

**AN ENQUIRY INTO BENEFITS AND POSSIBLE IMPROVEMENTS OF  
MALARIA PREVENTION HEALTH EDUCATION IN MTENDERE  
RESIDENTIAL AREA: LUSAKA DISTRICT**

**BY**

**MUBITA NAMUYAMBA**

**A DISSERTATION SUBMITTED TO THE UNIVERSITY OF ZAMBIA IN  
PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF  
THE DEGREE OF MASTER OF EDUCATION IN ADULT EDUCATION**

**UNZA 2016**

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**THE UNIVERSITY OF ZAMBIA**

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## **DEDICATION**

I dedicate this work to my treasured, understanding, supportive and hardworking husband Brian Muwanei Kabika for being both a father and mother to our children while I sat down in front of the computer ploughing through my academic work for several years. He gave me time off important duties of a wife and a mother and sacrificed his comfort for me to be where I am today, I am very thankful for that. More so, to our three lovely children, namely Munjongo Kabika, Bridget Kabika and Lilato Kabika (Laroo my heavenly sent angel) for denying them the attention, homework assistance, shopping, bedtime stories, handball and swimming time. I say sorry and thank you for the patience. I will endeavor to compensate for the lost time, however; investment in education is always a worthwhile venture. I also dedicate this work to my dearest parents Mr Munjongo M. Namuyamba and Mrs Esther Chuma Mwalye Namuyamba as well as my lovely parents' in-law, Mr Calvin Mubita Kabika and Mrs Bridget Muwanei Kabika for their unwavering faith and support to me. Lastly but not the least, I wish to also dedicate this work to my late cousin Namuchana Wamulume who planted a great seed of hard work in me.

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**AUTHOR'S DECLARATION**

I, Namuyamba Mubita, do hereby declare that, ‘*An Enquiry into the Benefits and Possible Improvements of the Malaria Prevention Health Education program in Residential Area: Lusaka District*’, is my own piece of work. All the works of other persons cited have been dully acknowledged and that this work has never been submitted or presented for any degree at any University for similar purposes.

Signature of author: .....

Date: .....

Signature of supervisor: .....

Date: .....

**APPROVAL**

The University of Zambia approves the dissertation by Namuyamba Mubita as fulfilling part of the requirements for the award of the degree of Master of Education in Adult Education.

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Date: .....

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Date: .....

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## ABSTRACT

This study was undertaken in order to make an enquiry on the benefits and possible improvements of the Malaria Prevention Health Education Program (MPHEP) in Mtendere Residential area. The objectives were to; determine the benefits of the MPHEP; investigate the content of the MPHEP; establish the challenges encountered in the process of conducting the MPHEP; and to establish possible solutions to the challenges encountered in the process of conducting the MPHEP.

This study employed a case study design and triangulated data collection instruments. Data was collected from the respondents using semi structured questionnaires, focus group discussions and in depth interviews from a sample of 120 respondents. These included; 1 Sister in-Charge (SIC), 1 Environmental Health Technologist (EHT), 9 nurses, 10 Neighbourhood Health Committee members, 10 women at the Mother and Child Health (MCH) department, 20 patients suspected to have malaria and 69 community members of Mtendere Township who sought health services at the local clinic.

The findings included the benefits of the MPHEP through reduced morbidity and mortality resulting from Malaria. However, there was a multiplicity of challenges in its implementation. The major challenges were inadequate human resource, insufficient Indoor Residual Spraying chemicals, inadequate educational materials and donor driven funding. The situation was compounded by irregular and less frequent staff training and capacity building activities. The MPHEP was overshadowed by HIV/AIDS programs. The recommendations that emanated from the study were that government should provide adequate funding and human resource for the MPHEP in order to have a malaria free community. As a community, Mtendere clinic staff and the residents should find other ways of raising funds for the MPHEP so as to make it effective towards Malaria elimination.

Key words: *Malaria prevention health education program, benefits, improvements and Mtendere Residential Area.*

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# CHAPTER 1

## INTRODUCTION

### 1.1 Introduction

This chapter provides background information to the study on *an Enquiry into the Benefits and Possible Improvements of the Malaria Prevention Health Education Program (MPHEP) in Mtendere Residential Area: Lusaka District*. It presents an introduction and background information to the study. It further puts across the statement of the problem, purpose of the study, research objectives, research questions, research hypothesis, delimitation, limitations, theoretical framework, and significance of the study. Operational definitions, ethical considerations and organization of the dissertation are also included in this chapter. It closes with a summary of the chapter.

### 1.2 Background of the study

The background of the study provides an overview of the rationale for the choice of the topic and line of enquiry in the dissertation. Calabrese (2009: 16) points out that the primary purpose of this section is to establish the context for the problem that the researcher plans to investigate. In a similar vein, Buckley and Delicath (2013:165) contend that "...the background section should focus on the background of the problem....The discussion should describe the importance of the issues under study and should convince the reader that the proposed research is of value". It is to this effect that the following background set the basis for conducting this study.

Malaria remains a major public health challenge globally and especially in the African region. WHO (2015:5) posts that "about 3.2 billion people remain at risk of malaria. In 2015 alone, there were an estimated 214 million new cases of malaria and 438 000 deaths. Millions of people are still not accessing the services they need to prevent and treat malaria. WHO (2015:5) argues that "... 80% of malaria deaths are concentrated in just 15 countries, mainly in Africa. Taken together, these high-burden countries have achieved slower-than-average declines in malaria incidence and mortality". In most of these countries, weak health systems continue to impede progress." WHO (2015:10) also states that the number of malaria cases

globally were 214 million in 2015. Most cases in 2015 are estimated to have occurred in the WHO African Region (88%), followed by the WHO South-East Asia Region (10%) and the WHO Eastern Mediterranean Region (2%).

The number of malaria deaths in all ages globally was 438 000 in 2015 and most deaths in 2015 were in the WHO African Region (90%), followed by the WHO South-East Asia Region (7%) and the WHO Eastern Mediterranean Region (2%) WHO, (2015). According to WHO (2015) global financing of malaria control programs increased from an estimated US\$ 960 million in 2005 to US\$ 2.5 billion in 2014. International funding for malaria control, which accounted for 78% of malaria program funding in 2014, decreased from US\$ 2.1 billion in 2013 to US\$ 1.9 billion in 2014 (i.e. by 8%), primarily due to changes in the funding arrangements of the Global Fund to Fight AIDS, Tuberculosis and Malaria.

The WHO's Global Malaria Program (2015) recommends the following three primary interventions for malaria control: early diagnosis of malaria cases and treatment with effective medicines; distribution of Insecticide-Treated Nets (ITNs) to achieve full coverage of populations at risk of malaria; and Indoor Residual Spraying (IRS) as a major means of malaria vector control to reduce and eliminate malaria transmission. Additionally, for control of malaria in pregnancy, use of effective chemo-prophylactic agents for intermittent prevention of malaria is recommended.

As echoed by WHO (2010) that in the year 2000, African heads of states and governments committed themselves to an intense effort to half malaria morbidity for Africa by 2010. In addition, the Heads of States agreed that at least 60% of all pregnant women at risk of malaria, especially those in their first pregnancy must have access to chemoprophylaxis or intermittent preventive treatment (WHO, 2014). Since the signing of the Abuja Declaration, there have been numerous efforts to accelerate the fight against malaria for the attainment of the sixth Millennium Development Goal that seeks, among other targets, to significantly reduce incidence and death rates associated with malaria.

WHO (2015:10) states, "... the number of malaria deaths in children aged under 5 years globally was estimated at 306 000 in 2015. The WHO African Region, estimated that the number of deaths was 292 000 in 2015. Malaria remains a major killer of children, taking the life of a child every 2 minutes..." The economic loss from malaria was estimated at US\$2 billion in Africa alone in 1997 (WHO, 2010). Malaria is a major cause of poverty, and poverty exacerbates the malaria illness. The effects of malaria on lives and livelihoods are devastating for economic progress in hard-hit countries. The World Health Organization and the World Bank rank malaria as the largest single component of the disease burden in Africa, causing an annual loss of 35 million future life-years from disability and premature mortality. In Africa, malaria is responsible for about 20-30% of hospital admissions and about 30-50% of outpatient consultations (WHO, 2010).

Malaria has proven to be a formidable adversary over many centuries (Hall and Fauci, 2009:1639). "All ten provinces of Zambia are endemic for malaria with 90% of the population at risk" (USAID, 2015:11). There has been a number of Malaria Prevention Health Education Programs aimed at eradicating it. However, malaria has continued to ravage a multitude of lives in Zambia and even in Lusaka's residential areas. The persistence of Malaria prevalence in Lusaka is still claiming the lives of both young and old people.

In Zambia the parasite, *Plasmodium falciparum*, is transmitted all year-round by the female anopheles mosquito, though transmission rates tend to be highest during the rainy season, which lasts from approximately November to April. MOH (2011:x) declared that Public Health Priorities include, "Communicable diseases, especially malaria..."

USAID (2015:11) posits that, "in Zambia, malaria is caused by the four main *Plasmodium* species that infect humans, with *Plasmodium falciparum* accounting for 98% of all infections. *Anopheles (An.) gambiae* and *An. funestus* are the major vectors. All ten provinces of Zambia are endemic for malaria with 90% of the population at risk." Keating et al (2009:279) stated that, "...*Plasmodium malariae* and *Plasmodium ovale* account for less than 5 percent (Keating et al, 2009).

MOH (2008) points out that the entire population in Zambia is at risk of malaria, which has particularly severe health implications for pregnant women, children under five, and people living with HIV/AIDS. In pregnant women, infection rates have been shown to be highest in the first and second pregnancies, with lower rates in subsequent pregnancies (Steketee et al., 2001). MOH (2008: 67) estimates that, “3.2 million cases (clinically or laboratory diagnosed) were reported, causing 3,871 deaths.” It is believed that malaria is responsible for up to approximately 47% of the overall disease burden for pregnant women. The effects of malaria in pregnancy (MIP) are many. As the malaria parasite is sequestered in the placenta, there are additional risks of premature birth, intrauterine growth retardation, low birth weight, spontaneous abortion, stillbirth, and congenital malaria in the new-born (Wallon et al., 2010). Malaria affects more than 4 million Zambians annually, accounting for approximately 30% of outpatient visits and resulting in almost 8,000 deaths each year (MOH, 2011:32). Under five-year-old children and pregnant women are the most vulnerable, especially those in more remote and impoverished areas, with 35-50% of under-five mortality and 20% of maternal mortality attributable to malaria.

Malaria is endemic in Zambia and is the leading cause of morbidity and mortality. Prior to 1970, the prevalence of malaria in urban areas in Zambia was kept to a minimum due to an effective prevention and control program. The incidence rate per 1000 population in Zambia in 2006 was 412 and 246 in 2009 (MOH, 2008).

Malaria prevention may entail the use of drugs (prophylaxis) and other transmission prevention tools such as Insecticide-Treated Nets (ITNs) and Indoor-Residual Spraying (IRS) amongst others. Research has contributed immensely to the understanding of what populations should do to prevent malaria before it strikes and how preventive tools and strategies through biomedical sciences are used (Keating et al, 2009). One of the primary vector control interventions for reducing malaria transmission is indoor residual spraying, whereby long-acting chemical insecticides are sprayed on the walls and roofs of all structures in an area to kill the mosquitoes that land and rest there. WHO's Global Malaria Program recommended IRS as one of the three interventions that were

to be scaled up by countries to achieve the Millennium Development Goals for the fight against malaria by 2015 (WHO, 2006).

Through the Malaria Prevention Health Education Program (MPHEP), this study sought to enquire into the benefits of the MPHEP. The MPHEP is supposed to be carried out through simple and easily adaptive messages that are needed such as; improved understanding of disease, encouraging appropriate treatment-seeking behavior, making the connection between protection against mosquitoes and prevention of disease, improving mosquito net retention and correct use and emphasis on who needs protection most (usually children and pregnant women) in such a way that Health messages may be delivered through Community Health Workers (CHWs), posters, leaflets, and the mass media.

### **1.3 Statement of the Problem**

Farrell (2011) view the statement of the problem as a succinct statement of the dilemma that the research questions are intended to resolve. It can also be defined as an intellectual puzzle that the researcher wants to investigate (Cresswell, 2012). In the same vein, Kasonde-Ngandu, (2013) sees statement of the problem as an issue or concern that puzzles the researcher. The statement of the problem is a clear and unambiguous question/statement regarding the specific problem to be investigated. It is often followed by a more detailed discussion of the problem area and provides the reader with a more comprehensive understanding of the problem area to be studied. In spite of the many interventions on Malaria prevention which are aimed at creating a malaria free Zambia, the cases of malaria are still persisting in many places as is the case in Mtendere. It is not clear whether the beneficiaries of the MPHE understand the real benefits that can accrue to them through the positive changes the program was intended to bring about.

### **1.4 Purpose of the study**

Scholars have defined ‘the purpose of the study’ differently. The purpose of the study is a succinct restatement of the problem. The purpose of the study offers a precise summation of the study (Calabrese 2009: 123). For instance, Calabresa (2009) defines it as the reason for conducting research. Similarly, Kasonde- Ngandu (2013:16) perceives purpose of the study

as, “an intention, goal or what the researcher strives to achieve”. Therefore, the purpose of this research was to make an enquiry into the benefits, challenges and possible improvements of the Malaria Prevention Health Education Program (MPHEP) in Mtendere Residential Area: Lusaka District.

### **1.5 Research Objectives**

A research objective is defined as a “statement of purpose for which the investigation is conducted” (Calmorin 2007: 30). Consequently, “objectives must be capable of having an outcome and the success of the dissertation will be measured against them...” (Farrell 2011: 48). The objectives below guided the processes of this study.

#### **1.5.1 General Objective**

To determine the benefits of the Malaria Prevention Health Education, the challenges encountered during the process of conducting MPHE in Mtendere residential area and the possible solutions to the challenges encountered in the process.

#### **1.5.2 Specific Objectives**

The objectives of this study were to;

- i. determine the benefits of the Malaria Prevention Health Education Program (MPHEP) in Mtendere residential area;
- ii. investigate the content of the Malaria Prevention Health Education (MPHEP) in Mtendere residential area;
- iii. establish the challenges encountered in the process of conducting the Malaria Prevention Health Education Program (MPHEP) in Mtendere residential area; and
- iv. establish possible solutions to the challenges encountered in the process of conducting the Malaria Prevention Health Education (MPHE) in Mtendere residential area.

## **1.6 Research Questions**

Research questions are “questions in quantitative or qualitative research that narrow the purpose statement to specific questions that researchers seek to answer” (Creswell, 2012:110). Thus, the study aimed at answering the subsequent questions below.

### **1.6.1 General Research Question**

What are the benefits of the Malaria Prevention Health Education, the challenges encountered during the process of conducting the MPHE in Mtendere residential area and the possible solutions to the challenges encountered in the process?

### **1.6.2 Specific Research Questions**

The following were the specific research question that guided this study.

- i. What are the benefits of the Malaria Prevention Health Education (MPHE) in Mtendere residential area?
- ii. What is the content of the MPHE in Mtendere residential area?
- iii. What challenges are encountered during the process of conducting Malaria Prevention Health Education (MPHE) in Mtendere residential area?
- iv. What are the possible solutions to the challenges encountered during the MPHE in Mtendere residential area?

## **1.7. Significance of the Study**

Cresswell (2012) argues that the significance section of the study in a thesis describes the importance of seeking a solution to the statement of the problem identified previously. The findings of this study may be useful to the Ministry of Health as policy makers as the recommendations may help them to modify policies for effective Malaria prevention health education. The findings may be of value to health workers by enriching their knowledge about the implementation of the MPHE. The findings from the study may also help Community Health workers to prevent Malaria among members of the community

effectively. The research findings might be useful in future planning of similar programs. They may add new knowledge to the already existing body of knowledge.

### **1.8 Delimitation of the Study**

Delimitation is the scope of the study that is chosen by the researcher (Farrell, 2011). Koh and Owen (2000: 38) refer to delimitation of the study as a "...boundary to which the study was knowingly confined." Delimitations are therefore important as they are used to "limit and clarify the scope to the study" (Cottrell and Mckenzie 2011: 86). Therefore, the delimitation for this study was Mtendere Township of Lusaka because it was one of the areas where malaria cases are still being recorded.

### **1.9. Theoretical Framework**

Imenda (2014:189) opines, "a theoretical framework is the application of a theory, or a set of concepts drawn from one and the same theory, to offer an explanation of an event, or shed some light on a particular phenomenon or research problem." The framework is used as a mirror to check whether the findings agree with the framework or whether there are some discrepancies; where discrepancies exist, a question is asked as to whether or not the framework can be used to explain them (Imenda, 2014). Glasgow et al. (2004) defined theoretical framework as the structure that can hold or support a theory of a research study. The theoretical framework introduces and describes the theory that explains why the research problem is under study and provides guidance to a research project.

### **The RE-AIM Framework**

The theoretical framework that guided this research is the (reach, effectiveness, adoption, implementation and maintenance) RE-AIM framework because it encompasses issues of preventive education in communities and program utility assessment. This framework was originally developed to report findings from research (Glasgow et al, 1999), and was later on used in the health setting to review and organize literature on health promotion and prevention of diseases (Glasgow et al, 2004). In the view of Glasglow (2006) the RE-AIM (reach, effectiveness, adoption, implementation and maintenance) framework, provides a

practical means of evaluating health interventions. It has primarily been used in studies focused on changing individual behaviors. Given the importance of the built environment in promoting health, using RE-AIM to evaluate environmental approaches is logical.

RE-AIM is intended to be used at all stages of research from planning through evaluation and reporting and across different types and stages of research (Glasgow, 1999). The RE-AIM framework: (1) emphasizes five dimensions that together determine public health impact; (2) places equal emphasis on external and internal validity; and (3) evaluates results at both the individual and setting/contextual levels (Glasgow et al., 2004).

The RE-AIM framework is rooted in translational science as pointed out by Glasgow(2006) because it encompasses the implementation activities across the domains of research, practice, application, and policy. RE-AIM is now being used by program planners to improve the chances of the program working in the “real world” (Glasgow et al, 1999).

The RE-AIM framework’s five elements namely Reach, Effectiveness, Adoption, Implementation and Maintenance. The elements in this framework can be applied at participant and organizational levels in the program or design. This is because they act as a guide in the improvement as well as adoption of evidence based health promotion program. Belza et al (2003: 4) describe the elements found in the RE-AIM framework as follows: “Reach” is the extent to which the targeted audience is drawn to the program. The intended audience can be attracted to a program based on factors such as cost, access, benefits familiarity and program supports. The Reach element in this framework addresses questions such as: “Will those who can benefit the most participate?” and “Will those having lower incomes be likely to participate?” “Effectiveness,” refers to program outcomes. These are assessed by measuring the impact of the intervention on the quality of life. Consequences that may arise as a result of the programs are captured. “Adoption” is similar to Reach but differs in the sense that it is assessed at the level of settings (community-based organisation, clinic or worksites) in the program. It addresses the issues of whether or not a program can be adopted in a particular setting, especially those that have limited resources.

“Implementation” is sometimes referred to as intervention fidelity. It addresses the extent to which program developers deliver a program as intended. The local modifications that are made to an intervention can greatly affect the outcomes. The consistency in the delivery of an intervention by different staff, and the extent to which modifications are made to a program and its adaptability are also tackled under the implementation element. In order to assess fidelity in the implementation both quantitative and qualitative approaches are used (Belza et al, 2003). “Maintenance” applies to the individual participant and organization level. At individual level, long term effects of the intervention on the quality of life and targeted outcomes are looked at. The organization level looks at the extent to which the program is modified, sustained or discontinued over a period of time.

The main aim of the RE-AIM framework is to help funders, policy makers and evaluators to pay particular attention to details of the elements in a program to bring about sustainable adoption and effective implementation of evidence based health promotion program. This theoretical framework is a guide to help clarify things: entities, processes, and causal relationships, it brings an understanding of how and why phenomenon occurs (Theobald, 1991). This theory aided in predicting unobserved relationships and guide research in a useful direction and served as a basis for action.

#### **1.10. Operational Definition of Terms**

Theobald (1991) argues that the terms in this section should be terms directly related to the research and will be used throughout the research. It is up to the researcher, to define each term as one wants the reader to know them. Thus, the listed terms below will be used to mean the following:

**Malaria Prevention Health Education Program:** Any organized communication activities aimed at providing knowledge on how to prevent malaria transmission and disease progression.

**Malaria:** An intermittent and remittent fever caused by a protozoan parasite which invades the red blood cells in tropical and sub-tropical regions.

**Enquiry:** An act of asking for information.

**Benefits:** An advantage received.

**Improvement:** A change for the better.

### **1.11. Ethical considerations**

Cresswell (2009), states that it is imperative for a researcher to anticipate the ethical issues that may arise during research. Research involves the collection of data from people and about people (Punch, 2005).

*“Writing about these issues is required in making an argument for a study as well as being an important topic in the format proposals. Researchers need to protect their research participants; develop trust with them; promote the integrity of the research; guard against misconduct and impropriety that might reflect their organizations or institutions cope with new, challenging problems” (Creswell, 2009: 87).*

Before conducting the study, permission was sought from relevant authorities at the Ministry of Health and at Mtendere Clinic. Assurance was given to the respondents that no form of any harm whether emotional or physical would be inflicted on the respondents. Further, assurance was given that the findings of the research were to be used for academic purposes only and that confidentiality would be maintained and names of subjects withheld. In order to show compliance to participating in the research, the selected respondents signed a consent form. Respondents also had the option of terminating their participation if they so wished.

