**KNOWLEDGE AND PRACTICE OF CARETAKERS IN PREVENTION OF MALARIA AMONG UNDER-FIVE YEAR OLD CHILDREN**

**AT LUWERO DISTRICT HOSPITAL, UGANDA**

**INSHUTIYAYEZU JOEL**

**19/BNS/BU/R/0006**

**BACHELOR’S DEGREE IN NURSING OF BUGEMA UNIVERSITY**

**MAY 2023**

**KNOWLEDGE AND PRACTICE OF CARETAKERS IN PREVENTION OF MALARIA AMONG UNDER-FIVE YEAR OLD CHILDREN**

**AT LUWERO DISTRICT HOSPITAL, UGANDA**

**INSHUTIYAYEZU JOEL**

**19/BNS/BU/R/0006**

**A Research Project Submitted to the School of Nursing and Midwifery in Partial Fulfillment of the Requirements for the Award of a Bachelor’s Degree in**

**Nursing of Bugema University**

**MAY 2023**

# ACCEPTANCE SHEET

This Research Project Entitled “**KNOWLEDGE AND PRACTICE OF CARETAKERS IN PREVENTION OF MALARIA AMONG UNDER-FIVE YEAR OLD CHILDREN AT LUWERO DISTRICT HOSPITAL, UGANDA**" was Prepared by **INSHUTIYAYEZU JOEL**, in Partial Fulfilment for the Award of Bachelor Science in Nursing is here by Accepted

Sign. ..............

Mrs. Muganga Harriet

Supervisor

..................

Date signed

Accepted In Partial Fulfilment for the Award of Bachelor of Science in Nursing of Bugema University

Sign................

Madam Nakimuli Jackline

Head, Department of Nursing and Midwifery

.................

Date signed

Sign………………….

Michael Wolwa, M.D, MPH

Dean, School of Health Sciences

...................

Date signed

# DECLARATION

I **INSHUTIYAYEZU JOEL**, hereby certify that this research on “**KNOWLEDGE AND PRACTICE OF CARETAKERS IN PREVENTION OF MALARIA AMONG UNDER-FIVE YEAR OLD CHILDREN AT LUWERO DISTRICT HOSPITAL, UGANDA**” is my original work and has never been submitted to any university or higher institution of learning.

|  |  |  |
| --- | --- | --- |
| **NAME** | **Signature** | **Date Signed** |
| INSHUTIYAYEZU JOEL | …………………….. | …………………… |

# 

# DEDICATION

I **INSHUTIYAYEZU JOEL** dedicate this research on “**KNOWLEDGE AND PRACTICE OF CARETAKERS IN PREVENTION OF MALARIA AMONG UNDER-FIVE YEAR OLD CHILDREN AT LUWERO DISTRICT HOSPITAL, UGANDA**” to many nursing students we have had the privilege of assisting along their professional path.

My parents Mr. & Mrs. Uwihoreye Faustin. Nyirandorero Felicite, sister Nzitukuze Jeanne D’arc, friends and relatives for their endless support throughout the research and educational sessions.

# ACKNOWLEGEMENT

I **INSHUTIYAYEZU JOEL** want to thank the Almighty God with praises and honor for granting me the gift of life and for continuously guiding me in this academic journey involving research up to this time. in addition, I acknowledge WINDLE INTERNATIONAL UGANDA, DAFI and UNHCR at large, that sponsored all my educational requirements throughout the entire time at the university studies. I also extend my sincere appreciation to the school of health sciences for their endless support. And in a very special way my sincere appreciation goes to my motivating supervisor, Madam Muganga Harriet, the Dean of Health Science Mr. Michael Wolwa, and Head of Department Madam Jackline Nakimuli and all the staffs’ members in the school of Health Sciences and Bugema university at large.

**TABLE OF CONTENTS**

[ACCEPTANCE SHEET i](#_Toc132326296)

[DECLARATION ii](#_Toc132326296)

[DEDICATION iii](#_Toc132326297)

[ACKNOWLEGEMENT iv](#_Toc132326298)

[TABLE OF CONTENTS v](#_Toc132326299)

[LIST OF ABREVIATIONS viii](#_Toc132326300)

[ABSTRACT ix](#_Toc132326301)

[CHAPTER 1. INTRODUCTION 1](#_Toc132326302)

[Background of the Study 1](#_Toc132326303)

[Statement of the problem 4](#_Toc132326304)

[Research Questions 5](#_Toc132326305)

[General Objective 6](#_Toc132326306)

[Specific Objectives 6](#_Toc132326307)

[Scope of the Study 6](#_Toc132326308)

[Significance of the Study 6](#_Toc132326309)

[Theoretical Framework 7](#_Toc132326310)

[Conceptual Framework 8](#_Toc132326311)

[Operational Definition of Terms 9](#_Toc132326312)

[CHAPTER 2. LITERATURE REVIEW 10](#_Toc132326313)

[Introduction 10](#_Toc132326314)

[Knowledge of Caretakers on the Prevention of Malaria in Children Under Five Years 10](#_Toc132326315)

[Practices of Caretakers on the Prevention of Malaria in Children Under Five Years. 12](#_Toc132326316)

[CHAPTER THREE 15](#_Toc132326317)

[RESEARCH METHODOLOGY 15](#_Toc132326318)

[Introduction 15](#_Toc132326319)

[Study Setting 15](#_Toc132326321)

[Research Design 15](#_Toc132326323)

[Target Population 16](#_Toc132326324)

[Eligibility Criteria 16](#_Toc132326325)

[Inclusion Criteria 16](#_Toc132326326)

[Exclusion Criteria 16](#_Toc132326327)

[Sample Size Determination 16](#_Toc132326328)

[Sampling Technique 17](#_Toc132326329)

[Data Collection Instruments 17](#_Toc132326330)

[Validity of the Instruments 18](#_Toc132326332)

[Reliability of the Instruments 18](#_Toc132326336)

[Ethical consideration 19](#_Toc132326337)

[Data Editing, Processing and Tabulation 19](#_Toc132326338)

[Data Analysis 20](#_Toc132326340)

[CHAPTER FOUR 21](#_Toc132326342)

[RESULTS AND DISCUSSION 21](#_Toc132326343)

[Respondents Demographic Information 21](#_Toc132326344)

[The Knowledge Level about Malaria Prevention among Mothers of Children Aged Under Five Years Attending Luweero District Hospital 23](#_Toc132326345)

[The Practices towards Malaria Prevention among Mothers of Children Aged under Five Years Attending Luweero district Hospital 25](#_Toc132326346)

[Association between Knowledge, Practices on Malaria Prevention among Mothers of Children Aged Under Five Years Attending Luweero 27](#_Toc132326347)

[CHAPTER FIVE 29](#_Toc132326349)

[SUMMARY, CONCLUSION AND RECOMMENDATION 29](#_Toc132326350)

[Summary 29](#_Toc132326351)

[Key Findings 30](#_Toc132326352)

[Conclusion 30](#_Toc132326353)

[Recommendations 31](#_Toc132326354)

[REFERENCES 32](#_Toc132326355)

