

Evaluation of the Public Perception Regarding Malaria during Pregnancy among Expectant Mothers at Bitereko Health Center III in Mitooma District

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ABSTRACT

The study aimed to evaluate how pregnant mothers at Bitereko Health Center III in Mitooma district perceive malaria during pregnancy and propose preventive interventions. Employing a descriptive cross-sectional design encompassing qualitative and quantitative methods, the research involved 100 participants from the health center. Data analysis utilized Microsoft Excel and SPSS software. Results indicated that 80% of pregnant women were knowledgeable about malaria prevention, including the use of insecticide-treated nets and environmental measures like clearing bushes and stagnant water. However, 20% lacked awareness regarding preventive measures. Identified predisposing risk factors for malaria during pregnancy encompassed poor nutrition, poverty hindering access to balanced diets, unsanitary conditions fostering mosquito breeding sites, and inadequate antenatal care. The study found significant associations between age, occupation, mental state, and education level with knowledge and perception of malaria in pregnancy. Recommendations included government-led health education during antenatal care focusing on malaria causes, prevention, and management of associated complications. Regular medical check-ups before and after delivery were encouraged, along with the consistent use of mosquito nets and other preventive measures against malaria.

Keywords: Malaria in pregnancy, Insecticide-treated mosquito nets, Pregnant mothers, Mosquito, antenatal care.

INTRODUCTION

Malaria remains one of the leading health problems in the developing world especially in Africa and South Asia [1-5]. Some malarial preventive measures include the use of insecticide-impregnated bed nets, indoor residual spraying of insecticides, and clearing of stagnant water and bushes around homes [6-9]. Uganda has made progress in implementing key malaria control measures, in particular distribution of insecticide-impregnated bed nets, indoor residual spraying of insecticides, utilization of artemisinin-based combination therapy to treat uncomplicated malaria, and provision of intermittent preventive therapy for pregnant women [10-15]. The World Health Organization (WHO) guidelines on control

of malaria during pregnancy include prompt and effective case management of malaria combined with prevention of infection by insecticide-treated nets (ITNs) and intermittent preventive treatment in pregnancy (IPTp) [16-19]. Despite this, the uptake is poor [20-24]. Each year approximately 50 million women living in malaria-endemic areas become pregnant and are at risk of the adverse health impact of malaria. Approximately half of them live in sub-Saharan Africa and most of them in areas of intense falciparum transmission [9]. Malaria in humans is caused by intraerythrocytic protozoa of the genus *Plasmodium*. These parasites are transmitted by the bite of an infective female *Anopheles* mosquito [10, 11]. However, increasing success in lowering

the level of malaria transmission in many previously highly endemic areas will result in pregnant mothers acquiring immunity to malaria later in life than has been the case in the past. Thus, it can be anticipated that in the coming years, there will be an increase in the incidence of both uncomplicated and severe malaria in school-age children in many previously highly endemic areas [12]. Pregnant mothers traveling to an area in which malaria is endemic should take steps to prevent malaria, which might include taking one of the recommended chemoprophylaxis regimens appropriate for the region of travel and using personal protection measures to prevent mosquito bites. Any person who has been to a malaria-endemic area and who subsequently develops a fever or influenza-like symptoms should seek medical care immediately and report their travel history to the clinician [13].

The increased susceptibility to malaria in pregnant women has long been recognized. Although some progress has been accomplished in recent years, resulting in the identification of intermittent preventive treatment (IPTp) and insecticide-treated nets (ITNs) as key strategies to control malaria in pregnancy in Africa, much work needs to be done to control malaria effectively in this high at-risk group [9]. There are still many gaps in knowledge that need to be addressed: from the biological mechanism(s) that explains the increased susceptibility of malaria during pregnancy, the most effective control measures in different transmission areas, and the best drugs for case management [9]. However, despite enthusiasm regarding the potential for the elimination of malaria in other areas, there

is no convincing evidence that the burden of malaria has decreased in Uganda in recent years. Major challenges to malaria control in Uganda include very high malaria transmission intensity, inadequate health care resources, a weak health system, inadequate understanding of malaria epidemiology and the impact of control interventions, increasing resistance of parasites to drugs and of mosquitoes to insecticides, inappropriate case management, inadequate utilization of drugs to prevent malaria, and inadequate epidemic preparedness and response [14]. Despite these challenges, prospects for the control of malaria have improved, and with attention to underlying challenges, progress toward the control of malaria in Uganda can be expected. The burden of malaria in Uganda is unacceptably high. Over 90 percent of Uganda is endemic for malaria and the disease is the leading cause of morbidity among pregnant mothers in western Uganda. Malaria is the major contributor to under-five years of age mortality and leads to significant economic losses through reduced productivity expenses in treatment, long-term effects of local school days, anemia in both mother and children and disability [15-18]. Since malaria in pregnancy is one of the foremost public health problems in Uganda, an assessment of the situation of the disease, and communities' knowledge and perceptions about malaria is necessary to institute appropriate preventive and control measures [19]. Hence this study assessed the community's perception regarding malaria in pregnancy among pregnant mothers attending Bitereko Health Center III - Mitooma district and recommends preventive intervention.

