



Factors Associated with Febrile Treatment-Seeking Behaviour among Expectant Mothers in Ssekanyonyi, Uganda

Nanjobe Uniah^a, Christopher Ddamulira^a, Stephen S. Kizza^b,
Lawlence Sserwanga^a and David R. Mutekanga^{a*}

^a Department of Public Health, Bugema University, Kampala, Uganda.

^b Department of Pathology/ Non-Communicable Diseases, Central Public Health Laboratories, Kampala, Uganda.

Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/IJTDH/2023/v44i231499

Open Peer Review History:

This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here: <https://www.sdiarticle5.com/review-history/107841>

Original Research Article

Received: 11/08/2023

Accepted: 16/10/2023

Published: 02/12/2023

ABSTRACT

Background: Malaria fever is a serious health problem that contributes greatly to morbidity and mortality in Uganda. In Mityana District where 4 in 10 pregnancy deaths are malaria related mothers who do not seek treatment in health facilities when they experience febrile illnesses. Therefore, a study was undertaken to identify factors associated with treatment-seeking behavior among pregnant women suffering from febrile illnesses suspected to be malaria in Ssekanyonyi Sub-County in Mityana District, Uganda.

Methods: A cross-sectional study in which questionnaires and key informant guides were administered to 198 expectant mothers to generate data on their socio-demographics and treatment

*Corresponding author: Email: balekemutekanga@gmail.com;

seeking behaviour. SPSS software version 20.0 was used for data analysis and a Logistic Regression model was fitted to identify factors that independently influenced their health-seeking behavior.

Results: Out of the 198 expectant mothers enrolled in the study, 42.9% were aged 15-25 years, 73.7% had achieved Secondary education, and 46.5% were married. The treatment-seeking behavior was found to be standing at only 56.6%. Among the different factors studied, health education on malaria (AOR = 3.68, P = 0.000), the attitude of midwives (AOR = 1.45, P = 0.003), patient care (AOR = 0.33, P = 0.030), and attitude of the pregnant mother (AOR = 5.38, P = 0.000) were found to be statistically significantly associated with treatment-seeking behavior among pregnant mothers with febrile illnesses.

Conclusion: The study concludes that health education on malaria, attitude of midwives and pregnant mothers are the most important in positively affecting treatment seeking behavior among pregnant mothers with febrile illnesses.

Recommendations: Health education on malaria, attitude of midwives, patient care and attitude of pregnant mothers need to be given attention in a bid to reduce febrile illnesses. The Ministry of Health and other responsible stakeholders need to reinforce awareness programs on health education among women of reproductive age about the danger of febrile illnesses during pregnancy and also help midwives address issues related to their attitude towards pregnant mothers

Keywords: *Pregnancy; malaria fever; febrile illnesses; treatment seeking behavior; Ssekanyonyi; Uganda.*

1. INTRODUCTION

Treatment-seeking behavior for febrile illnesses assumed to be malaria among pregnant women is of greater concern than in other groups at risk [1,2]. Febrile illnesses can lead to abortion, intrauterine fetal death, premature delivery, and even maternal death in case pregnant mothers do not seek treatment in time [3,4].

Previous studies [5] indicate that factors such as insufficient health education, the attitude of midwives, and myths about sickness during pregnancy are the major hindrances to seeking treatment among pregnant mothers even though they are exposed to febrile illnesses. The majority of the mothers depend financially on their husbands for health support, yet the majority of the vulnerable mothers are found in poverty-stricken countries and families where many use herbal medication before seeking conventional treatment [5,1,4]. According to UNICEF [1] and Chepkemoi et al. [5], health education in rural areas is said to be unconvincing yet mothers are aided to shun health units due to the bad attitude of some midwives during the antenatal visits. Although most mothers in rural areas cover long distances to health centers, there are several other factors that seem to influence treatment-seeking behavior among pregnant mothers when they experience febrile illnesses [5].

WHO [2] estimates that globally, 70% of women access antenatal care at least once in pregnancy. This presents an opportunity for pregnant women to access several health care services including treatment of febrile illnesses assumed to be malaria. According to UNICEF [1], in East Asia and the Pacific, only 90% of expectant mothers seek necessary health treatment from a skilled provider while others seek help from herbalists and drug shops. Available epidemiologic studies of malaria and febrile illnesses in pregnancy (MIP) in India by Sholapurkar et al. [6] found that many mothers were not seeking treatment due to low income and distance, yet malaria was associated with adverse maternal and neonatal outcomes including maternal anemia, preterm labor, stillbirths, and low birth weight. In Ethiopia, more than three-quarters of the landmass (altitude <2000 m) of the country is malarious, and pregnant women and under-five years old children are the most vulnerable groups [7].