[APPENDIX I: CONSENT FORM 33](#_Toc132326356)

[APPENDIX II: QUESTONNAIRE 34](#_Toc132326359)

# LIST OF ABREVIATIONS

ITNs: Insecticides Treated Nets

NMCP: National Malaria Control Programme

IRS: Indoor residual spraying

HH: Household

SBC: Social and Behavioral Change

UCC: Universal coverage campaign

ICCM: Integrated Community Case Management

IMCI: Integrated Management of Childhood Illness

RDT: Rapid diagnostic tests

LLINs: Long-lasting insecticidal nets

WHO: World health organization

MOH: Ministry of public health

SPSS: Statistical package for the social science

GK: Good knowledge

GP: Good practices

BCC: behavioral change communication

USA: united States of America

UK: United Kingdom

UNICEF: United Nations Children’s Fund

# ABSTRACT

**INSHUTIYAYEZU JOEL,** School of Health Sciences, Bugema University Kampala Uganda, April 2023,“**KNOWLEDGE AND PRACTICE OF CARETAKERS IN PREVENTION OF MALARIA AMONG UNDER-FIVE YEAR OLD CHILDREN AT LUWERO DISTRICT HOSPITAL, UGANDA**.”

**Supervisor: MUGANGA HARRIET, MA**

The specific study objectives of the study were; to investigate the knowledge level about malaria prevention among mothers of children aged under five years attending Luweero district Hospital, to assess the practices towards malaria prevention among mothers of children aged under five years attending Luweero district Hospital, and to determine the association between knowledge, practices on malaria prevention.

The study applied descriptive and correlational research designs guided by quantitative and qualitative data collection approaches were used. among mothers of children aged under five years attending Luweero district Hospital. Data was gathered randomly from 77 respondents out of a sample size of 82 persons (representing 93.9% response rate) with a self-administered questionnaire.

Based on the knowledge level about malaria prevention, results generated an average of 64.9% of the mothers being knowledgeable about what malaria is, what causes malaria, malaria symptoms, malaria treatment.

In terms of the practices towards malaria prevention among mothers, findings on help of witch doctors for malaria treatment generated (Mean=2.05, S.D=0.724), on taking child to hospital for treatment generated (Mean=2.90, S.D=0.680), and not using traditional medicine generated (Mean=2.12, S.D=0.858).

In relation to the association between knowledge, practice; results show that malaria knowledge contributed to malaria prevention by 27.3% (beta=0.273, P=0.017<0.05); while malaria control practices influenced malaria prevention by 31.1% (beta=0.311, P=0.000<0.05) whereby the relationship was statistically significant at 5%.

It was recommended that; government under the ministry of health should invest more time, funds and expertise in ensuring that mothers get more knowledge about malaria, its causes, prevention practices and treatment.

# CHAPTER 1. INTRODUCTION

# Background of the Study

Malaria is a mosquito-borne infectious disease that affects humans and other animals (Caraballo, and King, 2014). Malaria causes symptoms that typically include fever, tiredness, vomiting, and headaches, which in severe cases, it can cause jaundice, seizures, coma, or death (Dahalan, Churcher, Windbichler, and Lawniczak, 2019).

The WHO [Global technical strategy for malaria 2016-2030](https://www.who.int/publications/i/item/9789241564991)adopted by the World Health Assembly in May 2015 provides a technical framework for all malaria-endemic countries and indicates that caretakers, who include parents and relatives of children under five years play a great role towards malaria prevention and control. As a result, the government empowered caretakers towards malaria control through distribution of nets, capacity building through workshops and seminars for caretakers and parents to learn on how to prevent malaria. This Strategy was the result of an extensive consultative process that spanned 2 years and involved the participation of more than 400 technical experts from 70 Member States (WHO, 2020).

But despite the malaria control strategy or practice, malaria still occurs mostly in poor tropical and subtropical areas of the world including the United States of America. In many of the countries affected by malaria, it is a leading cause of illness and death of children under five years. In areas with high transmission, the most vulnerable groups are young children, who have not developed immunity to malaria yet, and pregnant women, whose immunity has been decreased by pregnancy. The costs of malaria – to individuals, families, communities, nations – are enormous (Bomblies, 2014).

Asian countries such as Vietnam have reduced death of people especial pregnant mothers and children under five years from malaria through the introduction of treated mosquito nets and spraying of bushes as well as stagnated areas with households (WHO, 2015). In the early 1990s, the government of Vietnam began a concerted effort to control malaria through the provision of free insecticide-treated bed nets, the promotion of indoor spraying with insecticides, and the use of locally produced antimalarial drugs. From 1992 to 1997 the death toll from malaria dropped by 97 percent, and the number of malaria cases fell by almost 60 percent, according to the WHO. These actions required major investments in training, disease reporting systems, supervision, and volunteer health workers (WHO, 2015).

In South Africa, children under five years belongs to a susceptible group who needs special attention and care during health and illness, which imposes equal responsibility to the mothers and medical personnel (UNICEF, 2008). The malaria control programme (MCP) was established in order to direct and guide the day to day implementation of the national malaria control strategy (Danielle Roberts and Glenda Matthews 2016). Monitor understandings continuously for the purpose of elimination targets, and their perceptions that influence utilization of malaria preventive measures.

In accordance with global malaria elimination program (2016-2030), most of East African countries has also given a considerable attention to malaria elimination program. Improving local community understandings of malaria and use of preventive strategies are among the key priority intervention area for sustained control and the move towards elimination targets. Uganda long lasting insecticidal treated net (LLIN) is one of key national malaria control strategies and the national target sets at 100% coverage of all households (HH) in malaria’s areas like Luwero community with at least two LLINs per household and reach 86% LLIN use among vulnerable groups by 2023. It is recommended that every suspected malaria case needs to be confirmed either by microscopy or rapid diagnostic test (RDT) before treatment is initiated. VHTs are able to diagnose after being introduced the RDTs.

Uganda has been in the leading role in the efforts to prevent its citizens from malaria whereby mothers of under five children of age as well as other family members are given mosquito nets at the health facility. Such mothers have been empowered with knowledge about malaria prevention and treatment and they have been trained on the best practices towards malaria prevention (MoH, 2019). Thus, the insecticide-treated nets (ITNs) and long lasting insecticidal nets (LLINs) continues to be distributed free of charge and indoor residual spraying (IRS) is being carried out in a limited number of districts including Luwero where malaria transmission is very high. The reduction of child mortality is accelerated by the efforts of the integrated community case management (ICCM), which is part of the government’s integrated management of childhood illness (IMCI) strategy (MoH, 2019). These strategies involve village health teams (VHTs) offering curative treatments for malaria at community level, which assist in ensuring early diagnosis and treatment. There are two rainy seasons in Uganda per year, with heavy rains from March to May, light rains between September and December. The peak incidence of clinical malaria follows the peak of the rains with a delay of about 4-6 weeks, therefore most cases are seen between December, February, May and July. Due to the regular rainfall, the southwest and central regions where Luwero district is also located are rich in vegetation and fertile soil resulting in high population densities. Thus 87.9% of the population is exposed from moderate to very high malaria transmission (Kimbi, 2014).