METHODOLOGY

Area of Study

The study was carried out at Bitereko Health Center III in Mitooma district.

Study design

A quantitative cross-sectional design was used to conduct the study.

Sampling method

A cross-sectional sampling method was used during the study.

Sample size determination.

The sampling size was calculated by the use of the Fisher *et al.* [20] formula

$$N = \frac{Z^2 PQ}{D^2}$$

Where,

N-desired sample size.

The z-standard normal deviation is taken as 1.96 at a confidential level of 95%.

P-proportion of the target population, estimated to have similar characteristics (where 50% is used if no measurable estimate or 0.5)

Q-is standardized = $1.0 - P$; where P is 0.5, Therefore Q will be, $1.0 - 0.5 = 0.5$ or 50%.

D-degree of error = 0.05 or 5%.

Calculation:

My confidential level was, 79%.

My degree of error was, 10%.

On substitution; If 95% gives 1.96 (standard deviation)

79% gives $(79 \times 1.96) \div 95 = 1.63$ thus my deviation

Degree of error $10/100 = 0.1$.

Thus $N = (1.632 \times 0.5 \times 0.5) \div 0.1^2 = 100$ respondents.

Data collection

Data was collected by the use of questionnaires and writing materials like pens, and paper.

Inclusion criteria

Mothers of childbearing age who are residents of Bitereko Mitooma district who gave consent and were 18 years and above.

Exclusion criteria

- ✓ Mothers who did not consent.

- ✓ Mothers who were not in the study area.

Pre-testing of the questionnaire

Questionnaires were given to a few chosen KIUWC students to assess the acceptability of the data collection tool before administering the questionnaire to the participants. Necessary adjustments were made to ensure adequate data collection.

Data Analysis

Data was collected, tallied, and grouped in the form of tables and pie charts as applicable and appropriate. A scientific software (SPSS) was used to analyze the data.

Ethical consideration

The participants' confidence was obtained by informing them that the information obtained from them was treated with confidentiality and that their consent was valued and given utmost respect. Also, an introductory letter was obtained by the researcher from the administration of Kampala International University Faculty of Medicine and Dentistry which was presented to the relevant authorities in the area of the study.

RESULTS

Age of Respondents

Table 1: Age distribution of the respondents

Age in Years	Number of Respondents	Percentage%
15-24	12	12
25-34	40	40
35-44	24	24
45-54	24	24
TOTAL	100	100

According to the table above, most of the respondents were aged between 25-34(40%), followed by the age range of 35-

44(24%), age of between 45-54, (24%) of the total respondents, while the young mothers within 15-24, (12%).

Level of Education
Table 2: level of education of the respondents

Education Level	Frequency	Percentage (%)
Informal education	16	16
Primary	20	20
Secondary	24	24
Tertiary	40	40
TOTAL	100	100

The table above shows that the majority of the respondents 40(40%) had tertiary status of education, 24(24%) had a secondary school education, 20(20%) had

at least a primary level of education, and finally, 16(16%), Who never had any formal education.