### **1.12. Organization of the dissertation**

The following is the organization of the dissertation; Chapter one focused on the background of the study, statement of the problem, purpose and objectives of the study. Research questions, hypothesis, significance of the study, delimitation and the theoretical framework were also addressed in this chapter. The chapter closed with ethical considerations and the summary of the chapter.

Chapter two reviewed literature that is related to the research topic. There is literature from studies outside Africa that provide in depth knowledge of the topic under study. Furthermore, chapter three presents the methodology used in the study. It also outlines the research design, target population, sample and sampling procedure of this study. Research instruments that were used in order to capture the necessary data are also in chapter three. Thereafter, chapter four furnished the reader with research findings which emanated from the research questions.

Chapter five presents the discussion of research findings which outline the extent to which the research objectives have been addressed. Lastly, Chapter six provides a conclusion of the study after which recommendations to various stakeholders in the MPHE are made based on the findings of the study.

### **1.13. Summary of the chapter**

Spatt (2011) posits that a summary of the chapter is a shortened version of the document that highlights its key points. It is the brief restatement of a source's main ideas. Summaries are descriptions and the primary purpose of this summary of the chapter is to give an accurate, objective representation of what this work says. Therefore, this chapter presented the background information for this study. It showed what the problem for this study was. The chapter also indicated the purpose for conducting this study, the research objectives and the research questions. Furthermore, this chapter highlighted the significance of the study, its delimitation as well as its limitations. It also operationally defined the key words and concepts. The next chapter presents the literature of the study.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

The preceding chapter provided the background of the study. It started with background information on “*An Enquiry into the Benefits and Possible Improvements of the Malaria Prevention Health Education in Mtendere Township.*” It further highlighted the statement of the problem, research objectives, research questions, significance of the study, delimitation of the study, limitations of the study and operational definitions of terms in order to enhance understanding of the context of the study. This chapter will review literature related to the Benefits and Possible Improvements of the Malaria Prevention Health Education Programme (MPHEP) in Mtendere Township. The literature review will unfold as follows; a discussion on what malaria is as well as its causes with reference to the fact that the MPHEP is based on the prevention and treatment of Malaria. A historical overview of the Malaria Prevention activities will be discussed in order to give an understanding of the genesis of the program. Various studies related to the current study will be discussed so as to provide the reader with the various gaps in the studies. Research findings that seek to answer the research objectives of the study undertaken will be looked at. Lastly a summary of this chapter will be given.

Fink (1998:3) reveals that, literature review refers to “a systematic, explicit and reproducible method for identifying, evaluating, and interpreting the existing body of recorded work produced by researchers, scholars, and practitioners.” In agreement with this, Hofstee (2006:91) further illustrates that literature review provides the reader with a theory base, a survey of published works that pertain to the investigation, and an analysis of that work. It is a critical, factual overview of what has gone before. Literature review is not an end in itself, but a means to an end. That end is to evaluate, synthesize, analyze and represent how one’s research emerged from previous studies (O’Neil, 2010). Kombo and Tromp (2006) define literature review as an account of what has been published on a topic by accredited scholars and researchers. This chapter synthesizes and critiques studies and writings which are related to this study and shows how this current study deviates from the reviewed literature.

### **2.1.2 Definition of Malaria**

Malaria is caused by a single celled parasite from the genus Plasmodium. Malaria comes from the Italian word for "bad air" and has had the tropical and sub-tropical regions of the world in its grip for thousands of years and has clearly influenced human development there (WHO, 2014). The World Health Organization (WHO) estimates that over 200 million people contract this febrile disease every year, which is primarily transmitted by mosquitoes of the genus Anopheles. It is usually associated with high, recurrent or periodic fever, shaking chills, gastrointestinal discomfort, and cramps. It can also quickly lead to coma and death, especially in children. There is still no effective vaccine against Malaria (WHO, 2014).

WHO (2015: 2) states that "Malaria in humans is caused by five species of parasites belonging to the genus Plasmodium. Four of these – *P. falciparum*, *P. vivax*, *P. malariae* and *P. ovale*– are human malaria species that are spread from one person to another via the bite of female mosquitoes of the genus Anopheles." *P. falciparum* and *P. vivax* malaria pose the greatest public health challenge.

*P. falciparum* is most prevalent on the African continent, and is responsible for most deaths from malaria (WHO, 2015). *P. vivax* has a wider geographical distribution than *P. falciparum* because it can develop in the Anopheles mosquito vector at lower temperatures, and can survive at higher altitudes and in cooler climates. It also has a dormant liver stage (known as a hypnozoite) that can activate months after an initial infection, causing a relapse of symptoms. The dormant stage enables *P. vivax* to survive for long periods when Anopheles mosquitoes are not present (e.g. during winter months).

There are different species of Plasmodium in existence. They produce malaria in many types of animals and birds, as well as in human beings (WHO, 2014). Four species of Plasmodium commonly infect humans. Each one has a distinctive appearance under the microscope, and each one produces a somewhat different pattern of symptoms. Two or more species can live in the same area and infect a single person at the same time (WHO, 2014). Plasmodium falciparum is responsible for most deaths due to malaria, especially in Africa. The infection

can develop suddenly and produce several life threatening complications, however, it is curable with prompt and effective treatment.

WHO (2014) explains that *Plasmodium vivax* is the most geographically widespread of the species and produces less severe symptoms. Relapses, however, can occur for up to three years, and chronic disease is debilitating. Once common in temperate climates, *P. vivax* is now found mostly in the tropics, especially throughout Asia.

*Plasmodium malariae* infections not only produce typical malaria symptoms but can also persist in the blood for very long periods, possibly decades, without ever producing symptoms. A person with asymptomatic *P. malariae*, however, can infect others, either through blood donation or mosquito bites. *P. malariae* has been wiped out from temperate climates, but it persists in Africa (WHO, 2015).

The less common type of plasmodium is *Plasmodium ovale*. This one is rare but can cause relapses, and generally occurs in West Africa. In Zambia, the type of malaria that is common is the *Plasmodium falciparum* species and *ovale*. This is so due to their ability to thrive in warm temperatures (MOH, 2012). This type of malaria is prevalent in densely populated areas such as shanty compounds and townships like Chawama, Garden and Mtendere among others in Zambia. Ponds and pit latrines serve as breeding grounds for mosquitoes. The Ministry of Health has come up with a number of education programs aimed at combating malaria in these malaria prone areas through larviciding and indoor residual spraying. The MOH (2012) states that education should first be given to the affected community before IRS is done. The extent to which the education messages change the communities to their beneficial levels in the Zambian society is what was investigated in this study.

### **2.1.3 Life cycle of malaria parasites**

Malaria parasites thrive both in mosquitoes and in human beings. As explained by Public Health England (2015:12):

*An infected mosquito inoculates 10 to 15 sporozoites when it bites. Each sporozoite introduced into a human and successfully enters a liver cell develops*

*in five to seven days (P. falciparum) into a schizont containing approximately 30,000 offspring (merozoites) which are released into the bloodstream when the schizont ruptures. Each merozoite has the potential to infect a red blood cell. Once inside the red cell, the malaria parasite grows and divides over 24 hours (P. knowlesi) 48 hours (P. falciparum, vivax or ovale) or 72 hours (P. malariae) to form between 8 and 32 parasites, whereupon the red cell bursts to release them to infect new red cells.*

These cycles in the red cells continue, increasing the numbers of parasites in the infected person leading to clinical illness. The WHO (2015) adds that some parasites in the red cells do not divide but form sexual stages (gametocytes) which mate if taken up by a biting female mosquito and thus complete the malaria life cycle. This life cycle is what the Zambian malaria parasite undergoes. Finding a remedy to this problem of malaria requires provision of education to people so that appropriate change in behavior is achieved.

## **2.2. Benefits of Malaria Prevention Health Education Programs.**

Malaria programs come with a variety of benefits to the individual, community and nation. Scholars in the many countries have identified the kind of benefits which are prominent to people as a result of malaria prevention health education. The below literature reviewed studies from different parts of the world. These are presented below:

### **2.2.1 Benefits of Malaria Prevention Health Education Program from a Global perspective**

Many countries in the world are affected by malaria and its population is affected highly. Studies conducted in the Philippines by Iskander (2015) established that malaria programs empowered women and their families with ITNs and treatment procedures among others. Communities in researched were using ITNs effectively and that was the only valuable asset they thought to have acquired from the program. The study looked at re-imaging malaria in the Philippines: how photovoice can help to re-imagine malaria. The study was conducted

amongst a rural community regarding their practices. This study was conducted in an urban residential area and not in a remote rural area hence the findings might be different.

A number of studies have recommended that combating malaria can be achieved through giving information to the affected and infected so that they are aware of the dangers and how to go round them. A study conducted by Fischer and Bialek (2002) on prevention of malaria in children in Germany had a number of findings worth considering. The duo found that communities which had information regarding the means of preventing malaria had less prevalence while the communities that did not have education on malaria had higher cases of malaria. The study did not spell out the areas where the study was conducted regarding the population and type of community. This study was conducted in an urban residential area of Mtendere in Lusaka Province.

Other studies in the Northern hemisphere conducted on malaria found that malaria programs had a number of benefits. Breman (2001) conducted a study which looked at manifestations, determinants and estimates of the malaria burden in Asia and his findings were significant to this study. He surveyed the rural areas of Asia which did not have health education and found that they had higher deaths resulting from malaria while urban areas which had malaria education had low deaths. The study did not show the sample which was involved and did not clearly state the research design. This study employed a case study design in the quest to assess the benefits of malaria prevention health education in an urban residential area of Mtendere in Lusaka District.

In Indonesia, Warren and Ketterer (1970) conducted a research which investigated the economic benefits of Malaria Control in the Republic of Indonesia. The researchers took a comparative study by analyzing the houses which were sprayed for mosquitoes and those that were not. The results showed that the occupants that were in sprayed houses were not getting infected with malaria while high cases were recorded among occupants of unsprayed houses. These findings do not justify whether education was given to one group of the people or not. Bialek (2002) in his research on the benefits of indoor spraying and education to residents recorded low malaria cases in Queensland. Zambia seems to be combining the

spraying and malaria education in its quest to combat the scourge of malaria. The two studies did not look at the benefits of MPHE in the areas they conducted the research from, which this study looked at.

### **2.2.2 Benefits of Malaria Prevention Health Education Program in Africa**

The African community has high prevalence of malaria cases in the world despite the intervention strategies which various governments and stakeholders have put in place to combat the scourge.

In a study conducted by Emmanuel (2013) on the impact of health education intervention on malaria prevention practices among nursing mothers in rural communities in Nigeria, a number of conclusions drawn are important to this study. The study design was a quasi-experimental study carried out in Ijebu in the North Local Government Area of Ogun State. A multistage random sampling technique was used in choosing the required samples and a semi-structured questionnaire was used to collect relevant information. The findings showed that there was an increase in knowledge of indoor spraying increased from 14.7% to 58.2% and window and door nets increased from 48.3% to 74.8%. The proportion of those with ITN use increased from 50.8% to 87.4% while those with the practice of maintaining a clean environment also increased from 40.4% to 54.5%. There were no significant changes in all the practices of malaria prevention methods in the control group. The study narrowly focused only on nursing mothers. This study is therefore of value as it has generated a broad base of knowledge about the benefits and constraints of the MPHEP.

With regards to the benefits of malaria prevention education, Chukwuocha, et al. (2010) conducted a study in Nigeria on perceptions on the use of insecticide treated nets in parts of the Imo river basin, implications for preventing malaria in pregnancy. The study recorded a number of successes in the education program. Data was collected using focus group discussions and key informant interviews and structured questionnaires. The results were that the malaria health education demystified negative perceptions on the chemicals used for net treatment. Zambian expecting mothers are given mosquito nets and oriented on how to use them effectively. The study by Chukwuocha is similar to this one in methodology yet the

focus is what drew the lines between them. This study examined the nature of education which was given to the Mtendere mothers residents regarding malaria prevention program in their communities and at the clinic.

### **2.2.3 Studies on Benefits of Malaria Prevention Health Education in Zambia**

A study that looked at “*Determinants of Insecticide-Treated Nets utilization in older children and young adults in Zambia from the Malaria Indicator Survey 2010*” was conducted by Sichande (2013). The study showed that the ITN utilization among the 5-19 year old individuals from households with the head having primary and secondary education were not statistically significant from those who came from households where the head had never been to school. However, those who came from households with the household head having tertiary education attainment were more likely to sleep under an ITN a night before the survey than those from households headed by individuals who never attended school. The study mainly sought to assess utilization of ITN from such a point of view. It was important that this study was conducted to look at the benefits of the MHPEP in the Mtendere Residential Area.

In a study “*Measuring competence among health workers in case management of malaria in pregnancy in Gwembe District of Zambia*”, conducted by Chizuni (2014), the competence of health workers in conducting MPHEP activities and Malaria treatment was explored. It was realized that majority health workers had competency in the management of malaria in pregnancy and conducting MPHEP with only a few who scored below the base line and had no knowledge of some essential competency. He concluded that the malaria prevention health education the women received contributed to the reduction in infections. It is then necessary that the MPHEP is explored to establish the benefits it comes with to Mtendere residential area.

Benefits from a study conducted by Akakulubelwa (2000) reflected some relevant content regarding MPHE. The looked at knowledge, attitude and practices towards malaria prevention in Misisi compound of Lusaka. The used a descriptive survey and collected data using interview schedule and focus group discussion on a population of 50 households. The

findings indicated that malaria prevention health education messages were received by the people yet they did not utilize the messages according to prevent their families from the disease. Misisi is a shanty compound while this study was done in Mtendere residential area which is an organized and planned township.

### **2.3 Content of the Malaria Prevention Health Education Program (MPHEP)**

The content of malaria prevention health education program has been different from one country to another. A number of scholars have argued regarding what could be called as the ‘right content’ in various regions of the world. Literature reviewed from many regions in the world presented what the content for a given region was.

#### **2.3.1. Studies on Content of the Malaria Prevention Health Education Program outside Africa**

Malaria educational content differs from country to country. In South America, Way (2015) conducted a study on how the local environment was linked to the malaria eradication programs. Drawing on resistance among American conservationists to environmental transformation in the name of malaria control, the researcher embraced the science and worldview of ecology in an effort to lighten public health’s hand on the land and to link human health to the environment in innovation. The findings were that the emphasis was on cleanliness like avoiding water logging and slashing tall grass in the environment. Jones (2012), in his study which looked at malaria prevention messages in rural Colombia, agreed that environmental awareness was key to the eradication of the disease. Mtendere Township is a highly populated area which has a Zambian cultural perspective. The MPHEP content was investigated in this study, from a Zambian context.

The malaria education content in other countries like the Philippines has a dynamic message for the affected people. UNICEF/WHO (2009) funded a study entitled ‘committing to improve communication for malaria.’ The sensitization program used community radios, drama in public places and in local churches to educate the people on the usage of ITNs and on the need to take the patient to the nearby clinic. This route to malaria education managed to capture a large number of people and the malaria cases reduced from 50% to 10% in the

rural communities. Pirio (2010) in his study on ‘why malaria education in Cambodia,’ also agrees that malaria education programs which target religious and social gatherings yield significant reduction in the malaria cases. This is because people are given the right information in their social setting. However, the studies did not state the actual sample which was targeted hence the reduction in percentage might be misleading. This study targeted how the MPHEP messages in Mtendere Township were benefiting the residents who were attended to at the clinic in the area.

A study was conducted by re-imagining malaria – a platform for reflections to widen horizons in malaria control by Hausmann-Muela and Eckl (2015). The study further looked at beyond malaria and the social conflicts around malaria. The study gave voices to communities engaged in bottom up approaches. The findings revealed that the participants held a negative view over curative education measures among citizens in rural communities. The duo argued that preventive education was more rewarding and that it had the potential of reversing the incidence of malaria. The findings could not be relied upon because the study was from one community whose malaria prevalence was not well known. It was therefore, significant for a Zambian study to investigate the content and benefits of the MPHE in Mtendere residential areas where malaria cases were reported regularly.

### **2.3.2. Studies on Content of the Malaria Prevention Health Education Program in Africa**

In an effort to combat malaria in the rural parts of the world, an organization which aimed at dealing with malaria under the world health organization was formed. The Roll Back Malaria Partnership (RBM) is the global framework for coordinated action against malaria (WHO, 2013). The program established that the content in the educational programs for the African countries should be delivered in the local languages, using different communication channels, with messages of using ITNs, health seeking behaviours and curatives measures of cleanliness at home among others.

In the African context, Malaria Prevention messages have been received with different perceptions and feelings. Mukanga et al. (2010) conducted a research in Iganga District of

Uganda to ascertain the amount of education people received regarding the introduction of rapid diagnostic tests (RDTs) by community medicine distributors (CMDs) to eradicate malaria. Focus group discussions were held in different communities of the district. The findings were that the content that was offered to community members by health workers and CMDs was on the use of RDTs by CMDs provided they had sufficient education, were trained in their use, and were supported for follow up. Education stood out to be a key factor to the effective eradication of malaria in the district. Nonetheless, the findings cannot be relied upon because the study included the entire district whose population was not known. This study focused on the MPEHP in Mtendere Township.

Kenya came up with a plan of educating shop owners on the importance of them providing accurate information to the people who bought some ant malaria medicines. Marsh et al. (2004) in his research noted that a program in Kilifi District, Kenya, in collaboration with the Kenya Medical Research Institute-Wellcome Trust Research Program, used multiple strategies to change the behaviors of providers and also increase community support for their advice. The findings were that public information activities aimed to identify the trained retailers, promoted early treatment of childhood fever, and explained the change in drug policy as content of the MPHEP. Channels included women's groups, parent teacher associations, and celebrations with local dance and drama groups. The study was on a national scale and not restricted to a smaller unit for better analysis. This study was focused on the residents of Mtendere Residential Area as it was among the townships where MPHEP was being conducted.

### **2.3.3. Studies on Content of Malaria Prevention Health Education Program in Zambia**

Studies in Zambia show that malaria education takes place in the different districts of the country. Banda (2009) conducted a study entitled '*Factors Influencing Indoor Residual Spraying in Lusaka District's Mtendere, Kanyama and Matero Compounds.*' It was a cross sectional household study was carried out in Lusaka District's Mtendere, Kanyama and Matero Compounds. The study employed an interactive method using a scheduled questionnaire 295 households were randomly selected. The study found that the content of

MPHEP was centered on IRS. The study by Banda (2009) had a narrow focus on IRS as a malaria prevention strategy and did not look at the comprehensive MPHEP which the current study focused on.

A study conducted in Sesheke on the factors influencing utilization of intermittent presumptive treatment of malaria (IPTp) services by pregnant women by Sikambale (2013), found a number of topics in content delivered to the women. He used focus group discussions and interview as data collection methods. The findings showed that pregnant women were taught Malaria Prevention messages regarding ITN and environmental management to protect themselves from Malaria. However, Sikambale's study was in Western Province while the current study was carried out in Lusaka. Furthermore, the two studies had different aims.

A study on malaria communications strategy by Mutale (2009) provided an important avenue for malaria content analysis as provided by the educators on various private and public media. He used a quantitative approach and interview guides and questionnaires to collect data. Findings suggested that the reduction in malaria cases can be achieved when proper education is given to the vulnerable people in the compounds because they are the ones prone to the disease. He also found that health education provided civil and private sector radio and television offered a wider and integrated malaria communication strategy. The advertised content seemed to be more messages carrying than any other form of malaria content delivery to the public.

The MOH (2012) conducted a study on malaria prevalence in the country. Data used was partly from the central statistics office. Questionnaires were employed to collect data on lower prevalence, treatment seeking behavior, ITN use and treatment status. The findings indicated that malaria messages were disseminated through constant malaria education on radio, print media and outdoor campaigns against malaria. The findings further established that messages such as the importance of sleeping under ITNs, seeking treatment for fever promptly, or allowing one's house to be sprayed during spray campaigns are an important part of the information, education. The findings also suggested that communication strategy

of NMCP and partner efforts to promote household-level utilization and penetration of malaria interventions. The study was a national wide while this study limited itself to Mtendere residential area of Lusaka District.

Masaninga et al. (2012) conducted a study in Lusaka on “*Mosquito biting and malaria situation in an urban setting in Zambia.*” The study analysed water bodies as sources of mosquito larvae (vegetable gardens, sewerage maturation ponds and foot paths) and, weather factors for possible effects on mosquito densities, species distribution and reviewed laboratory confirmed malaria cases and interventions implemented in the previous 5 years from 2009. Their findings were that there was no evidence of increased malaria cases despite reported increased mosquito biting but a district-wide and nationwide decline in malaria trends. The disseminated content was on mosquito biting times which were mostly in the evenings. The study does not confirm visiting local clinics to confirm if no one went to complain of malaria symptoms. The study does not justify that there was no malaria in Lusaka hence it is necessary for this study to look at the MPHEP in Mtendere area where malaria cases are still being reported.