However, despite the fact that previous studies elsewhere (Bomblies, 2014, and Kimbi, 2014) have indicated that knowledge and practices of mothers of under-five aged children determines malaria prevention, it is not yet researched to confirm whether and how knowledge and practices of caretakers influence prevention of malaria among under five year aged children in Luweero District Hospital; though there is a perception that mothers and other child caretakers may be having limited knowledge and practices towards malaria prevention which could be the reason for the increasing malaria prevalence among children aged under five years of age. It was this knowledge gap that the researcher was motivated to carry out this study and assess caretakers’ knowledge and practices on malaria prevention among under five aged children in Luweero District Hospital.

# Statement of the problem

Uganda comes as the third (3rd) in the total number of malaria cases in sub-Saharan Africa. It continues to lead the cause of morbidity in Uganda with 90-95% of the population at risk whereby approximately 13% of the under-five (5) years mortality also contribute. In Luweero District, 40% of the children aged five years and below tested for malaria are found to be infected by the disease. Though efforts have been put in place by the government to prevent the spread of malaria among children, the trend is still high with 40% of children under the age of 5 years being at risk of contacting the deadly disease (Luweero District Health Survey, 2017).

Based on the statistics from unpublished report from Luweero District Hospital Child Health Record (2017-2021) shows that 84 children contracted malaria in 2017, 87 children under five years in 2018, 92 children infected in 2019, 98 children recorded in 2020 and 103 children suffered from malaria in 2021, with current data for 2022 not yet compiled. The trend in malaria infection among children aged five years and below is on the rise since 2017 and if something is not done to combat such a trend, the rate of child mortality, high medical expenses, depression and other problems associated with child sickness will prevail.

However, since previous studies (Bomblies, 2014, and Kimbi, 2014) have indicated that knowledge and practices of mothers of under-five aged children determines malaria prevention, this is yet to be confirmed in research in Luweero District Hospital. It was this knowledge gap that the researcher was motivated to carry out this study and assess caretakers’ knowledge and practices on malaria prevention among under five aged children in Luweero District Hospital.

# Research Questions

1. What is the knowledge level about malaria prevention among mothers of children aged under five years attending Luweero district Hospital?
2. What are the practices towards malaria prevention among mothers of children aged under five years attending Luweero district Hospital?
3. What is the association between knowledge, & practices on malaria prevention among mothers of children aged under five years attending Luweero district Hospital?

**General Objective**

The main purpose of this study was to assess the knowledge and practice of caretakers in prevention of malaria among under-five years children at Luwero district Hospital, Uganda.

**Specific Objectives**

1. To investigate the knowledge level about malaria prevention among mothers of children aged under five years attending Luweero district Hospital.
2. To assess the practices towards malaria prevention among mothers of children aged under five years attending Luweero district Hospital.
3. To determine the association between knowledge, & practices on malaria prevention among mothers of children aged under five years attending Luweero district Hospital.

**Hypothesis of the Study**

There is no significant association between knowledge, & practices on malaria prevention among mothers of children aged under five years attending Luweero district Hospital.

# Scope of the Study

The main purpose of this study was to assess the knowledge and practice of caretakers in prevention of malaria amongst under-five year children at Luwero District Hospital, Uganda. This study was carried out from May 2022 to May 2023.

# Significance of the Study

**Caretakers and Family Members of the child**: This study will provide the caretakers with the valuable information they need in prevention of malaria in children under five years of age.

**To Policy Makers**: This study will also enable policy makers gain better insight on the knowledge and practices of the caretakers towards prevention of malaria in children under five years and will enable them evaluate on-going or completed programmes on prevention of malaria. This information obtained from this study will be of importance in updating reports on towards prevention of malaria in children under five by ministry of health.

**Other researchers and scholars**: This study will also act as the guideline and source of information for other nursing researcher. This study will increase knowledge needs on the already known facts about prevention of malaria in children among under five years old.

**To Nurses and nursing students**: Findings of this study will equip nurses and nursing students with vital information which they can incorporate in their day-to-day service provision to children aged under five years by ensuring that the caretakers are knowledgeable enough and apply the best practices to prevent malaria.

# Theoretical Framework

This study was under Nola Pender’s promotion model which was originally published in 1892 and later improved in 1996 and 2002. The health promotion model was designed to be a complementary counterpart to models of health protection. The model helps us to emphasize adequate knowledge to care givers of children about malaria and its mode of transmission. This theory also talked about nursing actions how they help in modifying behavioural variables like the way health-promoting behaviour become the desired behavioural outcome and is the end point in the health promotion model, for instance behaviour change communication (BCC) strategies. Pender’s health promotion model, promote health and prevent disease that can be more easily be carried out in the community than programs which aim to cure disease conditions. We can either do further education on the implementation of the preventive methods, knew that mosquito bite can cause malaria, use of long-lasting insecticide treated nets (LLINs), among other methods. Nola J. Pender also said that health promotion and disease prevention should focus on healthcare. By the time health promotion and prevention fail to anticipate predicaments and problems, care in illness becomes the subsequent priority. This model will be applied in this study to assess knowledge and practice of caretakers in prevention of malaria among children under five years by exploring barriers and benefits they perceive to result from different actions that lead to it.

# Conceptual Framework

This conceptual framework below shows the relationship between the independent and dependant variables. The dependant variable was prevention of malaria among under five and the independent variables were the knowledge and practices of caretakers.

**Independent variables; dependent variables;**

Practice of caretakers on;

* Treated mosquito net
* Treatment and Tests of Malaria
* Role of traditional medecine

Prevention of malaria among under five years children

* Low infection rate
* High infection rate

**Knowledge of caretakers on;**

* About Malaria
* Prevention of malaria
* Transmission of malaria
* Spread of malaria

**Figure 1: a conceptual framework, Source: Bomblies, 2014**

Based on the conceptual framework, it is evident that knowledge and practices can influence the prevention level of malaria among under five years in the community. However, malaria prevention will be determined or measured through either low infection rate or high infection rate.

# Operational Definition of Terms

**Malaria:** This refers to a disease which is caused by a female mosquito.

**Knowledge:** In this study, it refers to the ability of mothers and caregivers to know how to prevent malaria among under fiver year old children in Luweero District.

**Practices:** In this study, it refers to the actions taken by mothers and caregivers towards prevention of malaria among under fiver year old children in Luweero District.

**Prevention of malaria**: In this study, it refers to the control or stopping the spread of malaria by mothers and caregivers among under fiver year old children in Luweero District.

# 

**CHAPTER 2. LITERATURE REVIEW**

# Introduction

This chapter discusses the research findings of other researcher on knowledge and practices of caretakers towards prevention of malaria in children under five years. This involved examining literature from significant sources such as textbooks, magazines, journals, dissertations and use of data bases like PubMed and Google scholar. These were discussed as per the objectives of the research study.