Marital Status

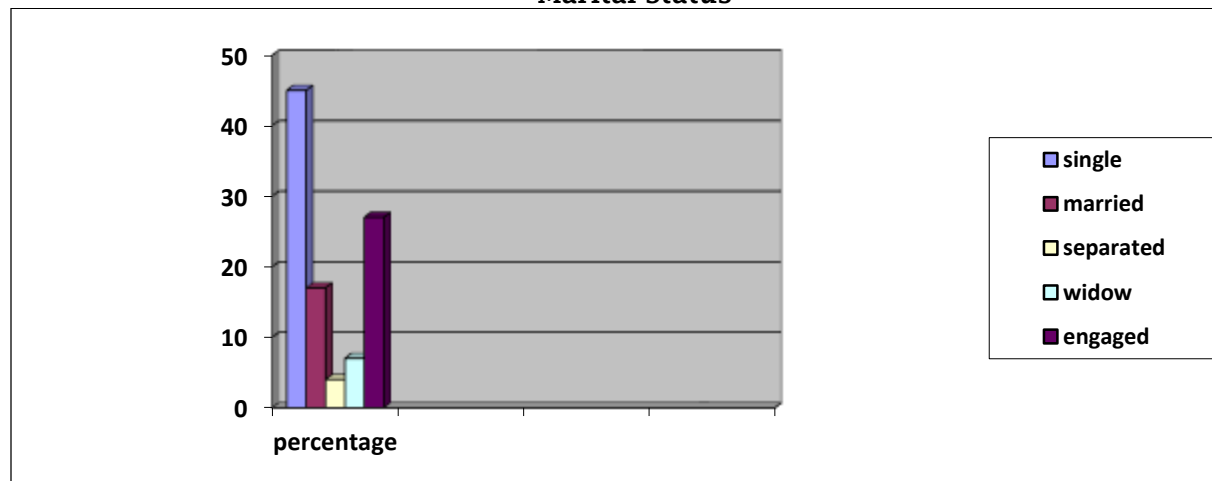


Figure 1: Marital status of the respondents

From the findings, most of the respondents were young females who were single 24(24%) followed by married who

were 40(40%), the other category was the widowed/separated female who was 36(36%).

Occupation of the Respondent

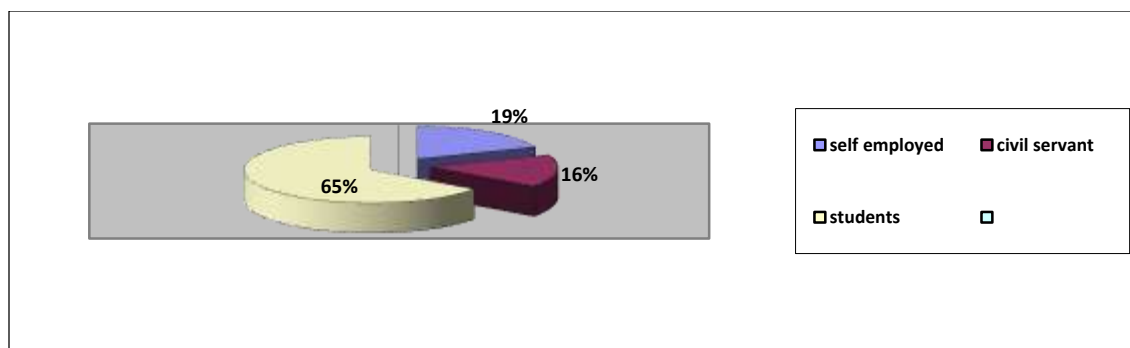


Figure 2: respondent's occupation

Most of the respondents 33(33%) were self-employed followed by 20(20%), employed,

and finally 14(14%) were students who were interviewed.

Religion of Respondents

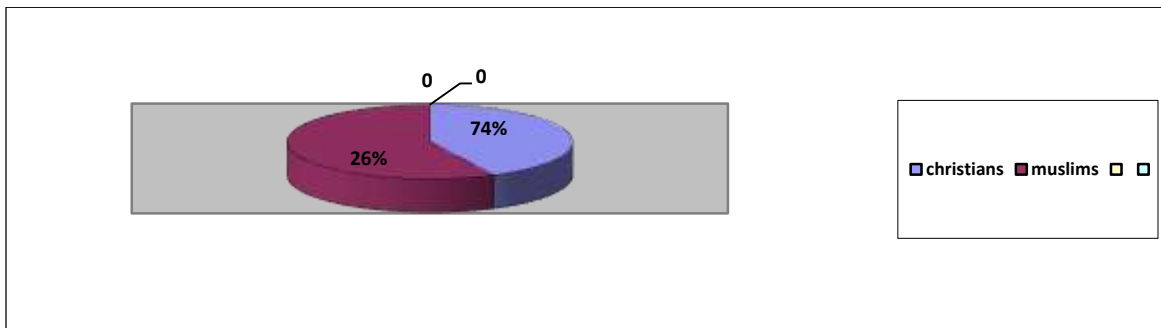


Figure 3: Respondent’s religion

The majority of respondents by religion 74(74%) were Christians while the minority 26(26%) were Muslims.

Knowledge/Awareness of Malaria Preventive Measures.

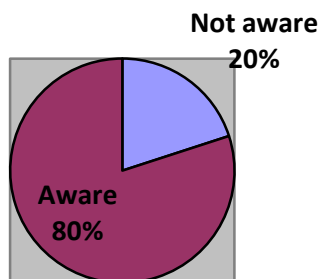


Figure 4: Shows Knowledge/awareness of the malaria preventive measures.