According to UNICEF [1], the overall burden of febrile illnesses assumed to be malaria among pregnant mothers is high and its adverse outcomes to the pregnant mother and the unborn child are widespread. Despite the growing awareness about the pregnancy-associated febrile illness and the need for treatment, research has revealed that community members still attribute malaria to bed bugs, mangoes, maize, and poor nutrition yet many mothers seem to think febrile illnesses among pregnant

women is normal and may not require medical treatment [8].

Malaria manifested in febrile illnesses is a serious health problem that contributes greatly to morbidity and mortality in Uganda [9]. This is no different from the situation in Mityana District where 45% of pregnant mothers still do not seek treatment in health facilities when they experience febrile illnesses while 4 in 10 pregnancy deaths are malaria-related [10].

2. METHODOLOGY

2.1 Study Area

The study was carried out in Ssekanyonyi Sub County in Mityana District. Ssekanyonyi is located 20 kilometers by road after Mityana Municipality and Busunju Town council.

2.2 Study Design

A cross sectional study was designed to collect behavioral reactions from different respondents when they experience febrile illnesses. Both qualitative and quantitative research approaches were used. The descriptive study allowed the researcher to discover patterns in the respondents thinking and also to describe issues from their own point of view. Quantitative approach was used to analyze primary data from the field using descriptive statistics while qualitative approach was used to describe the state of reactions to febrile illnesses assumed to be malaria in Ssekanyonyi Sub County and discussion in relationship to interview results. The correlations design was used to establish relation between variables.

2.31 Study Population and Sample Size Determination

Sample size of 321 pregnant women was used, as derived from the study population of 9532 who were estimated to be visiting the health units in the study area per year (June 2022 to June 2023). Proportionate allocation sampling formula by Kothari (2004) was used to obtain the sample size from each health unit, based on the formula derived by Krejcie and Morgan (1970). However, only 198 (62%) respondents were interviewed.

2.4 Sampling Procedure

A simple random sampling procedure was employed to select 198 pregnant women

suffering from febrile illnesses, while purposive sampling was used to select 20 health workers at Health Center II, three (3) Village Health Team members (VHTs), and the District Health officer who acted as key informants in Ssekanyonyi Sub County Mityana District, Uganda.

2.5 Data Collection

The study used both a questionnaire and key informant interview guide as a supplementary tool for this study such that additional information was obtained from the opinion leaders and relevant people within the locality in relation to the subject of study. The key informant included; two (2) health workers at Health Center II, three (3) VHTs, and the District Health officer.

2.6 Data Analysis

Data collected were collated and edited for completeness and accuracy. The data was then analyzed using the statistical package for social scientists (SPSS) version 17.0. Data was analyzed and interpreted in line with the objectives of the study. Descriptive and inferential analyses were made using SPSS v.17.0. The descriptive analyses were made, and results were presented using information of frequencies and percentages. While for the case of inferential statistics, the Chi-squared test and Logistic Regression analyses were appropriate for testing for association between the outcome variable and categorical factors, establishing the factors associated with treatment-seeking behavior among pregnant women suffering from febrile illnesses assumed to be malaria in Ssekanyonyi Sub-county, with the level of statistical significance set at $p \leq 0.05$; as this would help to compare the observed values in the data to the expected values that we would see if the null hypothesis is true (Ugoni et al, 1995). All factors with a p-value of ≤ 0.05 were considered as significantly associated with treatment-seeking behaviour, and the Null hypothesis was rejected. Factors with a P- value of >0.05 were considered not to be associated with alcohol over consumption, and the Null hypothesis was accepted.

3. RESULTS

Study population and sample size of pregnant women studied at various health centers are shown in Table 1.

Table 1. Study population and sample size of pregnant women studied

Health Center	Study population (No.)	Sample Size	
		Total (No.)	Relative percentage (%)
Ssekanyonyi HC IV	4396	162	50.5
St Padre Pio HV III	2066	70	21.8
Bussunju HC III	1086	32	10.0
Bussunju Police HC II	998	29	9.0
Kassikombe HC II	986	28	8.7
Total	9532	321	100

The information in Table 1 above indicates that over half (50.5%) of the sample size was from Ssekanyonyi Health Center IV. This is clarified by the fact that is the biggest health facility in the area hence attracts the largest number of patients in this district.