The purpose of malaria prevention health education program aimed at taking the right information on malaria prevention and treatment to the people. In a study conducted by Nyirongo (2013) on Communication Interventions and their Role in Malaria Prevention and Prevalence in Kaole, a number of findings came up. The study showed that though awareness was high, knowledge about mosquito biting times, treatment and care of mosquito nets, how much water is sufficient to constitute mosquito breeding grounds among others, does not exist in most of the population. It might be from the same point of view that Mukonka et al (2015) argued that malaria messages seemed to have been put into practice effectively by the families that had a head of the house with an education attainment level above grade 9. This knowledge was the content that was imparted into the residents of the community to help them make more informed and correct decisions. This study delved into the contents of the MPHEP in Mtendere Township of Lusaka district.

A study on knowledge and acceptability of new malaria treatment policy by Kango (2005) revealed a number of issues. A cross sectional survey design was used and questionnaires were used to collect data in Chibombo District. The findings indicated that the residents had enough knowledge on the new treatment of malaria due to the various campaign messages people received. The findings further established that malaria education provided to both the patient and the relative on the bed side fosters change in behavior hence reducing the prevalence in the community. The findings could not be generalized to Lusaka because the study was done in a rural district while this study was done in the heart of Lusaka in an urban residential area of Mtendere.

#### **2.4 Challenges encountered during the process of conducting the Malaria Prevention Health Education Program (MPHEP)**

A number of studies revealed challenges which were encountered in the process of conducting malaria prevention health education in different parts of the world and Zambia. A number of issues came up which were pertinent to this study.

##### **2.4.1 Challenges encountered during the process of conducting MPHE from a global perspective**

There are many challenges that are encountered in the process of conducting Malaria Prevention Health Education Programs (MPHEP). Each of these challenges requires specific interventions to enhance the workability of the MPHEP. An understanding of the challenges encountered during the process of conducting the MPHEPs is at the fulcrum of a robust MPHEP. It is in this vein that various studies have been carried out to uncover these challenges.

A study titled, 'Re-imagining malaria in the Philippines: how photovoice can help to re-imagine malaria' piloted by Iskander (2015) revealed some of the challenges encountered in MPHEP. The paper was a response to a call for malaria to be re-imagined by: explaining why it needs to be re-imagined and offering one possible way in which this can be done. The primary aim was to critically examine how facilitating children to take their own pictures of

malaria could alter their understanding of it as well as the practices that they then engaged into prevent and treat it. Iskander (2015) alluded to failure of early eradication campaigns as the challenge of MPHEP.

A study by Way (2015) titled, *'The Invisible and Indeterminable Value of Ecology: From Malaria Control to Ecological Research in the American South'* was significant to this study. It was a case study of how science in the field can veer from mainstream thinking and official policy. Way (2015) established that the main challenge was that donors cut their funding soon after an appraisal as they deem it fit, pay attention mainly to their own hidden needs and motivations and not the needs of the receiving nation or agency. He also argued that funding for malaria research should not be diverted to other activities as it is key to the eradication of Malaria. The study only focused on Emory University Field Station, a malaria research station in southwest Georgia that operated from 1939 to 1958. It examined the station's founding, its fieldwork, and its place within the broader history of malaria control in America. It was therefore, necessary to conduct this study so as to understand the MPHEP challenges faced in Lusaka.

Iskander (2015) contends that failure of early eradication campaigns has been one of the challenges of MPHEP. This view is exemplified by the huge portion of funding for malaria which is invested in standardized technological solutions, such as bed nets, rapid diagnostic tests, and insecticide residual spraying, while little attention is paid to implementation challenges and conflicts between local needs and universal solutions (Hausmann- Muela and Eckl, 2015). The duo further state that despite recent biomedical-technological advances and increased financial commitments, malaria remains a pressing global health problem and the parasite reveals its endurance through resistance and resilience to current approaches.

In the same vein, Way 2015's findings are supported by Hausmann- Muela and Eckl (2015) in their study termed, *"Re-imagining malaria—a platform for reflections to widen horizons in malaria control."* The duo found that a huge portion of funding for malaria is invested in standardized technological solutions, such as bed nets, rapid diagnostic tests, and insecticide residual spraying, while little attention is paid to implementation challenges and conflicts

between local needs and universal solutions. The conception of the study by the duo was a work shop titled “*Re-imagining malaria: looking into, behind and beyond current priorities,*” convened in September 2014 by the London School of Hygiene and Tropical Medicine, brought together social scientists from eleven institutions who work in malaria research and control. With such a foundation it can be said that the study was based on abstract conceptualizations and not the real problems faced by the community hence the need for the current study.

#### **2.4.2 Challenges encountered during the process of conducting Malaria Prevention Health Education Program in Africa**

Africa has suffered the ugly consequences of Malaria in a variety of ways and the interventions towards mitigating these do not unfold without impediments. Roberts and Matthews (2016) conducted a study entitled, ‘*Risk factors of malaria in children under the age of five years old in Uganda.*’ The aim of their study was to investigate the relationship between the malaria status of children under the age of 5 years old in Uganda and selected socio-economic, demographic and environmental factors, as well as to identify significant risk factors associated with malaria. It was a complex survey design which used a generalized linear mixed model to test for associations between several independent variables and the response variable. The findings on challenges in MPHEP from Roberts and Matthews (2016) were that insecticide-treated nets (ITNs) and long-lasting insecticidal nets (LLINs) control measures alone were not sufficient in reducing the burden of Malaria. The study by Roberts and Matthews was confined to children under the age of 5.

There are many challenges encountered during the implementation of the MPHEP. Silweya (2014) adds that studies done in Sub-Saharan Africa have proposed the following barriers to prompt malaria prevention education: socioeconomic and cultural perceptions of the attributable cause of malaria, geographical barriers in the form of distance and mountains and non-availability of a health facility in the locality. He specifically noted that in the Malawian context, people living around Mulanje Mountains were not able to be reached so that malaria prevention education could be delivered to them. The factor of

distance was also mentioned by Phiri (2010) in his study called, '*malaria treatment and its challenges in Malawi.*' Phiri found that the people around Lake Malawi and Mulanje Mountain were not given the malaria education as needed because of lack of reliable transport for educators to reach there. As for the Zambian context, Mtendere has accessible areas through roads which are passable. There was need to uncover the challenges experienced during the process of conducting malaria prevention health education in Mtendere.

Another study by Mboera et al. (2005) in Tanzania found that more priority was given to HIV/AIDS as compared to malaria. In recent years, there has been an obvious shift in the priority given to malaria control in favor of HIV/AIDS. Although malaria is the leading cause of morbidity and mortality in Tanzania, HIV/AIDS was declared a national disaster in 2003. The study used quantitative methods of data collection whereas this study has used qualitative methods of data collection.

In a study by Makundi (2007) on 'Priority Setting on Malaria Interventions in Tanzania: Strategies and Challenges to Mitigate against the Intolerable Burden in Tanzania' among other issues that were unearthed was limited allocation of financial resources for malaria prevention, management, and control (PMC) activities. It was thus important for this researcher to uncover the major challenges of the MPHEP in Mtendere Township of Lusaka. Makundi (2007) also pointed out a human resource crisis in the health sector as another challenge.

#### **2.4.3 Challenges encountered during the process of conducting Malaria Prevention Health Education Program in Zambia**

In a study conducted by Rutagwera (2014) who investigated key factors that may be associated with the utilisation of insecticide-treated nets (ITNs) it was discovered that ownership did not necessarily mean utilization in this population. However, the study did not explore the reasons behind the lack of utilization. This study delved into the challenges as well as the possible solutions to the challenges encountered in the process of delivering MPHE in Mtendere Township.

The findings above are in conformity with Mukonka et al. (2014)'s conclusion about overwhelming Malaria burden in spite of the interventions. Mukonka et al (2014) did a study, 'High burden of malaria following scale-up of control interventions in Nchelenge District, Luapula Province, Zambia.' The purpose of the study was to report the high burden of malaria in Nchelenge District, Luapula Province, Zambia from 2006 to 2012 after seven years of control measures. The study aggregated information on cases of malaria, malaria deaths, use of malaria diagnostics, and malaria control interventions from 2006 to 2012 were obtained from the Nchelenge District Health Office. Trends in the number of malaria cases, methods of diagnosis, malaria positivity rate among pregnant women, and intervention coverage were analyzed using descriptive statistics. The conclusions drawn from the study were that despite high coverage with vector control interventions, the burden of malaria in Nchelenge District, Malaria remained high. The high parasite prevalence could accurately reflect the true burden of Malaria despite the interventions. The study, however, was based on secondary data sets of yearly aggregated information on cases of malaria. On the contrary, the current study is not a desk research.

In line with malaria communication research, the findings by Mutale (2009) in a study called, '*An Evaluation of the Communication Strategies Used by the National Malaria Control Centre to Combat Malaria in Zambia*' it was found that one of the challenges in MPHEP was very little evidence of malaria communication research. This challenge has led to limited capacity to segment and target audiences according to specific information needs. On the one hand, Mutale's study was a desk research based on document analysis and narrowly focused on communication strategies in Malaria prevention thus the current researcher saw it prudent to enquire on the challenges of MPHEP in Mtendere.

Other challenges in the process of delivering MPHEP were found by Nyirongo (2013) in his studies '*on the role that communication campaigns and interventions play in the malaria prevention and prevalence in Kaole Ward of Mansa.*' Trends have shown that even where MPHEPs and similar campaigns are implemented, malaria incidence has not reduced to

levels envisioned by the country and international projections such as the Millennium Development Goals (MDGs). Nyirongo used quantitative methods of data collection, the closed ended questions in the questionnaire which did not allow people to express their challenges. To ensure that people's views are heard on the challenges they faced regarding MPHEP, this study used focus group discussions and face to face interviews as methods of data collection.

Nyirongo (2013) went on to reveal that the populace were aware of the malaria prevention measures and the importance of the prevention implements such as the ITN, IRS, IPTp and environmental management but did not use them as required. He indicated that a huge portion of funding for malaria was invested in standardized technological solutions, such as bed nets, rapid diagnostic tests, and insecticide residual spraying, while little attention is paid to implementation challenges and conflicts between local needs and universal solutions. He saw that donor dependency was the greatest barrier to the eradication of malaria in most African countries. Besides, the study did not probe further on the solutions to the challenges of effective MPHEP. This research therefore went further by delving into the possible solutions to the challenges of MPHEP.

A study on *'Barriers to prompt and effective malaria treatment among children under five years of age in Mpika District,'* undertaken by Silweya (2014), brought out different challenges which the residents experienced. The study used the mixed method design that combined both quantitative and qualitative methods; analytical cross-sectional study and focus group discussions respectively. The findings of the study were that it was difficult for sensitization messages to reach out to all the community members as they had different engagements at different times. The findings tally with those of Mutale (2009) who noted that the lack of consistent curative measures to malaria in Africa because African countries waited for donor funding for them to carryout large scale malaria programs. The over dependence on the donor funding was a challenge in the malaria eradication and discrimination of malaria messages in Zambian communities.

Akakulubelwa (2000) pointed out that knowledge about Malaria prevention does not mean that the community will adhere to it in a study “*to determine knowledge, attitude and practices towards malaria prevention in Misisi Compound- Lusaka.*” It was revealed that despite high levels of knowledge regarding the cause, treatment and malaria prevention, 50% of the respondents had a negative attitude towards malaria prevention and 46% put the responsibility of prevention on health workers. The study did not discover the possible solutions to these challenges. It is therefore incumbent upon this researcher to explore the possible solutions to these challenges.

Another study was conducted by Silweya (2014) on “*barriers to prompt and effective malaria treatment among children less than five years of age in Mpika District.*” Qualitative methods of data collection were used for the study. The findings were that out of the total sample size of 380 participants, only 14 percent of children diagnosed with malaria received prompt and effective malaria treatment. Moreover, non-availability of anti-malarial drugs at health facilities and the use of herbal medicines were reported to be associated with delays in seeking appropriate malaria treatment in focus group discussions. The findings of the study highlighted the factors that negatively influence access to prompt and effective malaria treatment in a rural setting of Zambia. The study did not look at barriers among adults and did not explore the urban situation. Neither did it explore possible solutions to the barriers unearthed. It was thus crucial that this study was undertaken so as to provide a synoptic view of an urban MPHEP activities that include adults for comprehensiveness.

Masaninga et al. (2012) carried out a study known as ‘*Mosquito biting and malaria situation in an urban setting in Zambia.*’ The aim of the study was to investigate the underlying causes of the increased mosquito problem and to determine whether there was any increase in malaria cases in urban and peri-urban areas of Lusaka. Masaninga et al. (2012) found challenges in MPHEP include socio-economic activities, including vegetable gardening located 5 to 10 m away from the sewage ponds contributed to the proliferation of mosquito populations during the dry season. It also increased numbers of mosquitoes biting people that were experienced starting in the afternoon around 16.00 to 17.00 hours. The study was

carried out 4 years ago and thus the need to build on it so as to establish the current challenges and consequently the solutions towards malaria eradication.

According to MOH (2010), there was a review of malaria programs in Zambia through the National Malaria Control Centre. The findings are described in the following paragraphs. Inadequate and unpredictable funding, leading to erratic supplies of malaria commodities and ICE materials hence disruptions in the MPHEP. MOH's non-commitment to national procurement plans led to frequent emergency orders of stationary, teaching aids and other materials for use during the MPHEP activities to mitigate situation. There was also a challenge of insufficient funding for infrastructure development, leading to poor transport and storage infrastructure systems such as roads and buildings at lower levels. MOH (2010) further elaborated on the lack of a comprehensive post-market surveillance system. Insufficient transport for distribution of medicines from the districts to health facilities could not be overemphasized as a weakness in the process of conducting MPHEP. The country was also found to be grappling with poor capacity for quality assurance for managing educational programs.

Some procurement for malaria commodities are handled by procurement agents, particularly UNICEF. Funding for malaria commodities, from both the government and cooperating partners, is inadequate, leading to stock-outs. Further, the support from cooperating partners is unpredictable and inconsistent, and over-dependency on this support has implications on the long-term sustainability of the malaria program, particularly the procurement of MPHEP commodities.

## **2.5 Solutions to the Challenges of Malaria Prevention Health Education Program.**

In the light of the perceived challenges, solutions were proposed by various scholars in the different studies that were conducted in different parts of the world. The discussion below considered of solutions regarding the challenges encountered in the process of MPHE program from the world perspective, African and Zambia perspectives.

### **2.5.1 Solutions to the Challenges on MPHEP from a global perspective**

A study by Fekri et al. (2014), “*Malaria situation in an endemic area, southeastern Iran,*” was conducted by gathering data from Jask County health center, from 2006–2010. The study was a knowledge, attitude and practice study. The findings indicated that there solutions to Malaria prevention included integration of vector management by using long lasting insecticide treated bed nets, active case detection and treatment by implementation of mobile teams and increasing financial sources of malaria control program. Knowledge, attitude and practice of people were good in malaria control and prevention. The study by Fekri et al. is different from the current study as it was a knowledge, attitude and practice (KAP) study while this study is a case study that has different idiosyncrasies from the KAP study. It is therefore imperative to explore why Malaria prevalence has persisted in Mtendere.

In a study by Dhawanet et al. (2014), “*Malaria-related knowledge and prevention practices in four neighborhoods in and around Mumbai, India.*” The study was a cross-sectional comparative study and employed structured interviewer-administered questionnaires that were administered to a stratified random sample of 119 households between 16 December 2010 and 30 January 2011. The findings were that respondents generally knew that bed nets were an effective prevention strategy, but only 30% used them, and only 4% used insecticide-treated bed nets. The study concluded that, malaria control campaigns should be tailored according to the knowledge gaps, practices, environments, resources, and preferences in different areas of the city, using the interpersonal and media channels most likely to reach the target audiences. Malaria control efforts involving bed nets should emphasize use of insecticide-treated bed nets.

WHO (2015:54) states:

*WHO developed a Global technical strategy for malaria elimination 2016–2030. The strategy was developed under the guidance of a Steering Committee that comprised leading malaria technical experts, scientists and country representatives. During the strategy development process, WHO consulted all affected countries through a series of seven regional*

*consultations and, in July–August 2014, held a public web consultation. The strategy was developed in close alignment with the RBM Partnership’s Action and investment to defeat malaria 2016–2030 – for a malaria-free world to ensure shared goals and complementarity.*

WHO is working on developing regional implementation plans to roll out the technical strategy. The Global technical strategy for malaria 2016–2030 sets the most ambitious targets for reductions in malaria cases and deaths since the malaria eradication era. The vision of WHO and the global malaria community is a world free of malaria. As part of this vision, the strategy sets ambitious yet feasible global targets for 2030 with milestones for 2020 and 2025 (WHO, 2014).

Malaria is a leading global killer especially of children and a consistent driver of poverty worldwide. Half of the world’s 3.3 billion people living in 109 countries are at risk of malaria (WHO, 2014). In 2000, malaria caused between 350-500 million illnesses and more than one million deaths, (WHO, 2014). To combat this problem, The Roll Back Malaria Partnership (RBM) was formed in 1998 to align global health and development advocates, raise malaria on political and development agendas and unite key stakeholders behind an ambitious but achievable strategy to end malaria worldwide. The RBM strategy includes moving quickly and decisively to reduce malaria cases through the widespread application of existing public health measures. WHO (2014) further hinted on production of brochures about Malaria prevention in the workshops which would help the members of staff who did not attend a certain workshop to acquire the knowledge by reading. It was imperative to focus global attention on the need for new technological advances and resources to eliminate malaria in all endemic areas in the future (MOH, 2012). What was not clear was how the malaria education challenges were being handled to realize a number of solutions in Zambian Townships like Mtendere in Lusaka.

### **2.5.2 Solutions to the Challenges on Malaria Prevention Health Education Program from an African perspective**

There are a number of challenges in the effective implementation of MHPEP in the world. In a study conducted by Mboera (2005) on *Using Retrospective epidemiological Data to Determine Prone Areas and Development of an Epidemic early warning System in Mpwapwa District, Central Tanzania*, used a quantitative design. He cited malaria drug resistance to be caused by the lack of effective provision of education with regards to the intake of the drugs. Some patients took less numbers of coartem citing that they were too many to be taken at the same time, hence some patients skipped medication. The study recommended that health workers administering the drugs needed to give enough education to the patient to avoid drug resistance. It is therefore significant that MPHEP is intensified to avoid drug resistance. This study was designed to monitor how the MPHEP was benefiting the Mtendere community despite the challenges whose solutions depended on the workers and community themselves.

The other solution proposed in other studies was the need for governments to provide more training for capacity building. Among the scholars are Roberts and Matthews (2016:9) pointed out that;

*Although there has been a significant increase in the use of mosquito nets, particularly ITNs and LLINs, these control measures alone may not be sufficient... Supplementing these control measures with education of appropriate and consistent use of ITNs and LLINs, as well as education of practicing safe living habits, such as reducing outdoor activities during peak biting hours of a mosquito, can go a long way in aiding the reduction of the burden of malaria....*

The above study was on risk factors of malaria in children under the age of five years old in Uganda. A survey was conducted which included lab tests on a number of children with malaria. Other findings noted that there was need to have a continuous spraying program unlike the annual spraying that was conducted mainly in September every year.

Su et al. (2014) carried out a study called, *'Myths and facts on malaria: A pilot study of community oriented resource persons in rural communities in Anambra, South-east Nigeria.'* The study aimed at determining the prevailing myths and facts about malaria in a developing country. A cross sectional descriptive study was done in 2014 among 284 Community-Oriented Resource Persons in 3 rural communities in Anambra. The study used pre-tested semi-structured questionnaires and Focus Group Discussion Guides for data collection. The study concluded that expectedly, there was a significant relationship between belief in malaria myth and educational level. Respondents with lower educational qualification tend to believe more in malaria myths. This goes to show the importance of literacy in disease knowledge and management. The study further concluded that it is important for more educational enlightenment program on malaria causation, prevention and treatment strategies to be conducted from time to time to improve people's knowledge especially at the community level.

The other challenge which has been faced in the MHPEP was the misuse of the ITN by the community members in the rural areas. Twerele (2010) in a study entitled *'Solutions to Constraints in Malaria Alleviation in Tanzania proposes a number of solutions.'* Among others, he mentioned that the malaria prevention education program should be centred around the malaria prone areas so that it can be effectively done. National wide education on malaria failed to yield tangible results because the most affected people who never got the educational messages were still dying of malaria despite having ITN. The solution was to make the people around Lake Tanganyika realize the importance of using ITN effectively. It is then important for this study to investigate how the solutions from the MPHEP were derived from the challenges faced in Mtendere residential area.

Studies conducted by Red Cross (2010) showed that the HMM project shows that a community approach to malaria preventive education and treatment works. Even in the most remote areas, providing free, effective medicines to trained local volunteers can alleviate both the malaria disease burden and the strain on health systems. Artemisinin based combinations require local communities to become involved in the fight, as efforts move

beyond prevention towards prompt, effective treatment at the household level, building on the success of net distribution campaigns.

Among the solutions to the challenges faced, Chizuni (2014) recommended a decentralized strategy for combating malaria. Thus allowing districts to determine the type of malaria prevention methods they would use according to the available funding. Despite the allocation not being enough to run all the programs, the study called for prudent measures of funds management. Phiri (2010) proposed that the Malawian government should employ permanent NHCs so that they could become responsible with the simple transport offers they were given like bicycles. This was seen as a remedy to the government sustaining the unpaid volunteers whose work could not be neglected in the eradication of malaria. He further advised the government to look beyond their budget and include the community to participate in the information discrimination process.