# knowledge of caretakers on prevention of malaria

# Knowledge about Malaria

Having a good understanding on what malaria is, how it present, what causes it and how it occur is very much important in it prevention in children under five years therefore care takers ought to be more knowledgeable (Berzosa , et al., 2016). This study done in Bata district Equatorial Guinea to assess caregivers’ malaria knowledge, beliefs, attitudes and related factors and concerns of 440 houses selected from 18 rural villages and 26 urban neighbourhoods. Significant differences between rural and urban households were observed in caregivers’ malaria knowledge and beliefs as a result of 42% of urban and 65% of rural caregivers were unaware as to how malaria is transmitted.

A study conducted in Tamale, northern region of Ghana about knowledge and skills of mothers/care givers of children under five years in communities with home-based management of malaria, involved 400 families and mothers/care givers with children less than five years who were selected randomly and represented urban, peri-urban and rural settings; more than 90% of respondents identified malaria by presence of fever while 57.5% used fever as a cardinal sign. Ninety-one per cent of participants sought early treatment in urban and peri-urban setting while 85% did so in rural sites. Fifty-five per cent of participants administered the correct doses daily but only 17% of them knew the side effects of antimalarial medications used (Mukaila. et al., 2013).

**Knowledge about Prevention of Malaria**

In a study done in Ethiopia that assessed caretakers’ knowledge on malaria prevention, use of long-lasting insecticide treated nets (LLINs) and care seeking behaviour for their children’s illness in different malaria transmission settings, shown that in 709 caretakers of children of 2-9 years of age in 2016, The caretakers recognized malaria mostly by chills (70.4%, 499/709, fever (45.7%, 324/709), and headache (39.8%, 282/709). Overall, only 66,4% (471) of the caretakers knew that mosquito bite caused malaria, majority of 72.2% (512), of the caretakers knew that sleeping under LLIN could prevent malaria (Zewdie et al., 2017).

Another study done in Yewa south local government area of Nigeria assessed mothers’ care givers’ knowledge, attitude and practices in prevention and treatment of childhood malaria, the study employed a cross sectional design. 330 mother-child pairs were recruited for the study through multi-stage sampling method, the result showed that symptoms of uncomplicated malaria headache (67%), body weakness (50.9%), fever (44.2%), and 92.7% reported mosquito bite as the cause of malaria with 90.7% considered it as serious illness (Adewole. 2015).

**Knowledge on Transmission of Malaria**

In Uganda according to the study done to assess malaria related knowledge, and practices among primary caregivers, whereby children aged 6 months to 5 years living in Kampala, Uganda were enrolled as 307 children were interviewed and information was collected. Here a total of 90% of respondents reported mosquitoes and/or malaria as the cause of fever and care givers reported that if their child had fever, 63% would go to a clinic or hospital as their first action and 97% as their first or second action. Only 38% knew that chloroquine was the recommended first-line treatment for malaria and 29% knew the correct dose and preventive measures for malaria were reported in 45% of households but only25% reported using bed nets (Denise et al., 2003).

# Practices of Caretakers on the Prevention of Malaria

**Use of Treated Mosquito Nets**

The study that was done in Hainan china in eliminating plasmodium falciparum on the use of behavioural change communication (BCC) intervention to promote malaria prevention in mountain worker populations showed that the accuracy rate in the aspect of malaria-related practices increased from 43.04% to 92.25% which means that the frequency use of treated mosquito nets significantly improved the ability of caregivers including parents and relatives of children under five years to avoid malarial infection ( Chang-hua he et al.,2014).

In Africa, a study that was done among 2449 children aged 6 to 59 months in Ghana to investigates the association with use of large-scale malaria interventions such as: indoor residual spraying (IRS), insecticides treated bed nets (ITN), and behaviour change communication (BCC) strategies and prevention of malaria among under five who were tested for malaria, through rapid diagnostic test ( RDT) showed that the odds of malaria infection among children who sleep in IRS is significantly lower (odds ratio (OR)=0.312; 95%) compared to those who are not protected. This association was even high (OR = 0.372; 95%) among children in poor households protected by IRS compared to those who have no IRS protection, for ITN use for such children, the odds of malaria infection are significantly lower (OR)=0.545; 95%) compared to those who are not protected, regarding BCC strategies they found that malaria education through television is the best strategy to convey malaria education as it is significantly reduces the odds of malaria infection ( OR= 0.715; 95%) compared to those who do not received malaria education via television ( Clifford afoakwah et al., 2018).

**Treatment and Test for Malaria**

In a cross-sectional study in malaria-endemic areas of rural Myanmar on caregivers’ treatment-seeking behaviour for children under age five which was conducted in 23 mobile clinic village ( MV) and non-mobile clinic villages (NMV) showed that in among 597 participants in both types of both villages, 166 (35.3%) caregivers sought appropriate treatment-seeking behaviour was found between the two types of villages this shows that caregivers treatment seeking behaviour was poor for fever cases among children under age five, and did not differ significantly between MV and NMV (Thandar., 2015).

In a cross-sectional study conducted in Uganda, Bugiri District interviewing 451 heads of households in a 411,250 population, showed that 20.2% of the communities took prompt action to treat children but 51.7% consulted health workers (HW) and sources of treatment were drug shops (48.1%) and health units (42.4%) and very few herbalists. Few cases (7.8%) were referred to higher level. in the health units HW treated 65.7% of ill children with anti-malarial and caretakers gave anti-malaria to only 39.4% at home. According to WHO guidelines in home management, caretakers would treat 95.6% of illnesses with anti-malarial; an excess of 29.9% over HW. Although larger proportions (56.4%) of caretakers gave anti-malarial for treating any fever. 36.8% recognized chloroquine as anti-malarial but chloroquine dose was used in 6.7% (Michael oryema et al., 2009).

**Role of traditional medecine**

Another study that was conducted in endemic rural communities in south west Uganda, about treatment-seeking and uptake of malaria prevention strategies among pregnant women and caregivers of children under-five years during COVID-19 pandemic showed that in 72 participants were enrolled in the focus group discussions, 12 in the in-depth interviews, and 2 as key informants. Pregnant women and caregivers of children under-five years were able to recognize causes of malaria, transmission, and symptoms. All participants viewed malaria prevention as a high priority, and the use of insecticide- treated mosquito bed nets (ITNs) was upheld. In addition, participants own experiences indicated adverse effects of malaria to both pregnant women and children under-five, also home medication the use of local herbs were a common practice. The corona virus disease-2019 (covid-19) control measures did not abate the risk of malaria infection but these were deleteriorus to healthcare access and the focus of malaria prevention. Although pregnant women and caregivers of children under-five years recognized symptoms of malaria infection, healthcare-seeking was not as some respondent used alternative approaches and delayed seeking formal healthcare. They also concluded that it is imperative to focus on the promotion of malaria prevention strategies and address drawbacks associated with misconceptions about these interventions, and promotion of health-seeking behaviours. As COVID-19 exacerbated the effect of malaria prevention uptake and healthcare seeking, it’s critical to recommit and integrate COVID-19 prevention measures in normative living and restrict future barriers to healthcare access (Taremwa et al., February 2022).

