 Shs. (US\$3). They usually say it is far and risky.” (KI, female: Kanyantorogo)

“...going to health center or hospital takes a whole day. If it is during a planting or weeding season, it means a whole day’s work is lost. That is why

I would first take some panadol as a precaution. If fever remains, then I can go.” (KI, Female, Kirima)

“...I usually use the market days to go to hospital to save time. If it is not a market day, you can’t get a vehicle to Kataate (a hospital in Kanungu town).” (KI, Male, Rugyeyo)

During our Focus Group Discussions, participants were required to give their opinions on whether people in their particular community liked seeking treatment early and in cases where they thought this was not the case, to discuss the possible Situational factors responsible for that behaviour. A few responses are presented below:

“...Those who don’t come have their reasons especially those far from the health center. They may want to first believe that the symptoms will just go away or they engage in self-treatment with some tablets which remained after a previous sickness.” (FGD participant, Male, Rugyeyo)

“...Some of those who don’t come early are limited by money and they always have to first look for money in case there are no drugs at the health center they are prepared to go to the nearby shops to buy drugs. The rest just think there are no medicines in the health center anyway. There are others who mistake symptoms for being tired after heavy work.” (FGD participant, female, Rugyeyo)

“...These days they try to seek early treatment but not necessarily in the formal health centers. They use drug shops because they think there are no medicines in hospitals. Others go to shops because they can get credit.” (FGD participant, male, Kambuga)

“...Some people come for treatment early but those who don’t come it is mainly because of distance. Taking a boda boda may be costly if it is at night. The others when they see a big line today, will not come again when they are sick and have money scarcity. A few take traditional herbs/ medicines.” (FGD participant, female, Kanyantorogo)

“...In this community, most people don’t seek treatment early because of poverty, ignorance, traditional beliefs and self-medication. They keep drugs at home so that when someone gets fever, they take some. This is not good because they are not yet sure that the fever is malaria. Some surely don’t have money at the time fever attacks so they have to look for money before coming for treatment.” (FGD participant, female Kirima)

“...There are still some people who believe in religions that stop them from taking tablets. Those use herbs. Majority is lack of money because they know that the hospital will write the prescription and send them to the clinic to buy the medicine”. (FGD participant, male, Kirima)

“...The biggest reason why people don’t seek treatment early is limited finances due to poverty. Others say that they would be wasting time because there are no drugs in the health centers.” (FGD participant, female, Nyamirama)

Cost of treatment [6] [11] [12] raises other issues like type of facility to visit in case of need for treatment; may create a sense of “let me wait and see whether its malaria” plus thoughts about distance to access services [13]. This scenario creates a situation of multiple barriers to prompt access with differing intensities.

Based on this research, public health policies to address these barriers to prompt treatment should thus be designed with “access costs” to the individual in mind. In Uganda for example, it is not enough to emphasize building of health facilities if drugs and medicines will be unaffordable (if available). Thus, global and government interventions to combat malaria need include such broad aspects that do not only address awareness and exposure to dangers of malaria but mainly to reduce cost related issues.

In conclusion, Situational factors are a significant bottleneck in appropriate response to address a malaria or suspected malaria incidence. Thus, Health communications should address situational factors which, according to this study are mainly costs-related. For example, if government establishes a Health Centre in a locality, communicators should identify the “local situational need” being addressed and tailor communications around that. If it is distance, messages should mirror the advantages of distance in order to change behavior in that direction. There should not be a general assumption that the local people will just understand what the intention of a government intervention was, unless clear messages accompany that intervention.

Conflicts of Interest

The authors declare no conflicts of interest.

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