### **2.5.3. Studies on solutions on Malaria Prevention Health Education Program in Zambia**

Chanda et al. (2012) conducted a study on '*Transmission Attributes of Peri-urban Malaria in Lusaka, Precedent to the Integrated Vector Management Strategy: An Entomological Input*'. This study was conducted in two spatially segregated and randomly selected peri-urban locations of Lusaka district; Chazanga and Kalikiliki. Data was collected through standard entomological and epidemiological protocols and a pretested structured questionnaire. The findings from the study were that there were low knowledge levels on vector control tools. This study also confirmed a local malaria transmission paradigm. The study concluded that the epidemiology necessitated deployment of an integrated vector management strategy with intensified information education and communication. Chanda's study followed a sudden outbreak of malaria cases and therefore, may not have shown a true reflection of the MPHEP.

*An evaluation of the communication strategies used by the national malaria control center to combat malaria in Zambia* was conducted by (Mutale, 2009). He used a qualitative approach while his focus was on mass communication and the strategies used. In his findings,

he emphasized that there should be sharing of notes in the morning briefings amongst the workers aimed at disseminating skills so that they bridge the gap between those that have the needed skills and those that do not have the skill. He further mentioned that better strategies in malaria education should be used like newspapers, posters that are visible, radio and television among others. His study did not focus on MPHE which this study looked at.

With regards to transport for community mobilization for both the staff and the NHCs, the MOH (2010) provided bicycles for the malaria programs country wide. However, the bicycles were not well serviced hence they were packed. There was lack of ownership by the users which portrayed a bad attitude towards the property they used. Being given on a permanent basis the bicycles might motivate workers to show concern and improve on the negative attitude. In addition, Mukonka et al. (2014) state that more sensitization should be done to reduce the myths that surround the aftermath of IRS. Such will enable a number of community member's open doors to allow the IRS team to eradicate malaria in the compounds. All these interventions would depend on the effectiveness of the transport system used by the clinic staff.

On the other hand, Sichande (2013) in his study concluded that tertiary education of the head of households is important in determining ITN utilisation by the children of between 5-19 years old. Therefore, reaching universal coverage on ITNs accompanied by health education especially targeting those with lower education levels could lead to equity of utilisation across all age groups. The study, however, had only focused on ITNs without consideration of other malaria preventive factors such as IRS and use of repellants during the MPHE. Mukonka et al (2014) disputed that more sensitization should be done to reduce the myths that surround the aftermath of IRS. Such would enable a number of community member's open doors to allow the IRS team to eradicate malaria in the compounds. He further said education may not be the factor in this case. It was therefore, important that this study looked at the benefits and possible improvements of the malaria prevention health education as a whole and not just focusing on one factor.

## **2.6 Summary of the Chapter**

This chapter has informed and shaped the study as it has allowed the researcher to interact with different existing literatures pertaining to Malaria Prevention Health Education. The process of literature review has also provided a critique of the methodologies used in similar studies. Studies from global, regional and national perspectives have shown that there has been a reduction in malaria prevalence. However it still persists in most parts of the world especially in the sub Saharan region.

## **CHAPTER 3 METHODOLOGY**

### **3.1. Introduction**

The previous chapter reviewed the literature related to the study. This chapter addresses aspects of how data collection and analysis were done. The chapter discusses the research design, population, sample size, sampling procedure, research instruments, data analysis procedures and limitations of the study. A summary is given at the end of the chapter.

Methodology as a term in research means the steps taken to have an activity started and ended systematically, (White, 2003). Methodology is also defined as a coherent procedure which outlines specific steps to be followed when answering the stated objectives of the study (Kothari, 2004). This study was therefore guided by the following methodology.

### **3.2 Research Design**

There are a number of research designs which a study can adopt depending on the genre of the topic at hand. Tavakoli (2012) notes that a research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose. Other scholars like Marczyk, DeMatteo and Festinger (2005) assert that a research design refers to the plan used to examine the question of interest.

This study employed a case study design and engaged a mixed method. Both qualitative and quantitative approaches were employed. A case study has been defined as an investigation that seeks to describe a unit holistically and in detail (Msabila and Nalaila 2013). The case study method is a very popular form of qualitative approach which involves a careful and complete observation of a social unit, a person, a family, an institution, a cultural group or even the entire community (Kothari, 2004). The research design was appropriate for the study because the study required the researcher to interact with the respondents in their natural setting so that a deep understanding of the problem would be appreciated thoroughly.

In order to obtain valid and reliable results in the study, the researcher triangulated the research instruments. Triangulation is viewed as a mode of enhancing validity and reliability of results. Tavakoli (2012) observes that triangulation involves using multiple research techniques and multiple sources of data in order to explore the issues from all feasible perspectives (Ridenour and Newman, 2008). There are different types of triangulations. These include theoretical triangulation, investigator triangulation, methodological triangulation, research instrument triangulation and research site triangulation (Cohen, et al., 2011). The researcher in this case, used a semi structured questionnaire, interviews and focus group discussions. Tavakoli (2012) adds that the advantage of triangulating research methods is that the weakness of one method can be compensated for by the strength of the other.

### **3.3 Universe population**

Universe population refers to the total number of the items or units in any field of inquiry or the total number of items about which information is desired (Kothari, 2004). Target population is also defined as the population from whom the findings will be realized (Msabila and Nalaila, 2013). Population or universe means, the entire mass of objects set for observation in a given study. The sample observations provide only an estimate of the population characteristics (Singh, 2006). The target population for this research was all the residents of Mtendere Township, NHCs, women at the under-five clinic, suspected patients of malaria and members of staff at Mtendere Clinic.

### **3.4 Sample size**

Sample size is defined as the number of participants selected from the universe, (Kasonde-Ng'andu, 2014). Sidhu (2014) defines sample as a small proportion of the population selected for observation and analysis. The sample for this study was 1 sister in-charge, 1 EHT, 9 nurses, 10 NHCs, 10 women at the Mother and Child Health (MCH) department, 20 patients suspected to have malaria and 69 community members of Mtendere residential area who sought health services from the local clinic. The total sample was 120. This sample was drawn from Mtendere Township being the area which had recorded some malaria health education activities in the previous years.

### **3.5 Sampling procedure**

Sampling technique or procedure is the process of selecting units from the universe population of the researcher's interest (White, 2003). Kasonde-Ng'andu (2014) adds that a sampling technique is that part of the research plan that indicates how objects are to be selected for the study. In order to come up with the actual sample of the study, random and purposive sampling procedures were adopted.

#### **3.5.1 Random sampling**

Msabila and Nalaila (2013) assert that random sampling techniques are those where all the individuals in the population are given equal chances of being selected. Therefore, the study

was conducted at the Mtendere clinic which gave chance to all the Mtendere township members to take part in the research. The researcher distributed questionnaires to the 69 respondents who were at the clinic at so as to collect information from them on the topic under study. Random sampling was also used to come up with the following focus group discussion participants; 20 suspected malaria patients and 10 women at the under-five clinic. The process of sampling was that; a box was put at the centre of the Out patients' department (OPD) which contained written tags of "yes" and "no." "Yes" meant the holder will participate while "no" meant that the person would not participate in the FGD. These were selected because they were residents who were affected and benefited from the malaria prevention health education program.

### **3.5.2 Purposive sampling**

Kothari (2004) defines purposive sampling as the sampling method that involves deliberate selection of particular units of the universe for constituting a sample which represents the universe. In purposive sampling, the investigator selects a particular group or category from the population to constitute the sample because this category is considered to mirror the whole with reference to the question (Sidhu, 2014). In this study, all the 9 nurses (health workers), the 10 neighbourhood health committee members (NHCs), 1 Environmental Health Technician and the Sister in-charge were purposively sampled because they were the officers concerned with malaria health prevention education.

### **3.6. Data collection instruments**

Instruments of data collection are defined as the tools that the researcher uses to fulfill the research design (White, 2003). There are a number of methods used for data collection for a qualitative design. The most important method of data collection is through observation which takes forms of participatory, conducting interviews, document study and conversations among others. In order to achieve the research objectives, this study adopted three research instruments namely; focus group discussion guides, face to face interviews guides and an unstructured questionnaire. The questionnaire was used in order to measure the consistence of the results obtained from the qualitative instruments.

### **3.6.1 Focus group discussion**

A focus group discussion is related to interviews in some questioning techniques. Focus group discussion involves several participants in a group discussion, often with a facilitator whose goal is to keep the group discussion targeted on specific topics (Gass and Mackey, 2005). A focus group discussion is used to collect data on a qualitative topic from a number of people at the same time. This helped the researcher to accommodate divergent views while keeping the topic under discussion on track. The study employed focus group discussions so that different views could be collected on the topic under study.

### **3.6.2 Interviews**

The researcher used unstructured interview guides to collect data from the EHT and the Sister in-charge at the clinic because they provided a rich source of information. Structured interviews imply that the interviewer does not follow a pre-planned list of questions. He enjoys full freedom of asking questions without following a given order (Ghosh, 2013). According to Marczyk, DeMatteo and Festinger (2005), an interview is a more reliable method of data collection because the researcher gets information directly from the affected person together with the nonverbal language.

### **3.6.3 Questionnaire**

A questionnaire is a research instrument type which has a listed number of printed questions used for data collection (Ghosh, 2013). In the view of Brown (2001:6), questionnaires are "any written instruments that present respondents with a series of questions or statements to which they are to react to either by writing out their answers or selecting them among existing answers." This research used an open ended questionnaire in the collection of data. Gass and Mackey (2005) say that open-ended questionnaire items, on the other hand, allow respondents to express their own thoughts and ideas in their own manner, and thus may result in more unexpected and insightful data. An open ended questionnaire was in this study used to collect data from a large population regarding the benefits and possible solutions to the challenges of the MPHEP.

### **3.7 Data collection procedure**

In order to visit the research site for data collection, the researcher got a letter of introduction from the Directorate of Post Graduate Studies. The researcher then sought permission from the Lusaka District Health Director and the officer in-Charge of Mtendere Township clinic. The researcher saw the EHT who later introduced her team, the NHC. It was through the NHC that the questionnaires were distributed to the selected sample. A focus group discussion was held with mothers who brought children for under five clinic. Another one was with expecting mothers, NHCs and the last one was with patients suspected to be suffering from malaria. Lastly, face to face interviews were conducted with the EHT and the sister in-Charge at Mtendere clinic.

### **3.8 Data analysis**

The process of data analysis involves making sense out of text and image data. It involves preparing the data for analysis, moving deeper and deeper into understanding the data, representing the data, and making an interpretation of the larger meaning of the data (Rossman and Rallis, 1998). Data collected using a questionnaire was analyzed thematically using the excel package which generated charts. Data collected using interviews and focus group discussions were analyzed by first identifying emerging themes. Common themes were grouped together and conclusions were drawn.

### **1.9. Limitations of the study**

Limitations in research enable the researcher to identify potential weaknesses of the study that might make the findings be questionable (Creswell, 2009). Kothari (2004) adds that limitations for a research study include the challenges the researcher foresees or went through that might influence the validity of the study. With regards to this study, the study was limited to Mtendere Township of Lusaka District in Lusaka Province. Therefore, the findings cannot be generalised to the entire District, Province and country due to the limited sample researched from since different parts of Zambia have different factors contributing to the success and challenges of the MPHEP.

The researcher also had challenges with some respondents who failed to return the questionnaires, with others returning them partially answered. Further, some respondents lost the questionnaires while others changed accommodation. As a way forward, the researcher exercised patience with the participants and kept replacing the lost questionnaires until they were all compiled and handed in.

### **1.10. Summary of the Chapter**

This chapter has discussed the research methodology which was used in the study. The study employed a case study design which allowed the researcher to conduct an in-depth study on an enquiry into the benefits and possible solutions to the challenges encountered in the process of conducting MPHEP in Mtendere Township. Included in this chapter were: research design, study population, sample size, data collection procedure, data analysis and limitations of the study. The population for the study included all Mtendere Township residents and Mtendere Clinic members of staff. The sample size of the study was 90 respondents. A questionnaire, Focus group discussions (FDGs) and interview guides were used to collect data from the respondents. The next chapter provides the research findings.

## **CHAPTER FOUR**

### **PRESENTATION OF FINDINGS**

#### **4.1 Overview**

The previous chapter discoursed the methodology that was used for this study. This chapter presents the findings of the study on '*an enquiry into the benefits and possible improvements of the Malaria Prevention Health Education Program (MPHEP) in Mtendere Residential Area.*' The findings are based on the following research questions:

1. What are the benefits of the Malaria Prevention Health Education Program (MPHEP)?
2. What is the content of the Malaria Prevention Health Education Program (MPHEP)?

3. What challenges are encountered during the process of conducting the Malaria Prevention Health Education Program (MPHEP)?
4. What are the possible solutions to the problems encountered during the process of conducting the Malaria Prevention Health Education Program (MPHEP)?

To answer the stated research questions, the researcher interviewed the Environmental Health Technologist (EHT) and the Sister in Charge (SIC). Focus group discussions were held with 10 suspected malaria patients, 10 neighbourhood health committee members (NHC) and 9 nurses. A semi structured questionnaire was administered to 69 general patients at Mtendere clinic.

#### **4.2. Research findings**

The research findings were grouped according to the research questions that guided the study. The answers were put in sub headings in line with the genre of the research instruments used to obtain the answers. Findings from the qualitative instruments have been themed and discussed so as to bring about coherence in the presentation. Quantitative data was entered into the excel sheet for analysis. Charts and different diagrams were used to show what the respondents thought about the questions. Firstly, the findings from the interview with the EHT will be presented.

#### **4.3. Findings on the research question: What are the benefits of the Malaria Prevention Health Education Program (MPHEP)?**

The research question was answered by the EHT, sister-in-Charge, nurses, NHCs, women at the under five clinic and suspected malaria patients who came to the clinic.

##### **4.3.1 Findings from the Environmental Health Technologist on the question; What are the benefits of Malaria Prevention Health Education Program?**

The Environmental Health Technologist (EHT) outlined some benefits of Malaria Prevention Health Education. She noted that the distribution of Insecticide Treated Mosquito Nets (ITN) to children and expecting mothers was key to the reduction and possible elimination of malaria in the community. She also mentioned that houses and buildings that needed spraying were first visited and education on the significance of spraying in the community was

provided to the dwellers. Precautionary measures were also explained to the occupants of the different houses and buildings. She was also quick to say that:

*I train all the officers in this community, I mean the neighbourhood health committee members on the importance of using ITN and malaria prevention. I have seen them tell the community the significance of eradicating malaria. In short, they pass the education I give them to the community hence we have a reduction in cases of malaria.*

It was also recorded that it was the work of the EHT to follow up the patients who had malaria in the community and usually malaria tests are done on every person in the affected household whether they had no history of travelling out of the community and town or not. The EHT and the NHC members usually used Rapid Diagnostic Tests (RDTs) to diagnose malaria in the affected houses.

It was also heard from the EHT that they larvicide the edges of the streams and the latrines in the community. In order to have an effective job done, the EHT said that:

*I ensure that I teach the NHC members how to larvicide the streams and the water logged areas in the community during and after the rain season so that the hotspots (breeding areas) are eliminated.*

After larviciding, a health talk or education on malaria prevention is given to the community. Through this health talk, community members are told to clear stagnant water in the surroundings, slash the tall grass and to be closing windows and doors early in the evening to protect themselves from mosquito bites.

#### **4.3.2 Responses from the Sister in-charge**

The sister in-charge was interviewed in order to determine the benefits of MPHEP in Mtendere Township which was within her jurisdiction. She said that there was a reduction in malaria prevalence in all the 10 zones of Mtendere Township.

With regards to MPHE strategies the SIC responded that:

*The prevention strategies that the clinic used to teach the community include; Indoor Residual Spraying (IRS), Intermittent Preventive Therapy (IPT) of pregnant women, use of ITNs and prompt diagnosis and treatment of malaria cases. These are aimed at achieving a malaria free Mtendere MPHE strategies have helped to reduce malaria cases significantly.*

She gave an example of how a particular woman whose under 5 children used to frequently have malaria because she was not making them sleep under an ITN. She said:

*The lady used to sell the nets instead of prioritizing the health of her children. However, following the MPHE that she received later she then realized that the ITNs were more important as they could protect her family from malaria than the little money she got from selling them.*

She further alluded to the fact that reported cases were mainly from people with a history of having had travelled out of Lusaka. She also said

*Most lab results showed negative malaria results; a down ward trend of the malaria burden in Lusaka. It was also stressed that the clinic had an active malaria contact tracing facility that allowed them to get to the source of the malaria and to treat the household.*

The sister-in-charge also responded that:

*People with misconceptions about malaria transmission had greatly benefited from MPHE as these had been corrected. The correction occurred through the health talks which were conducted by the EHT and the NHCs at the OPD and in the community when they went for community outreach programs in the 10 zones.*

She also reported that:

*The MOH facilitated workshops for updates on malaria prevention strategies, drug resistance and new drug regimes. These were attended by the health workers and these came to teach the NHCs who came from the 10 zones of*

*Mtendere community. They also taught their communities the new developments in their respective communities.*

#### **4.3.3 Responses from the Focus Group Discussion (FGD) with the Neighbourhood Health Committee (NHC) members**

This category of the findings came from the neighbourhood health committee (NHC) members who represented the larger community of Mtendere. The researcher used a focus group discussion with the NHCs to answer the question regarding benefits of MPHEP in Mtendere residential area. There were 10 NHC members each representing a zone of Mtendere residential area. A number of responses were received from this group during the FDG about the benefits of MPHEP. The first question sought to establish the clients for the NHCs in the Mtendere community.

One of the NHCs submitted that:

*The clientele included women, pregnant mothers, children, men and the malaria patients in the various zones. These individuals are the target of the MPHEP because they are community members who are at risk of catching malaria and they are the people who look after their family members.*

The Zone 3 leader mentioned that:

*We target this group of community members because if they had the much needed knowledge about malaria, they would be able to help the community fight it by putting precautionary measures in place to prevent and cure it.*

The NHCs shared a common view that the MPHEP had a number of benefits that it carried in its implementation in Mtendere community. One NHC member stressed that:

*It has brought various improvements to the lives of the community members. This is seen in the number of community members that is increasingly asking for ITNs and registering for more of the ITNs. This is a good sign that the MPHEP is being adhered to by Mtendere community members.*

They also agreed that different categories of community members benefited from the MPHEP in various ways. One of the respondents alluded to the fact that pregnant women benefited greatly by receiving knowledge about how to protect themselves and their unborn children from Malaria.

One female respondent submitted that she gained knowledge from health talks and explained that:

*Ninapunzila kusewenzesa ma net pogona na bana banga nthawi zonse. Kuchoka apo, ine nabanja yanga sitidwala malaria. Nikayenda mukupunzisa anzanga, bamamvelela chifukwa ndine chisanzo kulibeve. Ku zoni yanga, matenda ya malaria yanachepa.*

English version. *(I learnt to use nets when sleeping with my children all time, from there, my family and I do not suffer malaria. When I go to teach my friends, they follow because I am their example. In my zone, the disease has reduced)*

It was also brought to the researcher's attention that the NHCs were key in the distribution of the ITN in the community to the pregnant women and infants. This was because they are the people who knew; the community members well, where they stayed and when they would be found home. Another respondent contributed that:

*In my zone, I first teach them how to mount the ITN in the house before I give out the net in the community. I demonstrate how to tuck the ITN in with the help of a blanket as it should be done on a bed. Then, I tie the ITN to the nearby objects and fold the net to ensure that the blanket is completely inside and these lessons help to reduce malaria cases.*

From such elaborate explanations, respondents established that they gave practical education to the community members regarding the usage of ITN for the sake of preventing and curbing malaria.

One respondent put it on record that:

*We regularly visit pregnant women in the community who have not been to the clinic for ante natal and we sensitized them on malaria prevention, safe delivery and other health related issues. We also ensure that pregnant women who have been to the clinic are given fansidar three times during the course of the pregnancy.*

It was also stressed that the other benefit that MPHEP provided was that it allowed the NHCs an opportunity to sensitize the community on the merits of IRS hence fostering acceptance and compliance among the community members with the spraying teams. This cooperation brought about efficient IRS of houses in Mtendere community which resulted into a reduction in malaria cases amongst residents. A female respondent added that:

*Many people complained that the IRS left the houses dirty and others even refused to have their houses sprayed for fear of difficulties in breathing and cleaning the house. But after I talked to the concerned people about how to protect themselves from the effects of the IRS chemicals, they realized that those effects can be avoided and they agreed to have their houses sprayed.*

The NHCs agreed that their income was no longer used for malaria treatment but it was reserved for better projects. The children too were consistently attending school because after the IRS, the mosquitoes had reduced and no cases of malaria were recorded. A female respondent added that:

*Ine nabanja yanga tinali kudwala malaria kwambili chifukwa tinakana kutibatile mankwala munyumba yatu. Pamene bananisanka kuti ninkale mu NHC, ninapunzila ubwino uli mu IRS. Banzanga tinalikukana nabo ninayendako nakubapunzisa ubwino wa IRS. Lomba tilibe malaria kwatu ku zone.*

*English version: (my family and I used to frequently have malaria as we used to refuse to allow the IRS team to spray in house. When I was made member of*

*the NHC I learnt the importance of IRS and I now allow them to spray. Since then we do not have malaria in my zone).*

The NHCs mentioned that they had benefited from the MPHEP in the sense that they were empowered with the much needed skills of malaria prevention through the use of ITNs, IRS and IPT for the pregnant women. These activities have greatly reduced the malaria burden in Mtendere. With the acquired knowledge about malaria, the few people that show signs of malaria were promptly tested and diagnosed then referred for treatment. This has reduced unnecessary congestion at the health center said one of the NHC members.