# CHAPTER THREE

# RESEARCH METHODOLOGY

# Introduction

This chapter described methodologies followed in carrying out this study. These methodologies include; locale of the study, research design, study population, target population, sample size selection, sampling technique, data collection instruments and tools, validity of the instruments, reliability of the instruments, ethical consideration, and data analysis.

# Study Setting

This study was carried out in Luweero District Hospital. The hospital is located in Luwero district, central Uganda, Uganda, East Africa, Africa and is approximately 62 kilometres (39 mi), by road, north of Kampala, Uganda’s capital and largest city, on the highway to Masindi.

# Research Design

A research design explained when, where and how information was collected and analyzed (Parahoo, 2009). This study, used a descriptive and Correlational research designs employing quantitative and qualitative data collection approaches. Descriptive design was used to show findings on the demographic characteristics, knowledge and practices of mothers towards malaria prevention, Correlational research design was used to show the relationship between research variables. The qualitative approach was used to get respondents suggestions, The quantitative approach was used to obtain quantifiable data which was converted into mean and standard deviation reflecting the prevalence level, accelerating factors and malaria control practices among children under five years in Luweero District Hospital.

# Target Population

The study targeted care takers of children aged five years and below attending Child care clinic and pediatric wing of Luweero District Hospital where by on average, the Hospital receives 103 children per week (Luweero District Hospital Child Health Record, 2017-2021). Therefore, since the study considered collecting data within a period of one week, the researcher intend to target 103 care takers. This population of mothers/caretakers acted as the unit of inquiry whereby they answered a questionnaire.

# Eligibility Criteria

# Inclusion Criteria

All caretakers who attended maternal child care clinic and pediatric out at Luweero Hospital was included in the study. Caretakers who were consented and accepted to respond to the questionnaire was considered in the study.

# Exclusion Criteria

All caretakers who did not attend maternal child care clinic and pediatric out at Luweero district Hospital was excluded in the study. Caretakers who did not consent and accept to respond to the questionnaire was not considered in the study.

# Sample Size Determination

The following mathematical formula by Taro Yamane (1970) was used to determine the sample size.

Where; N = total population [103]

n= total sample size.

E= desired margin error [0.05]

# Sampling Technique

This study applied convenient and random sampling techniques. Thus, the researcher collected data only from caregivers/parents with children aged under five years but visiting Luweero Hospital. Random sampling was attained through a literary approach by writing numbers on papers from 1-103, folded them and placed in an empty box. Mothers who picked papers indicated numbers 1-82 participated in the study by answering the questionnaire. The researcher visited the hospital and administer the questionnaire to the mothers during their clinic visitation day per week.

# Data Collection Instruments

A questionnaire method was suitable for this study since it helped in gathering both quantitative and qualitative data. In addition, a questionnaire was easy to make, saved time during data collection and it was cheap to print. Thus, this study used a questionnaire, which consisted of a set of well formulated questions to probe and obtain responses from respondents. The questionnaire consisted of four parts. part 1 questions on personal information; part 2 on impacts, part 3 on suggestions and part 4 was about diagnosis of malaria. Closed-ended questions was guided by a four-point Likert scale of; 4. Strongly agree, 3. Agree, 2. Disagree and 1. Strongly disagree.

**Table 1**: **Showing the operationalized Likert Scale**

|  |  |  |  |
| --- | --- | --- | --- |
| **Scale** | **Mean Range** | **Response Mode** | **Interpretation** |
| 4 | 3.25-4.00 | Strongly Agree | Very High |
| 3 | 2.50-3.24 | Agree | High |
| 2 | 1.75-2.49 | Disagree | Low |
| 1 | 1.00-1.74 | Strongly Disagree | Very Low |

# 

# Validity of the Instruments

The researcher first formulated a questionnaire according to the study objectives and present it to the supervisor and other research experts to check on the validity of the instrument for clarity of items in the questionnaire. The researcher formulated the conceptual framework basing on the study objectives. To ascertain this, the content validity index (C.V.I) was computed using the formula below. If the C.V.I was found to be **0.70** and above, the instrument was considered valid (Amin, 2005).

# Reliability of the Instruments

To ensure consistency and accuracy, the researcher pre-tested using 20 questionnaires administered to mothers with children under five years from Luwero District Hospital located in Luwero District. The researcher used statistical package for social scientists (SPSS) in which, Cronbach’s alpha scale recommends a coefficient of 0.7 and above as an adequate measure of internal consistency for the instrument to considered reliable (Cooper & Schindler, 2006).

**Table 2. reliability analysis**

|  |  |
| --- | --- |
| Cronbach’s alpha | Number of items |
| 0.90 | 9 |

# Ethical consideration

A letter of introduction was obtained from Bugema University which introduced the researcher to Luweero District Hospital Director from whom the permission to carry out the study was obtained. The researcher attached consent form in each questionnaire for the respondents to evaluate and those who was convinced on the purpose of the study was answering the questionnaire with a willing consent attached. Strict confidentiality of all information received was assured to the respondents. The researcher observed all set COVID 19 control measures.

# Data Editing, Processing and Tabulation

Data processing consisted of editing, coding and tabulation of data with the aim of preparing it before it was analyzed, interpreted and discussed. Through editing, the raw data was evaluated to eliminate errors. Coding involved a process of assigning numerals or other symbols to answers so that responses to put them into limited number of classes and categories. Tabulation involved the data being arranged in logical order for the purpose of statistical analysis and was done by the researcher after sorting the data and knew the number of tables required, the data was analyzed using Statistical Package for Socio-moral Scientists (SPSS).

# Data Analysis

Objectives 1, and 2 were analyzed using descriptive statistics whereby the data was converted into mean and standard deviation and presented in terms of tables. Objective 3 of the study was analyzed using inferential statistics of Pearson’s correlational moment. Thus, the raw data was entered into a computerized software (SPSS Version 20) then analyzed to present the results in mean and standard deviation statistics, then discussed and afterwards supported with literature review.

# CHAPTER FOUR

# RESULTS AND DISCUSSION

This chapter presents the results and discussion on “**KNOWLEDGE AND PRACTICE OF CARETAKERS IN PREVENTION OF MALARIA AMONG UNDER-FIVE YEAR OLD CHILDREN AT LUWERO DISTRICT HOSPITAL, UGANDA**.”Objectives included;to investigate the knowledge level about malaria prevention among mothers of children aged under five years attending Luweero district Hospital, to assess the practices towards malaria prevention among mothers of children aged under five years attending Luweero district Hospital, and to determine the association between knowledge, practices on malaria prevention among mothers of children aged under five years attending Luweero district Hospital. Data was gathered randomly from 77 respondents out of a sample size of 82 persons (representing 93.9% response rate) with a self-administered questionnaire.

# Respondents Demographic Information

The study assessed respondents’ demographic information in terms of gender, age, marital status, education level, religion, occupation and number of children. Aim of involving the demographic information of the respondents is to ensure that there is no biasness when collecting data since respondents’ personal characteristics can determine the response of the study. Findings are presented in Table 3 of the study.