A total of 189 pregnant women suffering from febrile illnesses were sampled. Of these a higher proportion (42.9%) of them were in the age bracket of 15 – 25 years, the majority (73.7%) had secondary school level of education and a higher proportion (46.5%) were married (Table 2).

Table 3 shows the factors associated with treatment-seeking behaviour among the pregnant women. The results show that the majority (77.8%) of these women had never attended any village seminar on health and malaria, and an even higher number of respondents (93.9%) had never had health workers visiting their homes to talk about malaria

issues. Majority (86.9%) reported positive attitude of midwives towards expectant mothers, majority (86.9%) reported receiving warm welcome from health workers, while majority (84.8%) reported feeling like they should be coming back to the health center whenever they get malaria. Also, most of the respondents (63.6%) reported that the medical workers usually test malaria with a kit. Slightly above average (56.6%) reported that they had ever been told that the health unit has no malaria medicine. A higher proportion (37.9%) reported traveling less than one kilometer to the health unit to receive malaria treatment, followed by those who reported travelling 1 – 2 kilometers (36.9%), while those traveling more than 2 kilometers to the health unit were the minority (25.3%). Majority (62.6%) reported having a monthly income level of less than Uganda shillings 49,000; while most of the mothers (85.9%) reported that malaria has adverse effects on pregnancy.

Table 2. Social demographics of pregnant women studied

Demographics	Variables	Frequency (No.)	Frequency percentage (%)
Age (years)	15-25	85	42.9
	26-35	71	35.9
	36-45	42	21.2
Level of education	Non formal	18	9.1
	Primary	34	17.2
	Secondary	146	73.7
theMarital Status	Single	12	6.1
	Married	92	46.5
	Divorced/Separated	10	5.0
	Widowed	8	4.0
	Cohabiting	76	38.4
Total		198	100

Source: Primary Data (2022)

Table 3. Factors associated with treatment-seeking behaviour among pregnant women studied

Factors	Questions to expectant women	Responses	Frequency (No.)	Percentage (%)
Health Education on Malaria	Have you ever attended village seminars on health and malaria?	Yes	44	22.2
		No	154	77.8
Attitude of midwives	Have health workers ever visited your home and spoke about malaria issues?	Yes	12	6.1
		No	186	93.9
Patient Care	Do midwives have positive attitude towards expectant mothers?	Yes	172	86.9
		No	26	13.1
Patient Care	Do you get warm welcome from the health workers?	Yes	172	86.9
		No	26	13.1
		Do you feel you should always come back to the health center whenever you get malaria?	Yes	168
Medical Supplies and Equipments	Do medical workers test malaria with a kit?	No	30	15.2
		Yes	126	63.6
Medical Supplies and Equipments	Have you been told that there were no malaria medicines in the health unit?	No	72	36.4
		Yes	112	56.6
Distance to health unit	Distance travelled (km)	No	86	43.4
		< 1 km	75	37.9
		1-2 km	73	36.9
Income Level	Monthly income in Uganda Shilling (USh)	2-5 km	50	25.3
		< 49,000	124	62.6
		50,000 - 99,000	74	37.4
Attitude of Pregnant Mother	Adverse effects on pregnancy	Yes	170	85.9
		No	28	14.1

Source: Primary Data (2022)

Table 4. Treatment-seeking behaviour among pregnant women studied

Behaviour	Questions	Responses	Frequency (No.)	Percentage (%)	
Seeking Treatment	Have you had malaria symptoms when pregnant?	Yes	120	60.6	
		No	78	39.4	
		If yes, did you go for medical treatment immediately you felt feverish?	Yes	112	56.6
		No	8	4.0	
Health care service provider	Have you ever found no health workers at the health center?	Yes	51	25.8	
		No	147	74.2	
Adherence	I observe the dosage as prescribed by the medical worker for malaria treatment.	All the time	88	44.4	
		Most of the time	66	33.3	
		Some time	40	20.2	
		Never	4	2.0	

Source: Primary Data (2022)

Table 4 shows the treatment-seeking behaviour among pregnant women. The results show that the majority (60.6%) of them reported having ever had malaria symptoms when pregnant,

while, among these, slightly above average (56.6%) reported that they went for medical treatment immediately they felt feverish. Majority (74.2%) reported that they had never missed to