#### **4.3.4. Responses from the Focus Group Discussion (FGD) with the nurses**

The next category of respondents was that of nurses of Mtendere clinic, whose work experience varied from one year to seventeen years of service. Four had worked at the clinic for two years while the rest had been working at Mtendere clinic for more than three years. A focused group discussion was conducted with 9 nurses in sets of 4 and 5. 4 nurses were in the night duty and 5 were in the day shift. The focused group discussion was aimed at providing the answers on the benefits of MPHE to the community.

The nurses outlined the benefits of the MPHE as advantageous to the infants and the mothers because the morbidity and mortality rates due to malaria had reduced. An experienced nurse remembered that:

*Before the MPHE was fully launched in this clinic and the surrounding community, I remember children, their mothers and the aged used to die almost every day in this clinic. It is because people had less information about malaria prevention. But now, we even go for one month without receiving a serious case of malaria.*

The respondents agreed that the launching of the MPHEP had brought easy access to ITNs in the community which had been very expensive for the poor. The MPHEP came with a package of ITN distribution to the community especially pregnant women and under-five children who are the main victims of malaria. A respondent noted that:

*Expecting women used to miscarry before the MPHEP program was launched here. After the launch, the women are given ITNs and are told how to protect themselves from malaria and other diseases in their community. With such education, I have not recorded cases of pregnant women who have been coming for ante natal miscarrying because of malaria related complications.*

The nurses also shared a view that the MPHEP had greatly benefited the Mtendere community. This was so because the NHCs had been empowered with malaria prevention knowledge which they were disseminating. It was established that women and children who were more affected by malaria were receiving knowledge through the NHC members. One nurse recounted that:

*As nurses, we tell them to close windows and doors early to avoid mosquitoes entering the house when the patients come for medical attention. We also tell them to bring their children to the clinic as soon as they suspected malaria through various symptoms that we have taught them to identify such as; body hotness, vomiting and loss of appetite.*

The nurses further alluded to the fact that they also encouraged the families to retreat their ordinary mosquito nets every six months thus reducing the levels of mosquito bites and consequently malaria transmission. They also gave credit to the EHT and the team of NHCs for their hard work with the IRS program which had supplemented the health talks to the patients they taught.

#### **4.3.5. Responses from the Focus Group Discussion (FGD) with women at the under 5 clinic**

The researcher held a focus group discussion with women at the under 5 clinic so as to gather their views on the benefits of the MPHEP in Mtendere Township. A FDG was organized that comprised of 10 women at the under 5 clinic. The women had lived in Mtendere for more than a year and had brought children for under 5 clinic services.

The women at the under 5 clinic mentioned a number of benefits that they had experienced due to the MPHEP. They cited free reception of mosquito nets and detailed illustrations on how to use them. One respondent said that:

*Bamatipunzisa kugona muma net nabana batu noti langiza mongenesela net mu nyansi mwa mattress kuti ba mosquito basazituluma. Baka tilangiza bamatiuza kuti tikazigona mu ma net ntawi zonze. Kuchokera pamene nina yambila kukonka ma punzilo ya MPHEP banja yanga yonse inaleka ku dwaladwala malaria.*

English version: *They teach us that we should be sleeping under ITNs and they show us how to fold the net under the mattress so that mosquitoes do not bite us. After showing us they tell us that we should be sleeping under the ITN all the time. From the time I started following the messages of MPHE, my family has never suffered from malaria.*

Another benefit that was forwarded was that MPHEP had enabled the women to stop spending time seeking medical attention as was the case before they started using ITN. One of the women had this to say “*we are now able to attend to income generating activities as opposed to queuing up at the clinic due to malaria.*”

The women were also able to mention other benefits of MPHEP like the fansidar dosage which they received throughout their course of pregnancy. One of the women mentioned that

*We are taught how to identify signs of malaria and to seek medical attention promptly. I have learnt that body hotness, body weakness, nausea and vomiting are signs of Malaria. This knowledge had helped me to keep my family healthy by ensuring that i look for malaria signs and symptoms in my family members and quickly seek medical attention. Through the MPHEP, our families no longer suffer from malaria as frequent as they used to and when they had malaria, it was not as severe as it used to be due to early treatment seeking behavior.*

The women agreed that all these advantages were realized following the birth of MPHEP.

#### **4.3.6. Responses from the Focus Group Discussion (FGD) with patients that had malaria**

Following the need to provide answers to the research question on what the benefits of MPHE were, a FGD with 10 patients that had malaria was constituted. These came from different areas of the Mtendere community. The respondents were of different age groups and they had been in the same community for more than five years, meaning that they had better experience of how it was before the implementation of the MPHEP program. To respond to the question on how well they benefited from the MPHEP, they said that they had learnt malaria was a killer disease hence it was supposed to be treated at the clinic not anywhere else. One parent who had a child admitted to the clinic lamented that:

*I have learnt malaria kills because my neighbour's child died some few years ago and died of malaria because they took him to a herbalist where herbs were given without taking blood slide. Because of this, I usually take my children to a government clinic like this one.*

The respondents also said that they had benefited from the MPHEP in that they were given free medication which would otherwise be very expensive outside the government clinic.

Another respondent exemplified the MPHEP as beneficial to her as she explained that:

*MPHEP has enabled me to appreciate that IRS was aimed at protecting us from mosquito bites and hence malaria reduction. Actually, following the lessons I have received about deserting the sprayed house for a few hours to allow the effects of the IRS chemical to subside before coming into the house, nobody experienced flues and coughs after having the house sprayed. This not only protected my family from malaria but also allowed us to benefit without side effects of the IRS chemicals.*

A male respondent openly said that:

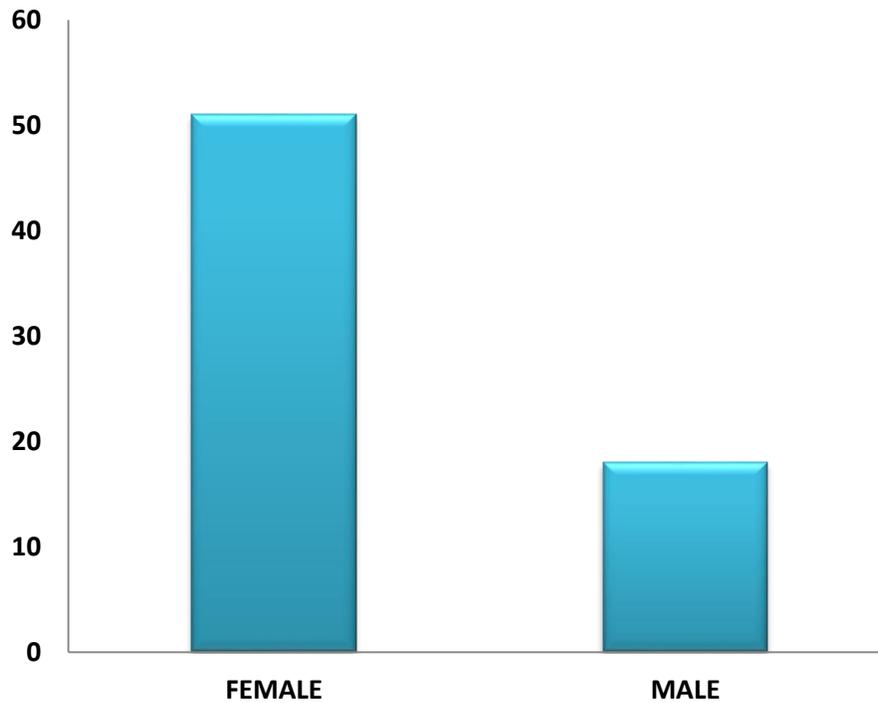
*MPHE has allowed me to know the importance of seeking malaria treatment early before my condition gets worse. The last time I had malaria I ended up ku oxygen and in ICU at UTH because I did not know that malaria had several complications if not treated early.*

The respondents concluded by thanking the NHCs and the health staff for their hard work in educating people in the community regarding malaria. They also hoped that the MPHE program would continue until malaria was wiped out of the community completely.

#### **4.3.7. Findings from the questionnaires**

In order to address the research question that sought to establish the benefits of MPHEP to the Mtendere community members, 69 respondents answered the questionnaire. There were 50 females and 19 males as shown in the bar chart 2 below.

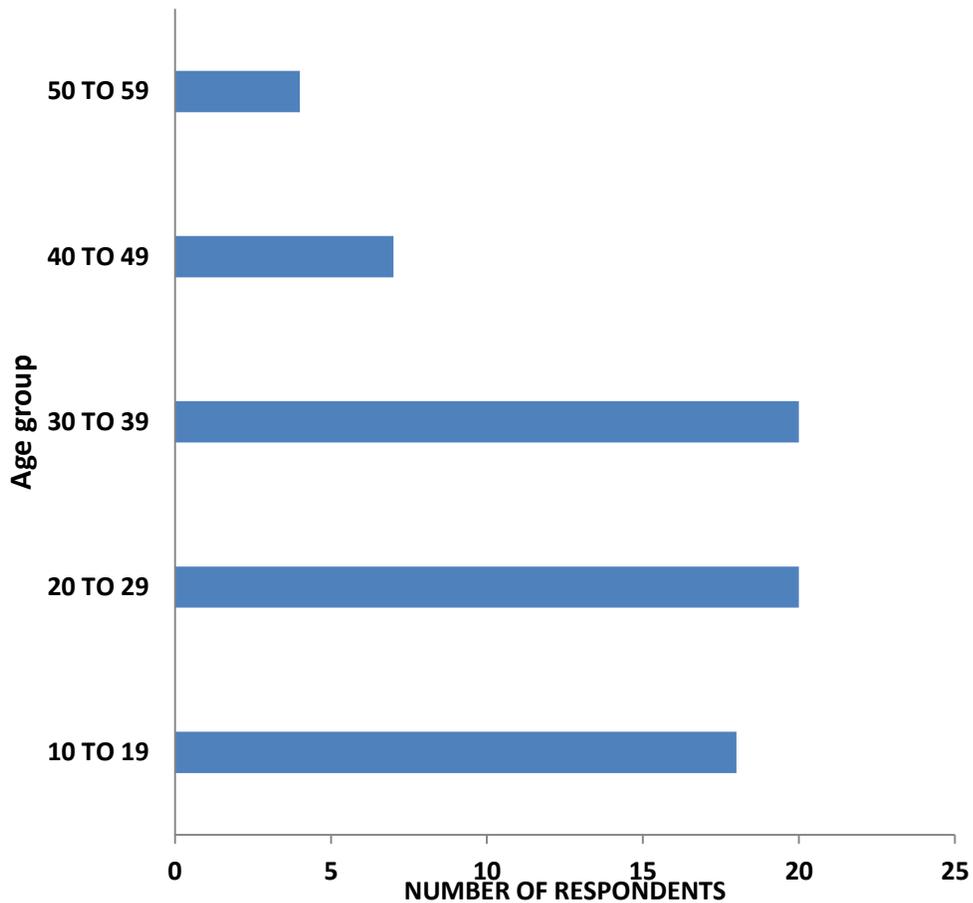
**Bar chart 1: Distribution of respondents by their sex**



The sex representation was that 51 (74%) were female respondents while the male respondents were 18 (26%). These were the respondents who took part in answering the questionnaire in this study.

The age group of the respondents also ranged as shown in bar chart 2 below.

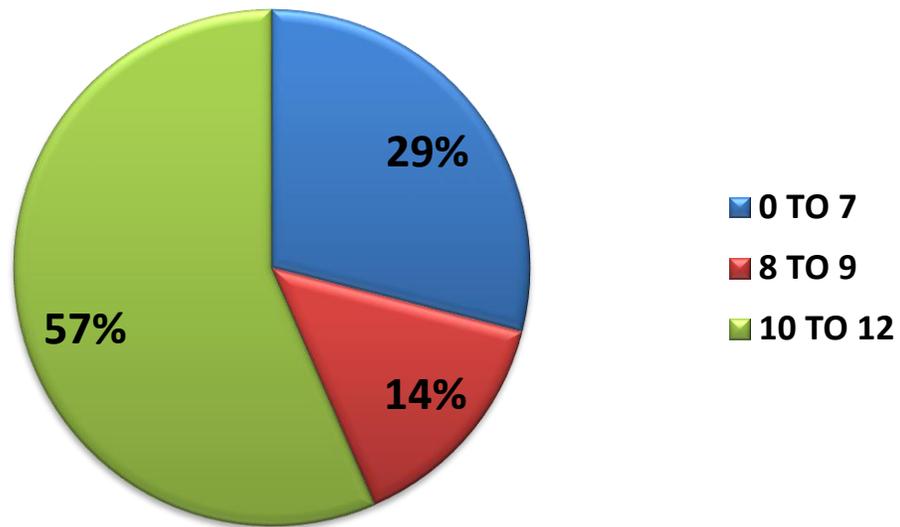
**Bar chart 2: Distribution of respondents by their age group**



Bar chart 2 above shows that highest number of respondents that ranged between 20 to 39 years. This is between 20 to 29 years were 20 (29%) and those that ranged between 30 to 39 years were also 20 (29%). Those who ranged between 10 to 19 years were 18 (26%), respondents who ranged between 40 to 49 years were 7 (10%) and between 50 to 59 years were 4 (6%). In the study, there were more respondents who ranged between 20 to 39 years while the fewest were between the ages of 50 to 59 years.

The educational levels of the respondents of the questionnaire were categorized in three ranges as presented in pie chart 1 below.

**Pie chart 1: Distribution of respondents by their level of education**



Pie chart 1 above shows that 39 (57%) of the respondents had an education level of senior secondary school while 20 (29%) only had primary education as highest. 10 (14%) respondents went up to junior secondary school. This meant that the respondents were from the section that had sufficient educational background.

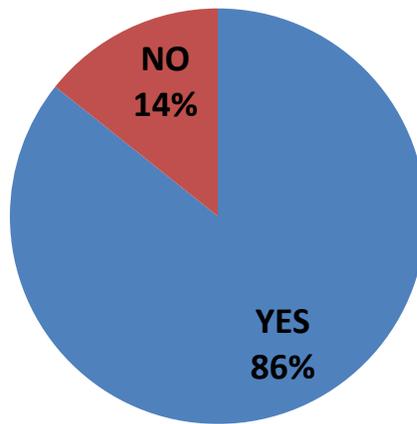
The respondents were asked to define malaria in question 5 of the questionnaire according to their understanding. A number of views on the definition were received. Others said *it is a disease which is caused by a mosquito*. One respondent mentioned that *it is a disease caused by a female mosquito where you have fever, headache in some cases vomiting and loss of appetite*. Despite not having written legibly by some respondents, their definitions hinted on the transmission of the malaria parasite by a female mosquito. This indicated that the respondents were aware of the definition of malaria.

A follow up question (6) sought from the respondents what they understood by Malaria Prevention Health Education (MPHE). Various responses were recorded with interesting findings. One respondent said *it is where you are educated on how to prevent malaria by sleeping under a mosquito net and constant spraying and spraying in dump places*. Another respondent said *it is a program set up to educate people on malaria*. Generally, the

respondents were aware of the MPHE and what it aimed to achieve in the community. The respondents seem to conclude that the MPHE dealt with the education in malaria related programs in the community. The findings further indicated that it looked at the prevention and care activities at the community and clinic level.

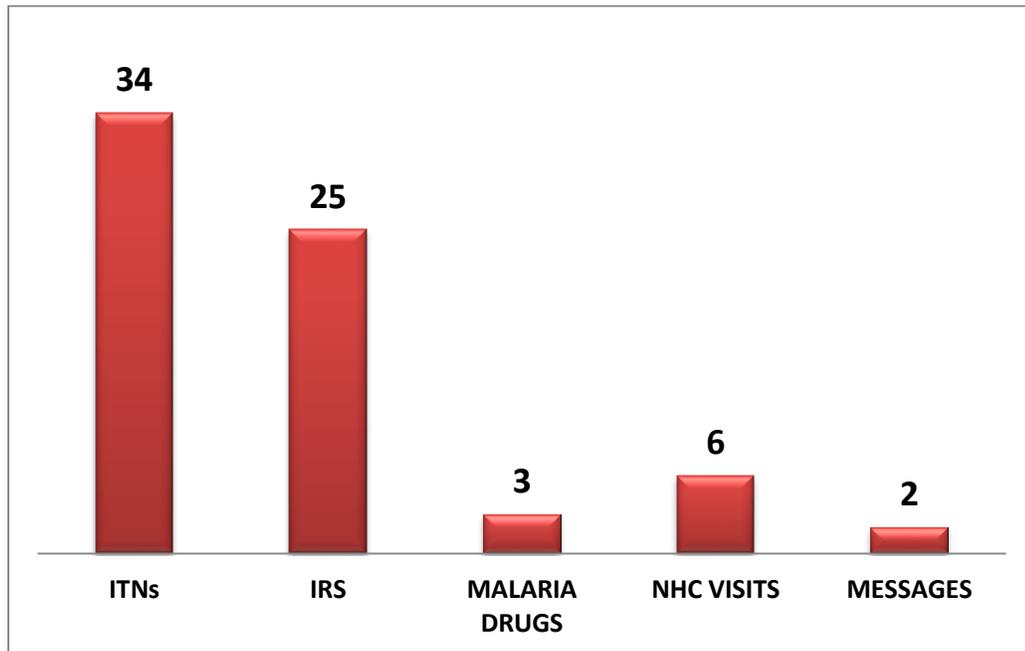
Question seven enquired if the respondents had benefited from the MPHEP which was taking place in the community in partnership with the NHCs. Figure 4 shows the responses.

**Pie chart 2: Distribution of respondents on how they benefited from the MPHEP**



Pie chart 2 above shows that, 60 (86%) respondents accepted that they had benefited from the MPHEP programs in various ways. The large percentage of the beneficiary agreed that the number of malaria cases had reduced because the community members were aware of the measures to be taken in order to avoid malaria and what they ought to do if they suffered from malaria. 10 (14%) respondents who did not benefit from the MPHEP program represented a minority group. What was appreciated was that the MPHEP was beneficial to the majority of the community members of Mtendere Township.

**Bar Chart 3: Respondents' views on the benefits of the MPHEP**



From the bar chart above, it was clear that the community members of Mtendere benefited in a number of ways from the MPHE. 48% (34) of the respondents benefited through ITNs, 36% (25) benefited through IRS while 4% (3) mentioned to have benefited through acquiring malaria drugs. 9% (6) were visited by the NHCs while 3% (2) said the benefited through the malaria messages which were told to the in various forums.

#### **4.3.8 Summary of findings of research question one**

Objective 1 sought to establish the benefits of the Malaria Prevention Health Education Program (MPHEP). The study showed that there were several benefits that the Malaria Prevention Health Education Program (MPHEP) came with. The factors alluded to all led to reduction in malaria cases and deaths. From the bar chart 3 with in this same chapter, it was clear that the community members of Mtendere benefited from the MPHEP in a number of ways. 48% (34) of the respondents benefited through Insecticide Treated Nets (ITNs), 36% (25) benefited from Indoor Residual Spraying (IRS) while 4% (3) mentioned that they had benefited through acquiring Anti malaria medicines. 9% (6) were visited by the Neighborhood Health Committee members (NHCs) while 3% (2) said that they benefited

through the Anti-malaria messages that they heard in the various forums. Qualitative findings also confirmed ITNs, IRS and Anti-malarial medicines as the benefits from MPHEP.

#### **4.4. Findings on the question: What is the content of the Malaria Prevention Health Education (MPHEP)?**

A consideration of the actual content of the MPHEP was a crucial component of the investigation so as to enable comprehensive understanding of the MPHEP. Data was collected using questionnaires, FDGs and interviews from nurses, the SIC, EHT, NHC members and suspected malaria patients.

##### **4.4.1 Responses from the interview with the Environmental Health Technologist (EHT) on the content of the Malaria Prevention Health Education (MPHEP)**

The EHT narrated that she had 8 years of experience working at Mtendere clinic in various disease preventive programs including MPHE. She further detailed that she mentors the NHC members in MPHEP so that they could be equipped with various abilities needed to sensitize their communities.