**Table 3: Mother’s Demographic Information**

|  |  |  |  |
| --- | --- | --- | --- |
| **Character** | **Response** | **Frequency** | **Percent** |
| Age | Less than 20 Years | 11 | 14.3 |
| 21-29 Years | 38 | 49.4 |
| 30-39 Years | 28 | 36.4 |
| Marital status | Married | 50 | 64.9 |
| Single | 27 | 35.1 |
| Education level | Primary | 41 | 53.2 |
| Secondary | 23 | 29.9 |
| Tertiary | 2 | 2.6 |
| Never went to school | 11 | 14.3 |
| Religion | Catholic | 6 | 7.8 |
| Anglican | 17 | 22.1 |
| Born again | 30 | 39.0 |
| Muslims | 24 | 31.2 |
| Occupation | Teacher | 8 | 10.4 |
| Business man | 24 | 31.2 |
| Peasant | 38 | 49.4 |
| Civil servant | 7 | 9.1 |
| Number of children | 1-5 children | 54 | 70.1 |
| 6-10 children | 23 | 29.9 |

N=77

**Table 3** presents information on respondents’ demographic information in terms of gender, age, marital status, education level, religion, occupation and number of children. The results regarding age of the respondents show that nearly half 38(49.4%) of the mother respondents were aged 21-29 years and fewer 11(14.3%) were aged less than 20 years. In terms of marital status, results show that majority 50(64.9%) of the respondents were married while few 27(35.1%) were single mothers. In relation to education level, results show that majority 66(85.7%) of the mother respondents had different educational level while few 11(14.3%) had no formal education. In regard to religion, results show that 30(39%) of the respondents were born again with fewer 6(7.8%) being catholic. In terms of occupation, 38(49.4%) of the respondents were peasant farmers with fewer 7(9.1%) being civil servants.

# The Knowledge Level about Malaria Prevention among Mothers of Children Aged Under Five Years Attending Luweero District Hospital

Objective 1 of the study was to investigate the knowledge level about malaria prevention among mothers of children aged under five years attending Luweero district Hospital. Results are presented in Table 4.

**Table** 4**: The Knowledge Level about Malaria Prevention among Mothers of Children Aged Under Five Years Attending Luweero District Hospital**

|  |  |  |
| --- | --- | --- |
| **Items** | **Yes (true)** | **No (False)** |
| Do you know the meaning of malaria | 53(68.6%) | 24(31.2%) |
| Do you know that malaria can be prevented | 46(59.7%) | 31(40.3%) |
| Malaria infection is usually transmitted by the bite of an infected female anopheles mosquito | 51(66.2%) | 26(33.8%) |
| Witch craft is not the main cause of malaria | 52(67.5%) | 25(32.5%) |
| Malaria is a disease caused by a parasite plasmodium | 42(54.5%) | 35(45.5%) |
| Fever, general body weakness, nausea, vomiting, refusal to eat, irritability, back pain, headache and joint pains are some of signs and symptoms of malaria | 54(70.1%) | 23(29.9%) |
| The risks of disease and death from malaria in endemic areas are concentrated among children and pregnant women | 57(74.0%) | 20(26.0%) |
| un complicated malaria is usually characterized by fever | 45(58.4%) | 32(41.6%) |
| Severe malaria is a life-threatening manifestation | 51(66.2%) | 26(33.8%) |
| Malaria can be prevented with modern medications | 50(64.9%) | 27(35.1%) |
| The commonly used confirmation tests to detect the presence of malaria parasites are microscopy or rapid diagnostic tests (RDTs) | 50(64.9%) | 27(35.1%) |
| **Average Frequency and Percentage** | **50(64.9%)** | **27(35.1%)** |

*n=77*

*Mean range: Very Low (1: 1.00- 1.74), Low (2: 1.75- 2.49), High (3: 2.50- 3.24) and Very High (4: 3.25- 4.00).*

**Table 4** presents empirical information on knowledge level about malaria prevention among mothers of children aged under five years attending Luweero district Hospital. Findings indicate that 68.6% of the mother respondents knew the meaning of malaria, 59.7% knew that malaria can be prevented, 66.2% knew that malaria infection is usual transmitted by the bite of an infected female anopheles mosquito, 67.5% were aware than witchcraft does not cause malaria, 54.5% were aware that malaria is a disease caused by a parasite plasmodium, 70.1% knew that fever, general body weakness, nausea, vomiting, refusal to eat, irritability, back pain, headache and joint pains are some of signs and symptoms of malaria, 74.0% were aware that the risks of disease and death from malaria in endemic areas are concentrated among children and pregnant women, 66.2% knew that severe malaria is a life threatening manifestation, 64.9% were aware that malaria can be prevented with modern medication and 64.9% of the mother respondents had the knowledge that the commonly used confirmation tests to detect the presence of malaria parasites are microscopy or rapid diagnostic tests (RDTs).

In conclusion, objective one results indicates that the knowledge level about malaria prevention among mothers of children aged under five years attending Luweero district Hospital was high with an average of 64.9% of the mothers who participated in the study have knowledge about what malaria is, what causes malaria, malaria symptoms, malaria treatment. The results are in line with the views of Berzosa , et al., (2016) who states having a good understanding on what malaria is, what causes it and how it occur is very much important in it prevention in children under five years therefore care takers ought to be more knowledgeable. This study done in Bata district Equatorial Guinea to assess caregivers’ malaria knowledge, beliefs, attitudes and related factors and concerns of 440 houses selected from 18 rural villages and 26 urban neighbourhoods. Significant differences between rural and urban households were observed in caregivers’ malaria knowledge and beliefs as a result of 42% of urban and 65% of rural caregivers were unaware as to how malaria is transmitted.

# The Practices towards Malaria Prevention among Mothers of Children Aged under Five Years Attending Luweero district Hospital

Objective 2 of the study was to assess the practices towards malaria prevention among mothers of children aged under five years attending Luweero district Hospital. Results are presented in Table 5.

**Table 5: The Practices towards Malaria Prevention among Mothers of Children Aged under Five Years Attending Luweero district Hospital**

|  |  |  |
| --- | --- | --- |
| **The Practices towards Malaria Prevention** | **Mean** | **Std. D.** |
| Witch doctors prevent malaria | 2.05 | .724 |
| Every child with signs and symptoms of malaria should be taken to the hospital doctor | 2.90 | .680 |
| Traditional medicines do not prevent malaria | 2.12 | .858 |

*n=77*

*Mean range: Very Low (1: 1.00- 1.74), Low (2: 1.75- 2.49), High (3: 2.50- 3.24) and Very High (4: 3.25- 4.00).*

**Table 5** presents empirical information on the practices towards malaria prevention among mothers of children aged under five years attending Luweero district Hospital. Results show that mothers agreed they do not seek the help of witch doctors when the child shows signs or suffers from malaria (Mean=2.05, S. D=0.724), and ensured that they take their child to hospital every time they notice signs of malaria (Mean=2.90, S. D=0.680) and traditional medicine do not prevent malaria (Mean=2.12, S. D=0.858).