The majority of the respondents 80% had knowledge about malaria preventive measures including the use of Insecticide-treated mosquito nets, clearing nearby

bushes, and draining stagnant water, while 20% of the respondents had no knowledge of prevention barriers.

Knowledge/Awareness of Its Use

Table 4: Distribution of respondents’ awareness on ITNs

Awareness on ITNS	Frequency	Percent (%)
Yes	70	70
No	30	30
Total	100	100.0

The knowledge that malaria can be prevented is nearly universal. Among men and women who know that it can be prevented, 98% cited sleeping under a mosquito net as a way to avoid malaria.

However, only 70% of women are aware while 30% are not aware of intermittent preventive treatment (IPT) as a way to avoid malaria.

Intervention Barriers Used by Community Towards Malaria Prevention
Table 5. Showing the practice of preventing malaria in pregnant mothers.

Practice	Frequency	Percentage
Practice of preventive measures of malaria in children under five years. Examples like using ITNs, clearing bushes, draining stagnant water, and closing windows and doors when still not dark.	80	80
Don't practice.	20	20
Total	100	100

The majority of the respondents 80 (80%) are aware of the causes of malaria in pregnant mothers and know preventive interventions while 20% are not aware of

intervention measures, giving examples such as using ITNs, clearing bushes around the homes, and draining stagnant waters among other methods.

Occurrence of Type of Malaria Complications Among Pregnant Mothers.

Table 6. Respondent by malaria complication in pregnancy.

Conditions	Frequency	Percentage (%)
Maternal anemia	38	38
Spontaneous abortion	22	22
Stillbirth	21	21
Prematurity and low birth weight	20	20
Total	100	100

The table above shows the distribution occurrence of health conditions in pregnant mothers who attended the Hospital, during the period of research shows the occurrence of obstetric factors

associated with malaria in pregnancy includes maternal anemia 38(38%), spontaneous abortion 22(22%), stillbirth 21(21%), and prematurity and low birth weight 20(20%).

DISCUSSION

According to the study findings, respondents by age indicates that the majority of respondents 40(40%) were between the ages of 25 to 34 years of age because this is the age which is reproductively active, and most of them are pre-exposed to malaria and its complications as a result of not using malaria preventive measures. Then 35 to 44 years were 24(24%) and lastly, age of between 15 and 24 most of them were not married. The respondents by sex indicated

that all respondents were females, 100 (100%) who attend Biteroki Health Center III in Mitooma district. Respondents by education level shows that most of the respondents 40(40%) had tertiary education which shows that at least they have ever heard of malaria preventive barriers in pregnant mothers and the causes and complications of malaria in pregnant mothers in pregnancy, and management, followed by 24(24%) who had secondary education, which shows that

they had some knowledge on anemia and its complications, primary level of education were 20(20%), and finally without formal education were 16(16%) which means that they have no knowledge on malaria preventive barriers. Respondents by occupation show that the majority of respondents 33(33%) were self-employed followed by employed 20(20%) and 14(14%) were students who have knowledge of malaria preventive barriers and causes and complications of malaria in pregnant mothers. Respondents by religion show that most of the respondents 74(74%) were Christians, followed by 26(26%) of the respondent were Muslims. This shows that most of the residents are Christians who are either pre-exposed to

Annah malaria due to not using malaria preventive barriers. Therefore, this leads to malaria in pregnancy or its complications, or are victims of complications of malaria in pregnancy. Malaria complications mostly occurred in pregnant mothers included maternal anemia 38(38%), spontaneous abortion 22(22%), still birth 21(21%), and prematurity and low birth weight 20(20%). Other health conditions in pregnant mothers, followed by diarrheal diseases 40(40%), because this is the rainy season and most mothers cannot afford the use of mosquito nets and hence exposed to malaria, then tuberculosis 8(8%) and finally others 12(12%), others like malnutrition, ulcers.

CONCLUSION

The majority of the respondents 80% had knowledge about malaria preventive measures including the use of Insecticide-treated mosquito nets, clearing nearby bushes, and draining stagnant water, while 20% of the respondents had no knowledge of prevention barriers. They mention some of the predisposing risk factors of malaria in pregnancy;

- ✓ Poor nutritional status.
- ✓ Poverty, no money to buy nutritionally balanced foods.
- ✓ Poor sanitary leading to mosquito breeding sites.
- ✓ Lack of regular medical check-ups in both ANC.

Recommendation

- ✚ The government should encourage health education on the causes prevention and control of malaria in pregnancy and its complications during antenatal clinic.
- ✚ People should be medically checked regularly before and after delivery.
- ✚ People should use mosquito nets.
- ✚ People should use malaria preventive barriers.
- ✚ Eradicate poverty by the government.

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