The EHT explained that:

*Firstly, the content is predetermined by the MOH and cooperating partners. It usually includes what malaria is, causes of malaria, transmission of malaria, prevention and treatment of malaria. Emphasis is usually on prevention that hinges on use of ITNs, IRS, IPT of pregnant women and prompt diagnosis and treatment of cases.*

She also said that the content depended on the audience. At the mother and child health (MCH) clinic, there was stress on IPT and ITN. These components of the MPHEP are at the fulcrum of the content because they are affordable for and accessible to the community. The EHT also pointed out that:

*During the free distribution of the ITNs, instructions on how to use them correctly, the benefits of using the ITNs and the risks involved if one does not use them are usually given. The women are taught that if they do not*

*mount their ITN well, mosquitoes may come in and bite them thereby transmitting malaria to them and the unborn child. We also teach about the need for consistent use of these nets and need for retreatment of the nets.*

The other element in the content was IPT tailored towards pregnant women to prevent development of malaria and its transmission to the fetus. Women were told the possible effects of malaria to the fetus such as miscarriages and low birth weight of children as complications before and after birth respectively. The EHT reported that:

*Women are taught that they should take fansider at least 3 times in their course of pregnancy; they are also told why they should take it and the dangers to themselves and the fetus if they do not comply by taking it. As we explain to them the importance of taking IPT we ensure that they shallow the medicines in our presence because some of them do not take it if allowed to take it from home.*

*In the same vein, another constituent of the content of the MPHE is IRS, explained the EHT. She also mentioned that the community is communicated to on the precautionary measures prior to spraying. We tell them that they will have to remove furniture and other belongings from the rooms including anything hanging on walls just before the sprayers come. It is made clear to them that spraying the house ensures that malaria carrying mosquitoes are exterminated, thus protecting them from acquiring malaria. She further noted that:*

*We explain the possible adverse effects of the sprayed chemicals to the public and precautionary measures of how to avoid them are given. We tell them to avoid the house for at least 4 hours thereafter to open the windows and doors wide for ventilation for another 4 hours before occupying it.*

On the other hand, MPHE was also given to the OPD audience during health education talks that were given to patients in the waiting rooms. These were given information on IRS, ITN, IPT, prompt health seeking behavior when one feels like they have signs and symptoms of

malaria and even clearing of tall grass and stagnant water to prevent the creation of habitats of the mosquitoes. The EHT added that:

*We teach the mixed groups at OPD and in the Zones at various meeting points how to protect one's self from malaria, the signs of malaria and that people should quickly seek medical assistance if they feel the signs of malaria. We teach them to close windows and doors early, to use INTs, to burry stagnant water and shallow wells as well as clearing tall grass.*

The content of MPHEP given was comprised of causes of malaria, IRS, ITNs, IPT, burying water containing ditches and shallow wells and clearing tall grass. Quick health care seeking behavior once somebody suspects themselves of having malaria was also a key aspect of the content of MPHEP.

#### **4.4.2. Findings from the Sister-in-Charge**

During an interview with the SIC her views on the content of the MPHE provided to the general public were sought. A lot of insights were revealed during the interview as explained below: *we sensitize the community on the dangers of malaria to all the categories of people; infants, the aged, pregnant women and the rest* said the SIC. The SIC went on to say that:

*The content of the MPHE includes Malaria prevention which has subtopics such as IRS, IPT, ITN, modification of the physical environment to dislodge the mosquitoes from habitats. All these topics are intended to inform the community and transform the malaria situation into malaria free Mtendere.*

The SIC also added that at the MCH clinic, women were told the importance of visiting the clinic whenever they suspected that they had malaria. The contents of the malaria talk in most cases was based on prevention of malaria in the children, pregnant women and how to avoid mosquito bites by closing windows early in the evening and sleeping under a treated mosquito net.

#### **4.4.3. Findings from the nurses**

The findings from the nurses were gathered by FGDs. The cardinal information they mentioned was that the EHT and the NHCs were the focal points in the MPHE. One nurse mentioned that, *we are not usually involved because the programs are usually funded and there is money involved.*

However, it was established that the content of the MPHE included malaria prevention methods in the homes, advantages of taking a suspected malaria patient to the clinic early and accepting preventive measures like IRS. They also hinted on the messages of slashing grasses, closing windows early in the evening and burying shallow wells. One nurse opened up by saying:

*I teach the people how to treat and retreat the nets and I give demonstrations of how to tuck in the net and ensure that the baby and pregnant woman is sleeping safely under the ITN.*

The nurses mentioned other malaria content which they shared with the patients as making the malaria patient seek treatment unlike the self-prescription which most community members did. They also mentioned that spraying methods were among the teaching content which the patients and the community discussed during the MPHE program.

#### **4.4.4. Findings from the Focus Group Discussion (FGD) with the Neighbourhood Health Committee (NHC) members on the content of the MPHE**

The researcher held a focus group discussion with the 10 NHCs of Mtendere Township to draw insights from the collective knowledge of the NHCs. The knowledge was pertaining to the content of the MPHE provided to the various clientele in Mtendere Township in pursuit for reducing malaria to zero rates. Each Zone was represented by a zone leader and they all expressed their views about the nature and type of content of the MPHE.

The first respondent hinted that:

*Content was mainly based on IRS, IPT, ITN, quick health care seeking behavior and clearing the habitants that includes cutting tall grass and*

*burying water containing bodies such as shallow wells. All the lessons hinge on the above major issues that seek to reduce transmission of malaria and to cure those that may have been infected through mosquito bites.*

It was therefore clear from the above that MPHE content was similar regardless of the Zone, it was based on the principles; IRS, IPT, ITN, quick health care seeking behavior and clearing the habitants that includes cutting tall grass and burying water containing bodies such as shallow wells. These are intended to halt Malaria incidences.

In agreement, the Zone 2 leader added that apart from the major components already alluded to, they also teach the community to avoid the use of herbal remedies. ....*we discourage the use of herbal medicines as they do not cure malaria but rather, put the lives of people at risk of suffering complications of malaria and death;* he clarified. He also hinted that they had had cases of individuals going to seek help from herbalists instead of going to the health Centre to get appropriate medicines. The use of herbs had resulted in a lot of deaths and at some point cerebral malaria in Zone 2. The respondent also said: *these are the examples we usually cite when informing the community members about the dangers of not seeking appropriate medical attention to stop them from risking their health.*

The other respondent from another Zone reechoed the same sentiments that:

*The content given to the group of community members usually centres on prevention of multiplication of mosquitoes in view of mosquitoes being the vectors of malaria. What is stressed is clearing the surrounding of stagnant water by burying shallow wells and water logged areas.*

The content of the MPHE was centered on IRS, IPT, ITN, quick health care seeking behavior and clearing the habitants. These realms of knowledge have enabled the cases of malaria to reduce greatly in Mtendere compound by breaking the transmission route of malaria from the vectors (mosquitoes) to the community.

#### **4.4.5 Findings from the Focus Group Discussion (FGD) with patients at the OPD**

A focused group discussion was convened with patients at the OPD to address the question on what the content of the MPHE was. The most frequent content which the patients mentioned was that of malaria prevention through various means such as IRS, ITN, and health seeking behavior once one was suspected of having malaria and treatment procedures. One female respondent expressed the MPHE content which she heard in the following words:

*The nurses came yesterday when we were admitted and started telling us that we should be closing windows early at home and we should sleep under the mosquito net.*

An elderly male respondent noted that good MHPEP content was given to them while admitted in the hospital ward. He used Bemba and said that:

*Balitweba ukulakwempa ulubansa, ukushika ifishima ifili mupepi neng'anda.  
Balilandilepo napakusendama mu masumbu yaba mosquito elo nokubutukila ku  
chipatala ngawaumfwa kwati impepo, umutwe nangula ukunaka kwamafupa.*

*English version (we were told to slash our surrounding, bury shallow wells near homes. They also talked of sleeping in Mosquito nets and rushing to the health center when we feel fever, headache joints pains).*

The patients and their relatives agreed that the malaria content were the same every time their relatives were admitted. This meant that patients were aware of the right MPHE messages and its content despite them having malaria.

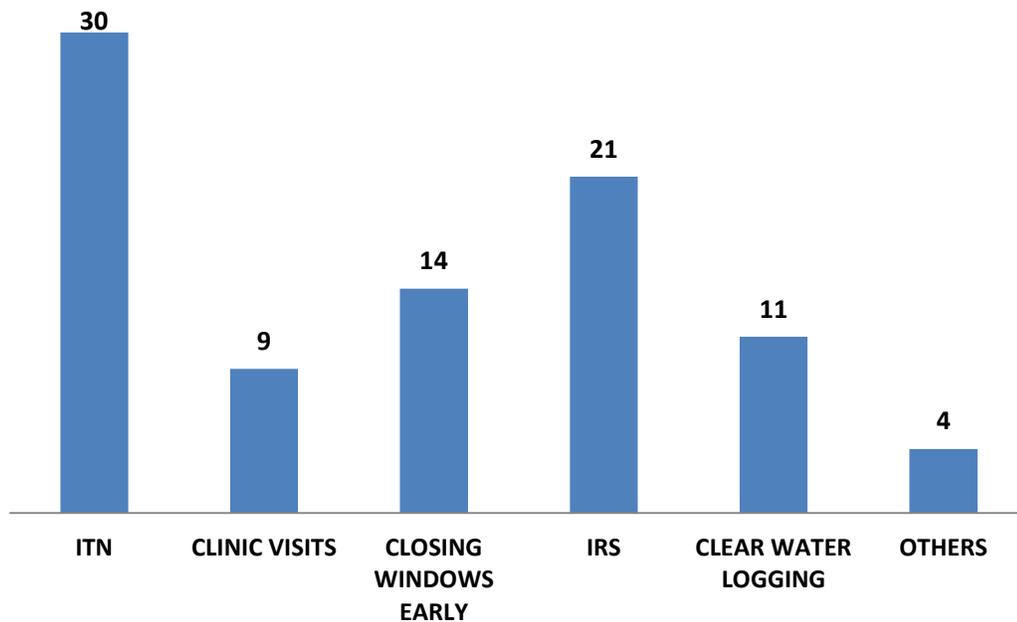
#### **4.4.6 Findings from the questionnaire on the content of the MPHE**

The findings from the questionnaires regarding the content of MPHEP were themed into two categories. The emerged themes were preventive measures and curative measures.

#### 4.4.6.1. Preventive measures

The first theme that emerged from the questionnaire which sought to establish the content the MPHEP disseminated was the preventive measures. Bar chart 4 below shows the results:

**Bar chart 4: Responses on the content of MPHE**

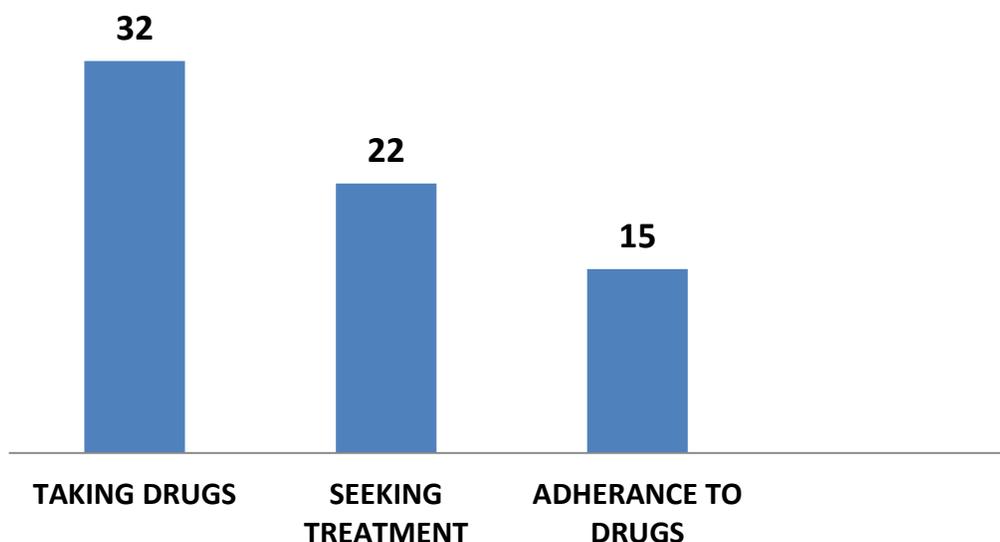


The first main theme which arose from the questionnaire was the preventive measures. The findings on the kind of content the MPHEP carried were categorized from the emerging themes from the questionnaires. Sub themes are presented in bar chart 4 as above. The findings indicated that 34% (30) learnt on ITNs, clinic visits accounted for 10% (9) while good evening practices like closing windows was 16% (14). IRS registered 24% (21), clearing water logging areas scored 12% (11) and 4% (4) was for other malaria content teachings. With such findings, it was clear that people were conversant with the ITN and IRS message. Such educational content on malaria was the reason that malaria reduced in the township of Mtendere.

#### 4.4.6.2 Curative measures

“Curative measures” was the second theme that emerged from the questionnaire which sought to establish the malaria content the MPHEP disseminated. Bar chart 5 below shows the results.

**Bar chart 5: Respondents’ views on malaria curative measures**



The findings indicated what the respondents learnt from the MPHEP. The bar chart above shows that 32 (46%) learnt how to take malaria medicine effectively, 22 (32%) learnt to seek malaria treatment whenever they felt ill and 15 (22%) said they learnt the importance of finishing or adhering to medicine/course if they were given such a treatment in the health facility.

#### 4.4.7 Summary of the objective

The study established that the content for the MPHEP included ITNs, clinic visits, closing windows early, IRS and environmental management practices among others. These were themed into curative and preventive measures related content. The study also revealed that the content was on causes of malaria, signs and symptoms, effects of untreated malaria and its complications among others. The health workers and other practitioners were doing their

best to ensure the right content on malaria was disseminated to all the people in the township of Mtendere.

#### **4.5. Research findings on: What are the Challenges encountered during the Malaria Prevention Health Education (MPHE)?**

The third research question aimed at addressing the challenges encountered during the Malaria Prevention Health Education (MPHE) in Mtendere Township. To answer this question, the researcher interviewed the Sister-in-charge and the EHT of Mtendere clinic. FGDs were also held with the NHCs, nurses, patients that had malaria, mothers who brought children to the under 5 clinic and pregnant women. A questionnaire was also administered to patients at the OPD.

##### **4.5.1. Findings from the Environmental Health Technologist (EHT)**

An interview was held with the EHT to find out the challenges encountered during the Malaria Prevention Health Education (MPHE) in Mtendere community. Research findings were that the catchment was too big for the clinic to bear. She mentioned that:

*People are always building and the community is growing every day. I can't even tell how many households are in my area. Therefore, reaching everyone is a big challenge. There are house extensions everywhere.*

Rapid urbanization had resulted into having unplanned settlements making the boundaries between townships difficult. This challenge makes our clinic miss out some households during IRS. In view of this, mosquitoes easily breed and spread to other parts of the township thereby increasing the risk of contracting malaria.

The other challenge mentioned by the EHT regarding the effective implementation of MPHE was inadequate human resource to service the residential area well. She went on to say that

*I have 1 NHC member to cover 1 zone. A zone in Mtendere has more than 1500 people which is a huge figure to be served effectively by 1 NHC member. From this, you can see that the MPHE program may not be very effective.*

The EHT also mentioned the challenge of inadequate funding from the government and other partners to motivate the NHCs. She stated:

*The government does not realize the importance of the NHCs in the clinics. These people are hardworking and instrumental to the effective implementation of MPHE. However they do not receive any regular pay like other workers, they just get erratic allowances of K13 per day. Such has discouraged a lot of people from volunteering as NHCs.*

Lack of effective communication between the clinic and the NHCs after regular meetings was another challenge that the EHT alluded to. She further stated that: *Once they leave after a regular meeting, it is difficult to get hold of them again in case of an urgent or pressing problem that would need their attention.* It was also difficult for them to communicate to the clinic if there was an emergency in their community because they neither have phones nor talk time allowance. The EHT mentioned that:

*With such challenges it has been a nightmare especially in the rainy season to mobilize NHCs and the community for MPHE activities, compounded by this is the fact that more malaria cases are seen in the rainy season demanding more effective communication strategies for dissemination of MPHE.*

For the MPHE to be well coordinated and effectively implemented there is need for efficient exchange of ideas between the health care providers, NHCs and the community. Lack of this communication would deter the smooth running of the MPHE in Mtendere Township. The EHT bemoaned the lack of regular training workshops to update the clinic staff and NHCs on the new trends in malaria prevention and control. She mentioned that malaria was getting complicated month by month hence there was need for regular updates on the new changes. *“I remember when there was a case of cerebral malaria in one zone, the patient was hallucinating and NHCs thought it was madness,”* she recalled. It was until a workshop with the NHCs was held on the complications of malaria and changes in malaria treatment that they were educated on the complications and how to deal with them. If regular education

was given to the NHCs with enough funding, the MPHE would be effective in the community.

The other challenge was that the NHCs were not closely supervised said the EHT. She noted that it was her role to supervise the works of the NHCs in all the zones of Mtendere. However, there was limited transport to enable her check on the effectiveness of the NHCs' work. She also mentioned that there was no proper road network and clear house numbers to follow when one wanted to see the NHCs. *"I only wait for them to come for a meeting and communicate what I wanted to tell them,"* she said. This makes the implementation of the MPHE difficult in Mtendere Township.

Lack of training in facilitating techniques to educate the community on MPHE was another challenge which the NHCs were facing in Mtendere community. They need skills on how to manage their audience using a variety of techniques such as drama, brainstorming, role play, discussions and debate among others. The most frequently used technique is the lecture which may not be appropriate for adult learners due to their various characteristics and age related physical needs. The EHT pointed out one scenario where the facilitator was overwhelmed and said:

*As I approached the gathering of a mixed group being talked to by the Zone 6 leader I saw children making noise and the women were busy feeding their crying children while a few individuals were trying hard to listen to the NHC facilitator's faint voice which was swallowed in total confusion. I literally had to stop the meeting so as to break the group into smaller groups by age and sex for enhanced learning and teaching.*

With such unforeseen and unpredicted hindrances, the MPHE has faced a lot of challenges and it is not very clear as to when these would be sorted out for an enhanced MPHE program in Mtendere community.

#### **4.5.2. Findings from the Sister-in-charge**

In the quest to answer the research question on the challenges encountered during the MPHE implementation in Mtendere community, the sister-in-charge pointed out that there were inadequate IRS chemicals and equipment to maintain a regular IRS schedule in the Township. The other problem she mentioned was that the IRS equipment was not stored at the clinic after the annual exercise was over. The district collected the equipment instead of leaving it with the EHT so that spraying could be an ongoing process. It was against this background that the MPHE program had been seen not to achieve its objectives effectively. She noted: *The MOH causes delays in the initiation of the IRS program by deferring the delivery of sprayers, protective clothing, chemicals and other necessary supplies.*

The other problem that the SIC alluded to was that there was lack of male involvement in the MPHE activities and further said that:

*Most sensitization talks are dominated by the female folk. It was not uncommon for men to shun health education meetings due to various reasons such as illiteracy and poor attitude towards health issues. Men prefer to remain home or to go elsewhere instead of coming to the health center or other designated points for MPHEP.*

On the other hand the SIC stressed that:

*MPHEP is less frequently done independently but rather as a component of general health education. It is embedded in safe motherhood, MCH, growth monitoring and in the health education given to HIV/AIDS patients.*

The SIC also explained that:

*MPHEP is provided independently prior to the World malaria day commemoration that falls on 25<sup>th</sup> April every year and just before the onset of IRS in August every year. This had led to inconsistencies in the MPHE. When a talk is given at OPD it was usually a general health*

*education talk with a number of issues about health related problems depending on the nature of the prevailing health problem in the township.*

The SIC gave an illustration of how MPHE is intertwined with other Health Education given at MCH department:

*For instance, at MCH clinic, as the nurses teach health education, it includes nutrition education, reproductive health education, HIV/AIDS education and family planning among others MPHE is among these as a component. It rarely stands alone. It is for this reason that as a component of other health education programs, MPHE has suffered due to its dependency on the effectiveness of general health education.*

The SIC further elaborated that MPHE was sometimes disadvantaged by the need to address an epidemic urgently thus epidemics took center stage leaving MPHE activities out. She recounted the previous years' experience as follows: *last year during the cholera outbreak most health care providers were mobilized to go and sensitize the community on cholera. MPHE activities came to a standstill.*

#### **4.5.3. Findings from the Focus Discussion Group with the Neighbourhood Health Committee**

In order to establish the challenges encountered in the process of implementing MPHE the researcher held a FGD with 10 NHC members so as to get their views. The first response was from the Zone 3 leader who bemoaned lack of male involvement in the MPHE activities among community members as a drawback to its success. He reported that:

*Men prefer going out to attend to income generating activities than attending MPHE programs. Others just go out for leisure activities like beer drinking as compared to attending health education. Even when a child or any family member is sick women are the ones that usually take that sick person to the clinic.*

Another respondent lamented that there was a stream in Zone 3 that harboured a lot of mosquitoes as it served as a breeding ground. People who lived near were at risk of Malaria unfortunately some of them did not even put up the measures that we teach them such as closing windows and doors early, wearing long clothes that cover the body completely to reduce the risk of mosquito bites and consequently malaria. Shallow wells were also another hindrance to the successful elimination of malaria in the Township. There is erratic water supply so some sections of the community rely on shallow well hence they acted as a continuous breeding ground for mosquitoes. *Even if I tell them that malaria cannot end here because of the shallow wells, I also draw water from there and we cannot bury them*, she lamented. What had compounded this problem was that regardless of the MPHE, the many shallow wells are not buried hence increase the number of mosquitoes. Sadly, it was not uncommon to find vulnerable groups such as children and pregnant women spending time outdoors in the evening not knowing that they are exposing themselves to mosquito bites and malaria eventually.