In conclusion, objective two results indicates that there are positive practices towards malaria prevention among mothers of children aged under five years attending Luweero district Hospital with majority of mothers not practicing witch craft and traditional medicine to prevent or treat malaria, but considering hospital diagnosis and treatment in case the child show signs of malaria.

**Table 6: What mothers should do to prevent malaria among under five children? Tick all that apply**

|  |  |  |
| --- | --- | --- |
| **Measures** | **Frequency** | **Percent** |
| Sleep under a treated ITNs | 54 | 70.1 |
| leave the child at home | 2 | 2.6 |
| Rush the child to a hospital | 16 | 20.8 |
| give fluids to the child | 5 | 6.5 |
| Total | 77 | 100.0 |

Further, the study results shows that 70.1% of the mothers believe in their children sleeping under a treated ITNs, followed by 20.8% of mothers recommending that the child to be rushed to hospital after showing signs and symptoms of malaria, while few 6.5% suggesting that the child should be given fluids while fewer 2.6% recommending that the child with signs of malaria should be left at home.

# Association between Knowledge, Practices on Malaria Prevention among Mothers of Children Aged Under Five Years Attending

# Luweero District Hospital

Objective 3 of the study was to determine the association between knowledge, practices on malaria prevention among mothers of children aged under five years attending Luweero district Hospital. Results are presented in Table 7.

**Table** 7**: Association between Knowledge, Practices on Malaria Prevention among Mothers of Children Aged Under Five Years Attending Luweero District Hospital**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Coefficientsa** | | | | | | |
| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
| B | Std. Error | Beta |
| 1 | (Constant) | 117.840 | 26.214 |  | 4.495 | .000 |
| knowledge about malaria prevention | .773 | .317 | .273 | 2.437 | .017 |
| Practices on malaria prevention | .029 | .282 | .311 | .102 | .000 |
| a. Dependent Variable: Malaria prevention | | |  |  |  |  |

**Table 7** presents information on the association between knowledge, practices on malaria prevention among mothers of children aged under five years attending Luweero district Hospital.

**Knowledge:** The regression results show that one unit increase in knowledge contributes 27.3% increase in malaria prevention among mothers of children aged under five years attending Luweero district Hospital (beta=0.273, P=0.017<0.05). The relationship was statistically significant at 5%, hence suggesting that there was adequate evidence that when caregivers have more knowledge about malaria, their ability to prevent the disease increases, and when their knowledge is low then malaria prevention decreases as well.

These findings are supported by Mukaila. et al., (2013) study conducted in Tamale, northern region of Ghana about knowledge and skills of mothers/care givers of children under five years in communities with home-based management of malaria, involved 400 families and mothers/care givers with children less than five years who were selected randomly. The study concluded that there is a significant positive association between mothers’ knowledge and malaria prevention.

**Practices:** The regression results show that one unit increase in practices contributes 31.1% increase in malaria prevention among mothers of children aged under five years attending Luweero district Hospital (beta=0.311, P=0.000<0.05). The relationship was statistically significant at 5%, hence suggesting that there was adequate evidence that practicing malaria prevention increased caregivers’ ability to prevent malaria from Luweero district Hospital.

In conclusion, results show that malaria knowledge contributed to malaria prevention by 27.3% (beta=0.273, P=0.017<0.05); while malaria control practices influenced malaria prevention by 31.1% (beta=0.311, P=0.000<0.05) whereby the relationship was statistically significant at 5%.

The results are in line with the views of Clifford afoakwah et al., (2018) whose study on the association with use of large-scale malaria interventions/practices by mothers such as: indoor residual spraying (IRS), insecticides treated bed nets (ITN), and behaviour change communication (BCC) strategies and prevention of malaria among under five revealed that there is a significant association between mothers’ caretakers’ practices and malaria prevention among children aged under five years.

Qualitative data/findings

The qualitative information contained respondents’ views on what should be done to prevent malaria among children under the age of five. The respondents had the following suggestions; sleep under a treated mosquito net, use of protective clothing, take the child to the hospital whenever they detect any sign of malaria, take medication appropriately as it was prescribed by the doctor, close and put screen on windows and doors in early evening and to destroy all potential mosquitoes breeding sites such as clearing all stagnant water and even bushes.

# CHAPTER FIVE

# SUMMARY, CONCLUSION AND RECOMMENDATION

This chapter includes the summary, conclusion and recommendations of the organized, presented and analyzed data in the preceding chapters. The summary and conclusions are drawn from the discussed findings in regard with the study objectives.

# Summary

The study was carried out on “Knowledge and Practice of Caretakers in Prevention of Malaria Amongst Under-Five Year Old Children at Luwero District Hospital, Uganda.” Objectives included; to investigate the knowledge level about malaria prevention among mothers of children aged under five years attending Luweero district Hospital, to assess the practices towards malaria prevention among mothers of children aged under five years attending Luweero district Hospital, and to determine the association between knowledge, practices on malaria prevention. Descriptive and correlational research designs guided by quantitative and qualitative data collection approaches were used. Data was gathered randomly from 77 respondents out of a sample size of 82 persons (representing 93.9% response rate) with a self-administered questionnaire.

# Key Findings

In conclusion, objective one results indicates that the knowledge level about malaria prevention among mothers of children aged under five years attending Luweero district Hospital was high with an average of 64.9% of the mothers who participated in the study have knowledge about what malaria is, what causes malaria, malaria symptoms, malaria treatment.

Objective two results show that mothers do not seek the help of witch doctors when the child shows signs or suffers from malaria (Mean=2.05, S.D=0.724), and ensured that they take their child to hospital every time they notice signs of malaria (Mean=2.90, S.D=0.680) and do not traditional medicine to prevent malaria (Mean=2.12, S.D=0.858). In conclusion, there are positive practices towards malaria prevention among mothers of children aged under five years attending Luweero district Hospital with majority of mothers not practicing witch craft and traditional medicine to prevent or treat malaria, but considering hospital diagnosis and treatment in case the child show signs of malaria.

Objective three results show that malaria knowledge contributed to malaria prevention by 27.3% (beta=0.273, P=0.017<0.05); while malaria control practices influenced malaria prevention by 31.1% (beta=0.311, P=0.000<0.05) whereby the relationship was statistically significant at 5%.

# Conclusion

Based on the study results, it was concluded that 64.9 of the mothers of children aged under five years attending Luweero district Hospital are knowledgeable about malaria, its causes, symptoms and prevention.

In addition, it was concluded that majority of mothers of children aged under five years attending Luweero district Hospital avoid bad practices such as witch craft, traditional doctors to treat and prevent malaria.

# Recommendations

Government under the ministry of health should invest more time, funds and expertise in ensuring that mothers get more knowledge about malaria, its causes, prevention practices and treatment. This can be achieved through health education seminars, workshops by doctors, village health teams and other interested experts and stakeholders like NGOs.

A serious supervision should be done to make sure that the work is done successfully by implementors such as village health teams, health educators and stakeholders like NGOs.

The implementors should verify whether the protocols are observed by community members for instance before distributing the new mosquito nets ask about the one that was distributed previously.