Table 5. Summary of factors associated with treatment seeking-behaviour

Factors	Variables	Treatment-seeking		UOR (95% CI)	p-value	AOR (95% CI)	p-value
		YES No. (%)	NO No. (%)				
Attendance training on Malaria	YES	104 (86.6)	16 (13.4)	3.46 (2.56 – 3.98)	0.000	3.68 (2.91 – 4.39)	0.000
	NO	50 (64.1)	28 (35.9)	1		1	
Attitude of midwives	Positive	110 (91.7)	10 (8.3)	2.57 (1.88 – 3.01)	0.000	1.45 (0.93 – 2.05)	0.003
	Negative	74 (94.9)	4 (5.1)	1		1	
Patient-Care	Good	115 (95.8)	5 (4.2)	2.55 (1.75 – 3.23)	0.000	8.22 (6.45 –10.96)	0.030
	Not good	70 (89.7)	8 (10.3)	1		1	
Medical Supplies and Equipment	Available	94 (78.4)	26 (21.6)	2.52 (1.67 – 3.42)	0.000	0.79 (0.26 – 1.31)	0.650
	None	32 (41)	46 (59)	1		1	
Distance from health center	Short	113 (76.3)	35 (23.6)	0.314 (0.112 – 0.754)	0.052		
	Long	36 (72)	14 (28)	1			
Income level pregnant women	High	14 (21.8)	50 (78.1)	0.047 (0.013 – 0.101)	0.828		
	Low	113 (84.3)	21 (15.6)	1			
Attitude of pregnant women	Positive	100 (83.3)	20 (16.7)	5.53 (4.87 – 5.97)	0.000	5.38 (4.87 – 6.17)	0.000
	Negative	50 (64.1)	28 (35.9)	1		1	

UOR=Unadjusted odds ratio, AOR=Adjusted odds ratio, CI=Confidence intervals, RC=1

find health workers at the health center when they go for medication; whereas a higher proportion (44.4%) reported that all the time they observe the dosage as prescribed by the medical worker for malaria treatment.

Table 5 shows a summary of factors associated with treatment-seeking behaviour among the pregnant women. The results show that health-based factors had a significant association to treatment seeking-behaviour among pregnant women suffering from febrile illnesses assumed to be malaria. Health education on malaria, attitude of midwives and patient care had a significant association with treatment seeking-behaviour among pregnant women suffering from febrile illnesses assumed to be malaria. The adjusted odds ratio of health education on malaria [AOR = 3.68, (CI 95% = 2.91 – 4.39), $p=0.000$] implies that the odds of treatment seeking-behaviour among pregnant women who had attended training on malaria were about 4 times higher compared to those who did not attend trainings on malaria. While the adjusted odds ratio of attitude of midwives [AOR = 1.45, (CI 95% = 0.93 – 2.05), $p=0.003$] implies that the odds of the odds of treatment seeking-behaviour among pregnant expectant mothers who reported positive attitude of midwives were 1.45 times higher as compared to those who reported negative attitude of midwives. On the other hand, the adjusted odds ratio of patient care [AOR = 8.22, (CI 95% = 6.45 – 10.96), $p=0.030$] implies that the odds of treatment seeking-behaviour among pregnant expectant mothers who they were given good care by the medical workers at the health units were 8 times higher compared to those who were not given good care by the medical workers at the health units. Other health-based factors such as medical supplies and equipment and distance to health unit had no significant association to treatment-seeking behaviour among pregnant expectant mothers.

Personal factors also had a significant association with treatment-seeking behaviour among expectant mothers. Attitude of pregnant mother was the only personal factor that had a significant association with treatment-seeking behaviour among pregnant expectant mothers. The adjusted odds ratio malaria [AOR = 5.38, (CI 95% = 4.87 – 6.17), $p=0.000$] imply that the odds of treatment-seeking behaviour among pregnant expectant mothers who had had positive attitude towards the midwives were about 5 times higher compared to those who had negative attitudes. Other personal factors such as income level had

no significant association to treatment-seeking behaviour among pregnant expectant mothers. These quantitative results were consistent with the qualitative results.

4. DISCUSSION

The study found that health education on malaria is significantly associated with treatment-seeking behavior for febrile illnesses. This implies that when pregnant mothers are given varied sessions of training to acquire knowledge about malaria, they are more likely to seek treatment immediately after they experience changes in their body temperate. This can contribute to fighting maternal mortality caused by other febrile illnesses. These findings are consistent with several authors [11,12,13] who reported that the failure to establish the level of knowledge of community members regarding malaria appeared to be responsible for the inability of intervention programs to achieve sustainable control.