The NHCs also established that training materials were scarce and that had led to difficulties in implementing MPHE activities. One of the Zone leaders pointed out that:

*Nthawi zina nimakangiwa kuyanka mafunso bakafunsa popunzisa chifukwa timaibala vopunzila chabe pa Malaria Day mu April.*

English version: *Sometimes, I fail to answer questions when they ask when I am teaching because we forget since we just learn on malaria day in April.*

Frequent training were essential for the effective implementation of MPHE. Without it the facilitators have challenges in implementing MPHE successfully since they are not very knowledgeable. Another zone leader complained that:

*kudala tenze kuyenda kuma workshop yaba care international naba Jica pafupi pafupi kwamene tenze kupunzila mopunzisila mukomboni, manje sikambili kutiitana*

*English version. (Sometime back we used to frequently go to workshops organized by Care international and Jica were we used to learn how to teach in the community, however, were rarely go now).*

One Zone leader explained that HIV/AIDS had taken center stage in the backdrop of the high priority given to HIV/AIDS sensitization thereby MPHE has been over shadowed by HIV/AIDS prevention activities. *It appears as if Malaria no longer causes deaths among people judging by the way it has been neglected nowadays* added another respondent. It was established that the NHCs were meant to attend to the HIV/AIDS related issues in the community but later integrated into malaria. Some community members usually answered that, *malaria inasila, mukazitiuzako nkani ya AIDS niyamene sitiziba. (malaria was eradicated, tell us messages on AIDS that is what we have knowledge gaps)*. With such responses, the NHCs openly said they faced challenges in the process of conducting MPHE in Mtendere Township.

#### **4.5.4. Findings from the Focus Discussion Group with nurses**

The researcher engaged Nurses in a FGD to gather their views on the challenges that the MPHE encountered during program implementation. Two sets of FGDs were held with nurse. The findings were that there was only one lab technician to manage the thousands of specimens that needed processing. They also mentioned that there was a short supply of fansidar to enable every NHC carry enough for the pregnant women and the general community members. Therefore, their education to the community carried less impact.

Another nurse said that there was lack of follow up mechanisms to enhance monitoring of patients after treatment. This hindered proper eradication of malaria in the community as few confirmations or follow up tests were done. She said that:

*We are not enough to make follow up on the treated patients. Like today, I have attended to more than 100 patients and I am tired. How can I make follow ups on the ones I saw last week? I can't manage. Even the NHCs fail to trace the patients with positive malaria results sometimes due to lack of transport and*

*other communication challenges. One NHC had a bicycle sometime back but ever since it broke down follow up has been difficult.*

The nurses also noted that the community was only concerned with malaria when their family member was attacked by it. After they got well, they neglected all the knowledge.

The nurses' FDG that was held in the evening and was a chance for them to express their cry for a generator due to power outages that were being experienced from time to time in the clinic. One nurse said:

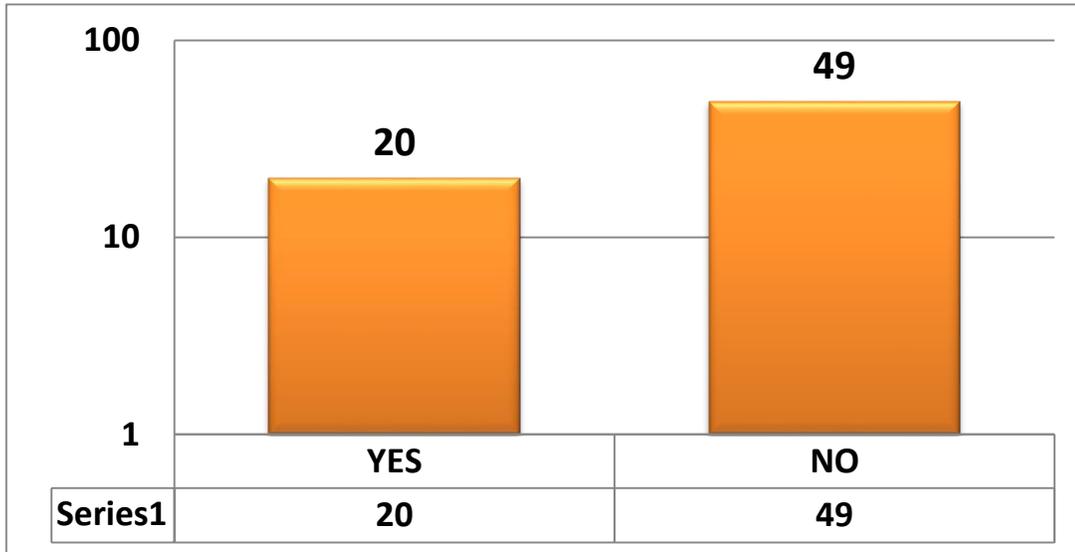
*How can the lab tests be done without electricity? These microscopes work with power. The absence of electricity paralyzes malaria diagnosis and treatment and generally, MPHE and as nurses we are unable to promptly give out results and appropriate health education to patients.*

Nurses also agreed that there was communication breakdown between the EHT and the nurses in information dissemination. They noted that the certain residents never wanted to use the ITN because they thought they suffocated inside them. Such negative trends were the ones which reduced consistent usage of the ITN. MPHE was supposed to be intensified if such negative trends were to end in the community.

#### **4.5.5. Findings from the patients at Out Patient Discussion from a questionnaire**

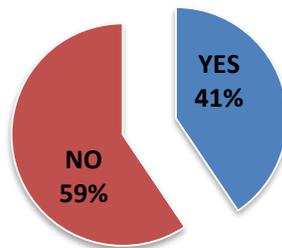
A questionnaire was administered to 69 patients at OPD so as to collect information on the perception of people concerning the challenges encountered in the processes of conducting MPHE in Mtendere Township. Quantitative data was collected from 69 respondents and data was presented by way of statistical diagrams and graphs. Question 11 enquired if the respondents had encountered any challenges during MPHE program. Figure 5 below shows the views of respondents.

**Bar chart 6: Responses on whether the respondents had encountered any challenges during MPHE program**



The majority of the respondents 49 out of 69 indicated that the providers of MPHE faced a number of challenges in its implementation process unlike the 20 out of 69 responses. A follow up question requested the respondent’s opinion on whether the number of staff providing MPHE was sufficient. The results were as presented below in figure 6.

**Pie chart 3: Responses on whether staffing is sufficient**



The pie chart above indicates that the workers providing MPHE were not enough to enable the community have an effective MPHE program which could be appreciated by everyone

in the community. Fifty nine percent of the respondents stated that the health workers were enough against the 41% felt they were enough.

#### **5.5.6. Summary of findings on research question 3**

Health practitioners and the community at large had encountered a number of challenges in the process of conducting malaria prevention health education. The study has established that there was inadequate human resource to effectively conduct the program, lack of training and teaching material for NHCs, unsustainable funding and transport for outreach educational program on malaria. There was inadequate IRS coverage, insufficient ITN which were only given to expecting women and the population was increasing while the health facilities remained static.

#### **4.6. Research findings on: What are the solutions to challenges encountered in the process of conducting Malaria Prevention Health Education Program?**

Mentioning challenges does not go without proposing their solutions. The last question sought to establish the solutions to the challenges encountered in the process of conducting MPHE in Mtendere Township. A number of solutions were proposed by the respondents through the focus group discussion, interviews and the questionnaires.

##### **4.6.1. Solutions from the interview with the Environmental Health Technologist**

An interview with the Environmental Health Technologist (EHT) sought to establish the solutions which could help eliminate the challenges that hampered effective delivery of the MPHE program. She proposed the need for regular sensitization programs unlike giving MPHE to the community mainly during the week of the world malaria day in April and in August prior to the IRS program. She also believed that if more educational workshops were held on MPHE it would facilitate the eradication of malaria in the community.

On the poor communication systems being experienced by health care providers and the community, the EHT proposed that the communication system was supposed to be improved between the community, the NHCs and the EHT as well as other officers in the system if malaria was to be eradicated. He mentioned that:

*cellphones and even walkie talkies (radio message gadgets), email and fax facilities should be provided to the NHCs for easy communication to promote quick response to emergency cases and to create a bridge between the community and the clinic.*

These gadgets would also enhance routine communication on different issues relating to elimination of malaria in the community through health education to change people's attitudes and practices so that they can adopt appropriate behavior that would enhance their health by protecting themselves from malaria. She also noted that *incentives like allowances which are meaningful should be given so that the NHCs are no longer on voluntary basis but work effectively for some money*. She also asked the government to provide holistic support so that the MPHE program can yield better results. She lastly suggested that:

*when the annual IRS was concluded, she suggested that government should be leaving the spraying equipment with the clinics so that the IRS should be an ongoing activity.*

#### **4.6.2. Interview with the Sister-in-charge**

From the interview with the sister in charge, solutions were proposed to the challenges which were being encountered in the process of conducting MPHE. She stated that in order to provide effective MPHE in the community, there was need to provide adequate training materials to the NHCs, EHT, nurses and everybody who was involved in the health education program. The training materials which needed to be provided according to her words included; reading material like brochures, leaflets, charts and other forms of stationary. She also noted that:

*Content on MPHE should be printed in local languages so that the common people can read and understand in their own language unlike the English language that we see on charts.*

She also mentioned that transport was needed to facilitate easy movement of NHCs, EHTs, nurses and other officers to the malaria hot spots so that the health education is quickly given to them to avoid spreading of the parasite to other parts of Mtendere Township.

The SIC further added that there was need to have a continuous spraying program unlike the annual spraying that was conducted only in September every year. This was because mosquitoes were reproducing continuously and in order to curb Malaria there was need to revisit the frequency of spraying. The free ITNs distribution should be to every citizen who comes to the clinic unlike the policy of only giving pregnant mothers and children under 5 years. She reechoed the idea that:

*Malaria attacks everyone and not only children under the age of 5 years old and pregnant women, so everyone should be protected by sleeping under the net since most people cannot afford to buy one, they should be given freely.*

With such solutions at hand, she thought malaria would be eradicated completely in Mtendere community.

#### **4.6.3 Solutions from the Focus Group Discussion with the Neighbourhood Health Committee**

The NHCs had a number answers to offer regarding the way forward in alleviating the problems encountered in the process of conducting MPHE. They submitted that the solutions were at community, clinic and the level of the government.

An NHC member proposed that:

*At community level, individuals should commit themselves to MPHE by burying shallow wells and clearing tall grass and shrubs to eliminate habitats of the mosquitoes. It is important for the NHCs to heed to the messages of the MPHE to eliminate malaria in Mtendere.*

They considered that if these factors were attended to, the MPHE program would go a long way in solving current problems.

#### **4.6.4. Solutions from the Focus Group Discussion with the nurses**

The nurses suggested that if government provided enough funds to train every staff at the clinic in MPHE, they could be involved in the education part because they were the ones who had more time with the patients in the ward. One nurse suggested that more ITNs should be given to the community members so that malaria does not become a song in every home. Another nurse noted that

*government should provide adequate educational resources and material in the local language so that every person can read and understand unlike the English charts which had no impact to them.*

There was also need to dismiss myths and misconceptions concerning the use of ITNs and IPTs because they posed a challenge for the effective implementation of MPHE, the nurses established.

#### **4.6.5 Solutions from the Focus Group Discussion with the patients**

Patients asked the government to provide free mosquito nets to every home because they were too expensive for the poor majority Zambians. The clinic should run an effective outreach program that would target the people in the out skirts of Mtendere like near Kalikiliki stream. One old lady said that:

*boma itiyanganeko mankwala yadula ngati kulibe kuno ku clinic*

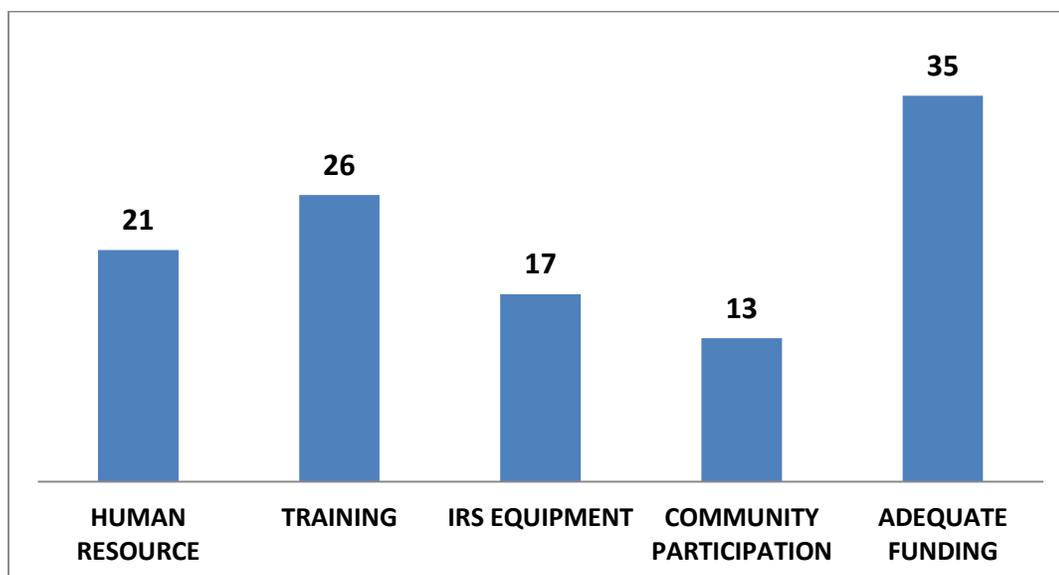
English version: *(government should consider reducing the prices of malaria drugs which are too expensive).*

The patients established that there was need for the evaluation for the works of the NHCs because some patients complained that they had never seen one and they hardly knew them. There was need to increase on their numbers so that they could help the old aged people who were unable to come to the clinic.

#### **4.6.6 Findings from the questionnaire on the possible solutions to the challenges encountered in the process of conducting MPHE**

The respondents were asked to suggest possible solutions to the challenges faced in the process of conducting MPHE. The bar chart below shows the suggestions:

**Bar Chart 7: Possible solutions to the challenges in conducting**



Bar chart 7 above shows that 21 respondents alluded to provision of adequate human resource, 26 respondents preferred provision of training, 17 respondents submitted that there was need for more IRS equipment, 13 hinted on community participation and 35 respondents pointed out need for adequate funding as solutions to the challenges of the MPHEP.

##### **4.6.6.1 Increasing the number of human resource**

The respondents submitted that the number of human resource or health care providers such as nurses, NHCs, EHTs, clinical officers and other health care providers need to be increased. The expansion of human resources is critical so that the MPHE programs can run smoothly.

##### **4.6.7 Summary of findings on research question 4**

Question 4 sought to unveil solutions to the challenges encountered in the process of conducting the MPHEP in Mtendere Township. A number of responses were solicited from

the EHT, SIC, nurses, general patients at OPD and mothers of under 5 children. The recommendations for solutions were that the government should provide enough financial assistance, human resource, trainings and capacity building. There was also a call for the community to own their health programmes by actively participating in activities that would nurture a healthy community free from Malaria.

#### **4.7 Summary of the Chapter**

This chapter has presented the findings from the scrutiny of the benefits and possible improvements of the MPHEP in Mtendere Compound as suggested. It has brought out the benefits of MPHE by the community. It has also established the content which characterized the teaching of MPHE in the community. The chapter has also identified the challenges of the MPHE and their possible solutions.

## **CHAPTER FIVE**

### **DISCUSSION OF THE FINDINGS**

#### **5.1 Introduction**

This chapter discusses the findings of the study on *'An enquiry into the benefits and possible improvements of the MPHEP in Mtendere Township.'* The study focused on four objectives which were to; determine the benefits of the Malaria Prevention Health Education Program (MPHEP); investigate the content of the Malaria Prevention Health Education Program (MPHEP); establish the challenges encountered in the process of conducting the Malaria Prevention Health Education Program (MPHEP); and to establish possible solutions to the challenges encountered in the process of conducting the Malaria Prevention Health Education Program (MPHEP).

Having presented the major findings in the previous chapter, this chapter serves to discuss the findings. In order to enhance the readability and facilitate understanding, the major results are briefly summarized in each subsection and discussed in relation to the reviewed literature and in the context of the RE AIM framework. The chapter concludes by reflecting back findings that are blended with the reviewed literature in view of the RE AIM framework.

#### **5.2. Research Objective 1: To determine the benefits of the Malaria Prevention Health Education Program**

Objective 1 sought to establish the benefits of the Malaria Prevention Health Education Program (MPHEP). The study showed that there were several benefits that the Malaria Prevention Health Education Program (MPHEP) came with. The factors alluded to all led to reduction in malaria cases and deaths. From the bar chart 3 in chapter 4 on page 60, it was clear that the community members of Mtendere benefited in a number of ways from the MPHEP. 48% (34) of the respondents benefited through Insecticide Treated Nets (ITNs), 36% (25) benefited from Indoor Residual Spraying (IRS) while 4% (3) mentioned that they had benefited through acquiring Anti malaria drugs. 9% (6) were visited by the Neighborhood Health Committee members (NHCs) while 3% (2) said that they benefited

through the Anti-malaria messages that they heard in the various forums. Qualitative findings also confirmed ITN, IRS and anti-malarial medicines as the benefits from MPHEP.

There was a general agreement by respondents that there were various benefits from MPHEP. Conversely the most common benefit was through the use of ITNs. This supports the views of Iskander (2015) who submitted that the use of mosquito nets is beneficial in the control of Malaria. Kango (2005) also holds that malaria education provided to both the patient and the relative on the bed side fosters change in behavior hence reducing the prevalence in the community. The change from the use of Chloroquine to the acceptance of Artemether combinations has been a great breakthrough in the community to fight malaria resistance. This was necessitated by the high resistance to chloroquine leading to high prevalence rates and was disseminated through constant malaria education on radio, print media and outdoor campaigns against malaria (MOH, 2012).

Nonetheless, Akakulubelwa (2000) reported contrasting findings. He discovered that knowledge about Malaria prevention provided by MPHEPs does not mean that the community will adhere to it. He revealed that despite high levels of knowledge regarding malaria prevention such as use of ITN, 50% of the respondents had a negative attitude towards malaria prevention and 46% put the responsibility of prevention on health workers.

These findings substantiate the RE AIM framework's "Effectiveness" element that emphasizes the value of involving stakeholders from the first stage such as the planning stage so that support is generated from the very beginning. This would also yield consensus on various aspects in line with the success of the program. Despite not involving the community in the planning stages of the program, positive results have been seen from a number of benefits that the study has outlined. However, if all the stakeholders especially the Mtendere residents had been involved from the planning stages, the benefits could have led to near zero malaria cases in the Mtendere community.

### **5.3. Research Objective 2: To establish the content of the Malaria Prevention Health Education Program**

The second objective sought to establish the content of the Malaria Prevention Health Education Program. The study endeavored to bring out an understanding on the content that is presented to the community during the MPHEP. A number of findings were established in the research which correlated with other findings and views of certain studies and organizations.

Firstly, the content of the MPHEP included preventive measures in line with environmental management such as; closing windows early in the evening, slashing tall grass around the house, using insecticide treated nets (ITN) consistently, Indoor Residual Spraying (IRS) and burying waterlogged areas. These findings are in conformity with what Way (2015) submitted that content of MPHEP was on prevention of water logging and tall grass in the environment. These activities aimed at dislodging mosquito breeding grounds. These findings are validated by a study by Mutale (2009) who suggested that the reduction in malaria cases can be achieved when proper education is given to the vulnerable people in the compounds because they are the ones prone to the disease. He cited observable behavioral changes such as embracing the use of ITNs and closing windows early among others. Nyirongo (2013) adds that radio programs and television messages should have practical messages to enable listeners follow keenly. Nonetheless, Mukonka et al (2014) contends the use of radios and televisions that they are gadgets for the rich while the poor who are frequently affected by the disease do not own such mediums of communication.

Secondly, curative measures included prompt health seeking behavior for RDTs and malaria treatment whenever one felt ill was among the content which was common in the MPHEP meetings. Hausmann-Muela and Eckl (2015) hold a negative view over curative education measures among citizens in rural communities. The duo argues that preventive education was more rewarding and that it had the potential of reversing the incidence of malaria. It is against this background that people should lend more credence to preventive education as opposed to curative messages so that the community does not get infected by the Malaria parasite. Treatment and curative education are more expensive and resource consuming than

prevention. WHO (2015) recommends both preventive and curative measures for the effective eradication of all types of malaria parasites.

In addition, constant monitoring of drug intake by family members and treating those found with malaria was one of the common malaria message propagated by the health workers and NHCs in the community. Mukonka et al. (2015) argues that MPHEP messages seemed to have been put into practice effectively by the families that had a head of the house with an education attainment level above grade 9. This was seen to be so because they read the instructions effectively and followed them. Iskander (2015) also indicated that MPHEP usually delivered a mixture of messages to the communities around them. These include treatment compliance and consequences of missing dosages. Dosage monitoring is usually left to the family members if the patient is home thus, instructions about the timing, frequency, and what food to take or not to take with the drugs given. Health workers take responsibility if the patient is admitted to the clinic. These instructions are passed on to the family members.

#### **5.4. Research objective 3: To establish the challenges encountered in the process of conducting the Malaria Prevention Health Education Program (MPHEP)**

The third objective sought to establish the various challenges which were encountered in the process of executing the MPHEP. The first finding indicated that funding for the MPHEP was inadequate and donor sponsored hence it did not solve the felt needs in relation to the malaria problems of the community. This finding is validated by Way (2015) who posits that donors pay attention mainly to their own hidden needs and motivations and not the needs of the receiving nation or agency. He argues that funding for malaria research should not be diverted to other activities as it is key to the eradication of Malaria. Tied aid should be rejected in African countries because it does not aim at solving the problems of the nation but the problems of the donor (Mukonka et al. 2014). African countries need heavy investment in the social sectors of the economy such as health in order to reduce donor dependency which is not sustainable and does not benefit the receiving nation (Hausmann-Muela and Eckl, 2015).