Further studies should be carried out on other factors affecting or associated with malaria prevention among mothers of children aged under five years attending Luweero district Hospital.

# REFERENCES

Admasie A, Zemba A, paulos W. Insecticide-treated nets utilization and associated factors among under-5 years old children in Mirab Abaya District, Gamo-Gofa Zone, Ethiopia. [pub med] [Google scholar].

Caraballo H, King K (May 2014). ["Emergency department management of mosquito- borne illness: malaria, dengue, and West Nile virus"](http://www.ebmedicine.net/topics.php?paction=showTopic&topic_id=405). *Emergency Medicine Practice*. **16** (5): 1–23, quiz 23–4.

Dahalan FA, Churcher TS, Windbichler N, Lawniczak MK (November 2019). ["The male mosquito contribution towards malaria transmission: Mating influences the Anopheles female midgut transcriptome and increases female susceptibility to human malaria parasites"](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6837289). *PLOS Pathogens*. **15** (11): e1008063.

Danielle R. prevention and risk factors of malaria in children under the age of five years old. Uganda: SACEMA Quarterly; 2015. [pub med] [Google scholar].

Gupta P (2007). Essentials of paediatric nursing. New Delhi; CBS publishers and distributors. Huckleberry, M.J., Wilson, D. and Rodgers, C.C., (2016). Wong’s essential of paediatric nursing-E-Book. Elsevier Health sciences.

Idro R, Aloyo J, Mayende L, Bitarakwate E, John CC, Kivumbi GW. Severe malaria in children in areas with low, moderate and high transmission intensity in Uganda. Tropical medical Int Health.

IR Kituyi 2018 malaria prevention and associated factors among children. <https://dspase.ciu.ac.ug>.

Mpimbaza A, sears D, Sserwanga A, Kigozi R, Rubahika D, Naddler A, et al. (2015) admission risk score to predict inpatient paediatric mortality at four public hospitals in Uganda. Plos one.

Ovadge and Nringu (2016) multidimensional knowledge of malaria among caregiver’s implication insecticides treated nets use by children, malaria journal.

Reference library of selected Material IMCI (2009). Integrated Management of Childhood illness.

Snow RW. (2017)The prevention of plasmodium falciparum in sub-Saharan Africa since 1900. Harvard data verse, V1, under a CC-By 4.0 license.

The Uganda ministry of health. The Uganda malaria reduction strategic plan 2014- 2020. Kampala; 2014.

Uganda bureau of statistics (UBOS) and ICF international. Uganda malaria indicator survey report; 2014-15. Kampala and Rockville: UBOS and ICF international.

WHO. Global Vector Control Response 2017-2030. Geneva: World Health Organization; 2017. [Google scholar]

WHO. World malaria report 2016. Geneva: World Health Organization; 2016.

**APPENDIX I: CONSENT FORM**

## Research description

The main purpose of this study will be to assess knowledge and practices of caretakers on prevention of malaria in children under five years at Luwero General Hospital. This study will provide the caretakers with the valuable information they need in prevention of malaria that will increase their understanding. These studies will also enable policy makers gain better insight on the knowledge and practices of the care takers on prevention of malaria in children under five and will able them evaluate on-going completed programmes on prevention of malaria.

I am **Inshutiyayezu Joel**, a student of **Bugema University** carrying out a study on above topic. You have been selected to take part in this study. All the information you give is very valuable and will be treated with maximum confidentiality. Do not write your name on this paper. So please feel free to respond to the questions as genuinely as possible and you are free to withdraw from the study at any time. Thank you.

## CONSENT

I certify that, to the best of my knowledge, I have read and understood the contents above and I freely participate in this study.

**Respondent**

Sign…………… date…………………………….

# APPENDIX II: QUESTONNAIRE

Questionnaire on the knowledge and practices of caretakers on prevention of malaria in children under five years at Luwero General Hospital.

**Part 1: socio demographic factors of the respondents.**

1. What is your age? (tick one)
2. <20 years B) 21-29 years  C) 30-39 years 

D) 40-49 years  E) 50 years and above 

1. What is your marital status?
2. Married  B) single 
3. What is your level of education?
4. Primary level  B) secondary level 
5. Tertiary/ university level  D) never went to school at all 
6. What is your religion?
7. Catholic  B) Anglican  C) born again 
8. Muslim  D) others………………………….
9. What is your occupation?
10. Teacher  B) business man  C) peasant 
11. Civil servant  E) any other state…………………
12. How many children do you have?
13. 1-5  B) 6-10  C) more than 10 

**Part 2: knowledge of caretakers on prevention of malaria.**

1. Do you know the meaning of malaria?
2. Yes  B) No 
3. If yes, what is malaria?
4. General body weakness  B) joints pain  C) a disease caused by a parasite plasmodium 

D) None of the above 

E) all of the above 

3. Do you know that malaria can be prevented?

A) Yes  B) No 

4. for the questions below answer true or false.

a) Malaria infection is usually transmitted by the bite of an infected female anopheles mosquito………..

b) Witch craft is the main cause of malaria…………

c) Malaria is a disease caused by a parasite plasmodium……..

d) Fever, general body weakness, nausea, vomiting, refusal to eat, irritability, back pain, headache and joint pains are some of signs and symptoms of malaria……..

e) The risks of disease and death from malaria in endemic areas are concentrated among children and pregnant women……

f) un complicated malaria is usually characterised by fever……..

g) Severe malaria is a life-threatening manifestation of malaria in the presence of any of the following laboratory features: prostration, alteration in the level of consciousness, respiratory distress, circulatory collapse, pulmonary oedema, abnormal bleeding, jaundice, and hypoglycaemia (B/S <2.2mmol/l), acute renal failure and severe anaemia (HB<5g/dl)………….

i) Malaria can be prevented with modern medications…………

j) The commonly used confirmation tests to detect the presence of malaria parasites are microscopy or rapid diagnostic tests (RDTs)……………

**Part 3. Practices of caretakers towards prevention of malaria**

1. Witch doctors prevent malaria
2. Strongly agree  b) agree  c) disagree  d) strongly disagree 
3. Every child with signs and symptoms of malaria should be taken to the hospital doctor?
4. Strongly agree  b) agree  c) disagree  d) strongly disagree 
5. Traditional medicines do not prevent malaria
6. Strongly agree  b) agree  c) disagree  d) strongly disagree 
7. Which of the following should be done to prevent malaria among under five children? Tick all that apply.
8. Sleep under a treated ITNs  B) leave the child at home 

C) Rush the child to a hospital  D) give fluids to the child 

E) Give herbal medications  F) tepid sponge with cold water 

G) Tepid sponge with warm water  H) to destroy all potential mosquitoes breeding sites such as clearing all stagnant water and even bushes 

5. What do you think should be done to prevent malaria among children under the age of five?

………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………

**Part 4: Diagnosis of malaria**

1. In the past 3 months did you have any child who has ever had or suffered from malaria

Yes No

1. If yes, did you take them to the hospital?

Yes No

1. If yes, what were the results?

Positive Negative

***Thank you for participating in this study and for your valuable time***