The results above also show that the attitude of midwives is significantly associated with treatment-seeking behavior for febrile illnesses assumed to be malaria among pregnant mothers in the area of study. This implies that when pregnant mothers are handled well, they will always seek treatment for febrile sicknesses assumed to be malaria. These findings are supported by several authors [14, [14,15,16] who reported that nurses should be good to their patients instead of being rude, shout at their clients, refuse to offer assistance, and or even threaten pregnant women during antenatal care visits or while in labour. It is clear that poor customer-care handling is an important contributing factor to scaring mothers away from health care facilities.

As observed from the findings, patient-care was significantly associated with treatment-seeking behavior among respondents. The findings suggested that the health workers in the research area were still aware of the obligations to their clients. Several researchers [17,18] noted that it is important that expectant mothers are given enough patient care that can propel them to always seek hospital treatment whenever they are seeking it. According to Mgawadere [19], if mothers have changed considerably their normal moods, the health workers should be in a position to give comfort and contain their emotions.

Also, the attitude of pregnant mothers was found to be significantly associated with treatment-seeking behavior for pregnant mothers having

febrile illnesses assumed to be malaria. This was a very contributing factor in health promotion aspects of the community that health workers should try to be diligent when serving special populations. In agreement with the above findings, several authors [20,6,21] (inform that expectant mothers are simply negligent about seeking health treatment when they are sick of malaria but they are actually aware of the challenges caused by the delayed treatment of malaria. Sholapurkar et al. [6] inform that it is not certain whether mood swings alone can deter mothers from seeking malaria treatment but what is known is that mother's attitude towards the treatment of malaria is undesirable for health outcomes.

5. LIMITATIONS

The study was largely cross sectional in nature and data was collected at a single point in time which may not allow changes in behavior to surface, the qualitative longitudinal studies with in-depth interviews could have provided more insights after passage of few months about how the expectant mothers change in treatment-seeking with changes in various situations.

6. CONCLUSION

From the study, health education on malaria, the attitude of midwives, patient care, and the attitude of the pregnant mothers were found to be significantly associated with treatment-seeking behaviors among pregnant women suffering from febrile illnesses assumed to be malaria. This calls for more attention by the Ministry of Health and other responsible stakeholders to reinforce awareness programs on health education among women of reproductive age about the danger of febrile illnesses during pregnancy and help midwives address issues affecting their attitude towards pregnant mothers.

CONSENT AND ETHICAL APPROVAL

A written informed consent was explained and duly obtained from the respondents prior to data collection then the researcher established rapport and proceeded with the interview in a private quiet room. The anonymity and privacy of the participants was observed. The participants remained anonymous during the whole process of the study. The participants' information was kept confidential and only used for the purpose of this research. Authorization was also obtained in writing from the Mulago Research Ethics Committee (REC) and Uganda National Council

for Science and Technology (UNCST) as required by law in Uganda and in fulfilment of research ethics.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. UNICEF. UNICEF annual report 2009. For every child, reimagine; 2009. Available:<https://www.unicef.org/reports/annual-report-2009>
2. WHO. World malaria report 2020. 20 years of global progress & challenges, WHO Geneva Switzerland; 2020. Available:<https://www.who.int/teams/global-malaria-programme/reports/world-malaria-report-2020>
3. Mvondo JL, James MA, Cambell CC. Malaria and pregnancy in Cameroonian women. Effect of pregnancy on Plasmodium falciparum parasitaemia and the response to chloroquine. Tropical medicine parasitology. 2012;43(5):1-5.
4. WHO. Malaria: Global Health Observatory (GHO) data; 2016. Available:<http://www.who.int/gho/malaria/en/> on 4th January 2022
5. Chepkemoi A, Mutulei N. Factors influencing the uptake of intermittent preventive treatment for malaria in pregnancy: Evidence from Bungoma East District, Kenya. Science and Education Publishing; 2014. Available:<http://pubs.sciepub.com/ajphr/1/5/2/index.html> on 3rd May 2023
6. Sholapurkar S, Gupta A, Mahajan R. Clinical course of malaria in pregnancy a prospective controlled study from India. Trans R Soc Trop Med Hyg. 2015;82:376–379.
7. Musa OI, Salaudeen GA, Jimoh RO. Awareness and use of insecticide treated nets among women attending ante-natal clinic in a northern state of Nigeria. JPMA. The Journal of the Pakistan Medical Association. 2009;59(6):354–358.
8. MoH, Uganda. Uganda clinical guidelines 2016. National Guidelines for Management of Common Conditions. (2016). Available:<https://www.prb.org/wp-content/uploads/2018/05/Uganda-Clinical-Guidelines-2016-National-Guidelines-for-Management-of-Common-Conditions.pdf>

9. MoH Uganda. WHO country cooperation strategy, Uganda, 2016–2020; 2016a. Available: <https://www.afro.who.int/sites/default/files/2017-08/3rd%20WHO%20Country%20Cooperation%20Strategy%20in%20Uganda.pdf>
10. Mityana District. Local government performance assessment Mityan District; 2018. Available: https://budget.finance.go.ug/sites/default/files/mityana_district_assessment_lgpa_full_report-compressed.pdf
11. Tyagi P, Roy A, Malhotra MS. Knowledge, awareness and practices towards malaria in communities of Rural, semi-rural and bordering areas of east Delhi, India. *Journal of Vector Borne Disease*. 2005;42:30-35.
12. Workineh B, Mekonnen FA. Early treatment-seeking behaviour for malaria in febrile patients in northwest Ethiopia. *Malar J*. 2018;17:406. Available: <https://doi.org/10.1186/s12936-018-2556-2>
13. Munzhezzi M, Rogawski McQuade ET, Guler JL, et al. Community knowledge, attitudes and practices towards malaria in Ha-Lambani, Limpopo Province, South Africa: a cross-sectional household survey. *Malar J*. 2021;20:188. Available: <https://doi.org/10.1186/s12936-021-03724-z>
14. Adeyemo. Comparative analysis of health institutions on the attitude and practice of midwives towards pregnant women during child delivery in Ogbomoso, Oyo State, Nigeria; 2013. Available: <http://www.iosrjournals.org/iosr-jnhs/papers/vol1-issue3/D0131419.pdf> on 18/5/2023
15. Taremwa IM, Ashaba S, Kyarisiima R, Ayebazibwe C, Ninsiima R, Mattison C. Treatment-seeking and uptake of malaria prevention strategies among pregnant women and caregivers of children under-five years during COVID-19 pandemic in rural communities in South West Uganda: A qualitative study. *BMC public health*. 2022;22(1):373. Available: <https://doi.org/10.1186/s12889-022-12771-3>
16. Adum P, Agyare VA, Owusu-Marfo J, Agyeman YN. Knowledge, attitude and practices of malaria preventive measures among mothers with children under five years in a rural setting of Ghana. *Malaria Journal*. 2023;22(1):268. Available: <https://doi.org/10.1186/s12936-023-04702-3>
17. Akakpo MG, et al. The role of care-seeking behavior and patient communication pattern in online health information-seeking behavior - a cross-sectional survey. *Pan African Medical Journal*. 2022;42:124. DOI: 10.11604/pamj.2022.42.124.33623
18. Guntur RD, Kingsley J, Islam FMA. Malaria treatment-seeking behaviour and its associated factors: A cross-sectional study in rural East Nusa Tenggara Province, Indonesia. *PLOS ONE*. 2022;17(2):e0263178. Available: <https://doi.org/10.1371/journal.pone.0263178>
19. Mgawadere F. Assessing the quality of antenatal care at lungwena health centre in Rural Malawi; 2009. Available: www.medcol.mw/mph/dissertations/.../Florence%20Mgawadere.pdf on 22/11/2022
20. Mubyazi G, Bloch P, Kamugisha M, Kitua A, Ijumba J. Intermittent preventive treatment of malaria during pregnancy: a qualitative study of knowledge, attitudes and practices of district health managers, antenatal care staff and pregnant women in Korogwe District, north-eastern Tanzania. *Malar J*. 2014;4:31.
21. Kaboré JMT, Siribé M, Hien D, et al. Attitudes, practices, and determinants of community care-seeking behaviours for fever/malaria episodes in the context of the implementation of multiple first-line therapies for uncomplicated malaria in the health district of Kaya, Burkina Faso. *Malar J*. 2022;21:155. Available: <https://doi.org/10.1186/s12936-022-04180-z>

© 2023 Uniah et al.; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Peer-review history:

The peer review history for this paper can be accessed here:
<https://www.sdiarticle5.com/review-history/107841>