Lack of training to update health workers and NHCs on the new development in malaria treatment was another challenge which was observed in this study. The findings by Iskander (2015) have disputed training as a factor. He argues that while some amount of training seems critical to ensuring adequate performance, lengthy training programs can strain scarce health systems' human and financial resources. Multi-day trainings take away professional health workers from patients and volunteer CHWs away from income-generating activities and family responsibilities (Masaninga et al. 2008). On the other hand, Zhou and Dinh (2005) assert that human resource training would be the only solution to malaria elimination in the world hence it has to be enhanced.

Lack of skills training and training material for community education was another challenge which was cited in the study. In his findings Nyirongo (2012) agrees with the current findings that when he noted that there was inadequate teaching and learning material for malaria educators in Mansa District. This hampered the smooth delivery of malaria education to the local community. Mutale (2009) presented a contrasting finding which observed that malaria education messages were well disseminated to the communities in town. 82% of his respondents said that they watched television and got better information on malaria than what they heard from the community educator who selectively visited houses.

The current study established that there was inadequate indoor residual spraying (IRS) chemicals and spraying equipment which delayed IRS programs mainly because these were donor funded. These findings correlate with those of Mutale (2009) on the lack of consistent curative measures to malaria in Africa because the African countries waited for donor funding for them to carryout large scale malaria programs. Nyirongo (2013) also agrees that donor dependency by most third world countries has contributed to the persistence of the disease. He further states that donors end up dictating when the IRS should start and what population shall be targeted. Donor conditions that come with Aid leave African countries and Zambia in particular with a continuous challenge of inadequate chemicals and spraying equipment.

#### **5.5 Research Objective 4: to establish the solutions to the challenges encountered during the process of conducting the Malaria prevention Health Education Program**

Objective 4 highlighted the respondents' suggested solutions to the challenges encountered in the process of conducting the Malaria Prevention Health Education Program (MPHEP). In the quest to refresh the reader the challenges will be outlined proposed by the forwarded solutions.

The solutions to the challenges encountered during MPHEP gathered in this study were that government and stakeholders should provide trainings and capacity building programs to equip all officers involved with the skills and knowledge for effective MPHEP. These findings are in tandem with what was alluded to by Hausmann-Muela and Ecki (2015) in their study *Re-imagining malaria—a platform for reflections to widen horizons in malaria control*. The duo aver that the significance of drawing attention to the important role of several factors including: general health infrastructures (staff training, facilities, salaries, material and disposable supplies, equipment), the built environment (housing, urbanization, sanitation), and political economic factors influencing local communities that need to be taken under consideration (poverty, nutrition, migration, capital flows, accountability, political stability, and trust between civic actors) cannot be over emphasized. Re-structuring the way in which malaria is addressed beyond the health sector requires not only multispectral, but inter- and Trans disciplinary approaches to both development and disease control.

This solution is in tandem with the adoption element in the RE AIM frame work. The Adoption element of the RE AIM framework requires that there should be capacity building so that health workers embrace the program. It can be argued therefore, that for the MPHEP to be viable the Adoption of the MPHEP which refers to the absolute number or proportion of settings and/or staff that are willing to initiate a program or intervention, and the representativeness of participating settings and staff should be high.

The other solution brought forward in this study was that the government should provide more training for capacity building. This correlates with what Roberts and Matthews (2016:9) posit that:

*Although there has been a significant increase in the use of mosquito nets, particularly ITNs and LLINs, these control measures alone may not be sufficient... Supplementing these control measures with education of appropriate and consistent use of ITNs and LLINs, as well as education of practicing safe living habits, such as reducing outdoor activities during peak biting hours of a mosquito, can go a long way in aiding the reduction of the burden of malaria....*

This study has also found out that there was need to have a continuous spraying program unlike the annual spraying that was conducted mainly in September every year. In order to have an all-year-round IRS program in the communities, the government in the Third World countries ought to have a deliberate policy that supports the financing of these MPHE programs (WHO, 2014). Chizuni (2014) recommended a decentralized strategy for combating malaria. Thus allowing districts to determine the type of malaria prevention methods they would use according to the available funding. Mukonka et al. (2014) disputed that more sensitization should be done to reduce the myths that surround the aftermath of IRS. Such will enable a number of community member's open doors to allow the IRS team to eradicate malaria in the compounds.

The challenge of training as a factor that hindered effective MPHEP in Zambia has been dealt with differently. Mutale (2009) emphasized that there should be sharing of notes in the morning briefings amongst the workers aimed at disseminating skills so that they bridge the gap between those that have the needed skills and those that do not have the skill. WHO (2014) hinted on production of brochures about Malaria prevention in the workshops which would help the members of staff who did not attend a certain workshop to acquire the knowledge by reading. This would be one of the ways of equipping everyone with the same knowledge.

The other solution on content revolves around interpreting the brochures and leaflet into local languages such as Chinyanja and Ibibemba. One of the respondents submitted that:

*Content on MPHEP should be printed in local languages so that the common people can read and understand in their own language unlike the English language that we see on charts.*

With regards to transport for community mobilization for both the staff and the NHCs, the MOH (2010) reports that it provided bicycles for the malaria programs country wide but they were not well serviced hence they were packed. Phiri (2010) in Malawi proposed that the government employ permanent NHCs so that they could become responsible with the simple transport offers they were given like bicycles.

#### **5.6. Summary of the chapter**

This chapter has discussed the benefits of the MPHEP as being through the acquisition of the ITN, IRS, messages on malaria prevention and prompt malaria testing and treatment through NHCs and health workers. The discussion further centred on the preventive and curative measures obtained from the program. The study has also established that the key to combating malaria is when the right information about malaria prevention is given to people. Challenges discussed in the chapter included insufficient funding, inadequate human resource and untimely funding to the program which is mostly donor supported. Solutions included; providing a continuous budget and funding it for the MPHEP in the communities. The other solutions included translating the MPHEP reading materials into local languages, provision of trainings and capacity building activities to members of staff.

## **CHAPTER 6**

### **CONCLUSION AND RECOMMENDATIONS**

#### **6.1 Introduction**

The previous chapter availed to the reader a detailed discussion on the findings of this study in relation to the studies which have been done by other scholars as cited in the literature. This section outlines the conclusions from the findings and the discussions on the Benefits and possible improvements of the Malaria Prevention Health Education Program(MPHEP) in Mtendere Township. The findings and discussions were drawn in relation to the four objectives and the research questions that guided the study.

#### **6.2 Conclusion**

The aim of this study was to enquire on the benefits and possible improvements of the MPHEP in Mtendere Township. The conclusions were made with regards to the findings that have been validated by other studies in the academic world. This chapter unveils the way the objectives were fulfilled and how the research questions were answered.

The first objective established the benefits of the Malaria Prevention Health Education Program (MPHEP) in Mtendere Township. The objective was fulfilled and the research question was successfully answered. The benefits established in the study from the qualitative and quantitative responses included the following benefits: 48% (34) of the respondents benefited through Insecticide Treated Nets (ITNs), 36% (25) benefited from Indoor Residual Spraying (IRS) while 4% (3) mentioned that they had benefited through acquiring malaria drugs. 9% (6) were visited by the Neighborhood Health Committee members (NHCs) while 3% (2) said that they benefited through the malaria messages that they heard in the various forums. Qualitative findings also confirmed ITN, IRS and anti-malarial medicines as the benefits from the MPHEP.

The benefits recorded by the community members were a representation of the many benefits the MPHEP provided in Mtendere. Residents preferred material benefits to information related benefits. The malaria prevention messages seemed to be fading away as time went on.

The second research objective sought to establish the content of the Malaria Prevention Health Education Program. Findings and the discussion from the former and later chapter have provided sufficient ground to fulfill the research objective effectively and answering the research question successfully. The established content of the MPHEP included preventive measures in line with environmental management such as; closing windows early in the evening, slashing tall grass around the yard, using ITN consistently, IRS and burying waterlogged areas. Curative measures included prompt health seeking behavior for RDTs and malaria treatment whenever one felt ill was among the content which was common in the MPHEP meetings.

The established content of MPHEP is significant to the reduction and the consequent elimination of the malaria pandemic in Mtendere community with the provision of capacity building to the NHCs and health workers. Despite putting up relevant content for MPHEP, there was no guarantee that the community members would be persuaded to continue to practice the environmental measures which are at personal and community level. There was inadequate monitoring by NHCs and health personnel to encourage households to slash tall grass, retreat and use ITNs and burry waterlogged areas.

The third objective sought to establish the various challenges which were encountered in the process of executing the MPHEP. Findings highlighted problems of erratic funding for the MPHEP which was donor sponsored, hence it did not solve the immediate malaria problems of the community and country. Lack of training to update health workers and NHCs on the new development in malaria treatment was another challenge. In addition, lack of skills training and training material for community education was another challenge which was cited. Lastly, the study established that there was inadequate IRS chemicals and spraying equipment which delayed IRS programs mainly because these were donor funded.

Some challenges can be solved using local or community interventions like training of NHCs and health workers. In order to achieve this skills training workshops and staff updates can be used as avenues of enabling the clinical staff and other health workers to assist and share with the NHCs the relevant malaria prevention skills so that they could serve lives in the

community. There was inadequate transport for community mobilization for both the staff and the NHCs. Improved MPHEP implementation would foster malaria elimination if the methods of information dissemination were improved in the community. Headways are being made to malaria elimination though at a slow pace.

The last objective sought to find the solutions to the challenges which were being faced in the process of conducting MPHEP in Mtendere residential area. The first solution was that government and stakeholders should provide trainings and capacity building programs to equip all officers involved with the skills and knowledge for effective MPHEP. The other solution was that the government should have a deliberate policy that supports the financing of the IRS program in the communities so that it can be an all year round. Training programs should be organized at the clinics to equip the NHCs with the necessary MPHE skills. A continuous supply of transport like vehicles and bicycles should be provided so as to enhance the effectiveness of the program and to motivate NHCs.

### **6.3. Recommendations**

Based on the findings, discussions and conclusion, the study makes the following recommendations:

- I. The Government of the Republic of Zambia, through the Ministry of Health (MOH), should provide adequate funding towards MPHEPs to enable them carry out their organizational functions and educational activities including workers' education smoothly. When the programs are funded, MOH with the local community as stakeholders should budget and allocate enough funds to workers' education activities and capacity building. Management should ensure that funds meant for staff training and capacity building is not diverted to other activities.
- II. As a community, Mtendere clinic and the residents should find other ways to raise funds for the MPHEP. They should come up with innovations such as Public Private Partnership (PPP) so that other cooperate organizations can be encouraged to come on board and sponsor some income generating activities.

- III. The MOH must employ more health workers so that time is given to all the patients at the health facility. The shortage of Human Resource at the clinic is making the few workers to fail to regularly go for MPHEP in the community because of inadequate staff in the clinic.
- IV. The government and donors should ensure that transport for NHCs is procured so that they could cover enough households in the community. This will enable community members to have quick access to the NHCs and the NHCs will have a wider coverage of reporting the health issues in the community since they will be mobile.
- V. The clinic management should partner with local political leaders and business houses so that they can raise funds to help procure enough chemicals for IRS. This will reduce on the over dependency on the government and the tied aid from the donors.
- VI. The community should ensure that they follow the preventive measures taught through the MPHEP so that malaria is eliminated in the community. These measures would help families to be safe and malaria free for some time unless they travel out of Lusaka. Families and households should be in the forefront in practicing these measures.

#### **6.4 Summary of the chapter.**

This chapter has discussed the conclusions from the study which was based on the Benefits and possible improvements of the MPHEP in Mtendere township of Lusaka. The study has outlined various benefits which community members have benefited from the program. The contents of the messages have been established while challenges have been identified together with their solutions. A number of recommendations have been made to all the concerned parties like the government, donors, community members and the Mtendere clinic management.

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## Appendix 1

### Interview guide for the Environmental Health Technologist (EHT) at Mtendere Clinic

Dear Participant,

I am Mubita Namuyamba, a student at The University of Zambia (UNZA) undertaking a study in a Master's programme in Adult Education. I am currently undertaking a study entitled 'An Enquiry into the Benefits and Possible Improvements of the Malaria Prevention Health Education in Mtendere residential area. I am therefore humbly asking if you can spare sometime to participate in an interview and answer the questions to the best of your knowledge.

The information that will be gathered is meant for academic purposes only and will be treated with confidentiality and anonymously. No harm will come to you.

1. For how long have you worked at Mtendere Clinic?
2. The Ministry of Health has Malaria Prevention Health Education (MPHE) targeting the reduction of Malaria prevalence in the community. How is Mtendere Clinic implementing the Malaria Prevention Health Education (MPHE)?
3. Who are your clients for the MPHE?
4. What is the community benefiting from the MPHE?
5. How are pregnant women benefiting from the MPHE?
6. How are the mothers benefiting from the MPHE?
7. What are the challenges you encounter during delivery of MPHE?
8. What challenges do you think the participants have during the process of conducting MPHE?
9. What challenges does the clinic face when providing MPHE?
10. What do you teach during the MPHE?
11. What else do you think should be included in the content of the MPHE?
12. What should be done to make MPHE more effective and efficient in reducing malaria?

13. What should be done to solve the challenges faced in the process of conducting MPHE?

14. What improvements would you like to see in the MPHE?

I wish to thank you very much for having spared some time to participate in the interview.

**GOD BLESS YOU**

## Appendix 2

### Interview guide for the Sister –in- Charge at Mtendere Clinic

Dear Participant,

I am Mubita Namuyamba, a student at The University of Zambia (UNZA) undertaking a study in a Master's programme in Adult Education. I am currently undertaking a study entitled 'An Enquiry into the Benefits and Possible Improvements of the Malaria Prevention Health Education in Mtendere Township. I am therefore humbly asking if you can spare sometime to participate in an interview and answer the questions to the best of your knowledge.

The information that will be gathered is meant for academic purposes only and will be treated with confidentiality and anonymously. No harm will come to you.

1. For how long have you worked at Mtendere Clinic?
2. The Ministry of Health has Malaria Prevention Health Education (MPHE) targeting the reduction of Malaria prevalence in the community. How is Mtendere Clinic implementing the Malaria Prevention Health Education (MPHE)?
3. Who are your clients for the MPHE?
4. What is the community benefiting from the MPHE?
5. How are pregnant women benefiting from the MPHE?
6. How are the mothers benefiting from the MPHE?
7. What are the challenges you encounter during delivery of MPHE?
8. What challenges do you think the participants have during the process of conducting MPHE?
9. What challenges does the clinic face when providing MPHE?
10. What do you teach during the MPHE?
11. What else do you think should be included in the content of the MPHE?
12. What should be done to make MPHE more effective and efficient in reducing malaria?

13. What should be done to solve the challenges faced in the process of conducting MPHE?

14. What improvements would you like to see in the MPHE?

I wish to thank you very much for having spared some time to participate in the interview.

Should you wish to contact me my address is the following:

### **Appendix 3**

#### **Focus Group Discussion guide for nurses at Mtendere Clinic**

Dear Participant,

I am Mubita Namuyamba, a student at The University of Zambia (UNZA) undertaking a study in a Master's programme in Adult Education. I am currently undertaking a study entitled 'An Enquiry into the Benefits and Possible Improvements of the Malaria Prevention Health Education in Mtendere Township. I am therefore humbly asking if you can spare sometime to participate in a Focus Group Discussion and answer the questions which I will pose.

The information that will be gathered is meant for academic purposes only and will be treated with confidentiality and anonymously. No harm will come to you.

If you feel uncomfortable you can withdrawal from the Focus Group Discussion.

1. For how long have you worked at Mtendere Clinic?
2. How is Mtendere Clinic implementing the Malaria Prevention Health Education (MPHE)?
3. Who are your clients for the MPHE?
4. What do you teach during the MPHE?
5. What is the community benefiting from the MPHE?
6. How are pregnant women benefiting from the MPHE?
7. How are the mothers benefiting from the MPHE?
8. What are the challenges you encounter during the delivery of MPHE?
9. What challenges do you think the participants have during the process of conducting MPHE?
10. What challenges does the clinic face when providing MPHE?
11. What else do you think should be included in the content of the MPHE?
12. What should be done to make MPHE more effective and efficient in reducing malaria?

13. What should be done to solve the challenges faced in the process of conducting MPHE?

14. What improvements would you like to see in the MPHE?

I wish to thank you very much for having spared some time to participate in the Focus Group Discussion.

## Appendix 4

### **Focus Group Discussion guide for Neighbourhood Health Committee (NHC) members at Mtendere Clinic**

Dear Participant,

I am Mubita Namuyamba, a student at The University of Zambia (UNZA) undertaking a study in a Master's programme in Adult Education. I am currently undertaking a study entitled 'An Enquiry into the Benefits and Possible Improvements of the Malaria Prevention Health Education in Mtendere Residential Area. I am therefore humbly asking if you can spare sometime to participate in a Focus Group Discussion and answer the questions which I will pose.

The information that will be gathered is meant for academic purposes only and will be treated with confidentiality and anonymously. No harm will come to you. If you feel uncomfortable you can withdrawal from the Focus Group Discussion.

1. For how long have you worked at Mtendere Clinic?
2. Which Zone do you represent?
3. How are you implementing the Malaria Prevention Health Education (MPHE)?
4. Who are your clients for the MPHE?
5. What do you teach during the MPHE?
6. What is the community benefiting from the MPHE?
7. How are pregnant women benefiting from the MPHE?
8. What do you think is happening to the number of Malaria cases in your Zone?
9. How are the mothers benefiting from the MPHE?
10. What are the challenges you encounter during the delivery of MPHE?
11. What challenges do you think the participants have during the process of conducting MPHE?
12. What challenges does the clinic face when providing MPHE?
13. What else do you think should be included in the content of the MPHE?

14. What should be done to make MPHE more effective and efficient in reducing malaria?
15. What should be done to solve the challenges faced in the process of conducting MPHE?
16. What improvements would you like to see in the MPHE?

*I wish to thank you very much for having spared some time to participate in the Discussion.*

## Appendix 5

### Focus Group Discussion guide for women at the under 5 clinic

Dear Participant,

I am Mubita Namuyamba, a student at The University of Zambia (UNZA) undertaking a study in a Master's programme in Adult Education. I am currently undertaking a study entitled 'An Enquiry into the Benefits and Possible Improvements of the Malaria Prevention Health Education in Mtendere Residential Area. I am therefore humbly asking if you can spare sometime to participate in a Focus Group Discussion and answer the questions which I will pose.

The information that will be gathered is meant for academic purposes only and will be treated with confidentiality and anonymously. No harm will come to you. If you feel uncomfortable you can withdrawal from the Focus Group Discussion.

1. For how long have you been coming to Mtendere Clinic?
2. How is Mtendere Clinic implementing the Malaria Prevention Health Education (MPHE)?
3. Who are your clients for the MPHE?
4. What do you teach during the MPHE?
5. What is the community benefiting from the MPHE?
6. How are pregnant women benefiting from the MPHE?
7. How are the mothers benefiting from the MPHE?
8. What are the challenges you encounter during the delivery of MPHE?
9. What challenges do you think the participants have during the process of conducting MPHE?
10. What challenges does the clinic face when providing MPHE?
11. What else do you think should be included in the content of the MPHE?
12. What should be done to make MPHE more effective and efficient in reducing malaria?

13. What should be done to solve the challenges faced in the process of conducting MPHE?

14. What improvements would you like to see in the MPHE?

*I wish to thank you very much for having spared some time to participate in the Focus Group Discussion.*

## Appendix 6.

### Questionnaire for mothers at the Mother and Child Health Clinic.

Dear Respondent,

I am Mubita Namuyamba, a student at The University of Zambia (UNZA) undertaking a study in a Master's programme in Adult Education. I am currently undertaking a study entitled "An Enquiry into the Benefits and Possible Improvements of the Malaria Prevention Health Education in Mtendere Residential Area". I am therefore asking if you can spare sometime to answer a questionnaire.

The information that will be gathered is meant for academic purposes only and no harm will come to you.

### INSTRUCTIONS

- I. Please do not write your name on the questionnaire.
- II. Put a tick  $\surd$  in the space [ ] that you feel is appropriate.
- III. Fill in the spaces provided.

**QUESTIONNAIRE** No.....

**Date**.....

### **Section A: Biodata**

1. Sex

Male [ ] Female [ ]

2. Age range

10-19 [ ]

20- 29 [ ]

30-39 [ ]

40-49 [ ]

50-59 [ ]

3. Level of education attained.....

4. Profession.....

**Section B**

***a. What are the benefits of the Malaria Prevention Health Education (MPHE) programme?***

5. What is Malaria?

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6. What is Malaria Prevention Health Education (MPHE)?

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7. How have you benefited from Malaria Prevention Health Education (MPHE)?

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8. What are your experiences during MPHE.

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9. What differences have you seen in your family in terms of malaria prevention after the MPHE programme?

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10. What differences have you seen in your community in terms of malaria prevention after they participated in MPHE programme?

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***b What are the challenges encountered during the process of conducting the MPHE programme?***

11. What challenges do you have during MPHE programme?

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12. Do you think the number of staff providing the MPHE is sufficient?

Yes [ ]

No [ ]

13. Give reasons for your answer to question 8.

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14. What challenges do you think nurses experience when conducting MPHE?

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15. What challenges do you think hinder efficient and effective MPHE on the part of the clinic and Government?

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*c What are the contents of the MPHE programme?*

16. What do you learn during MPHE?

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17. Which part did you enjoy most during the MPHE sessions?

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18. Which lessons were most important during MPHE?

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19. Explain your answer to question 18.

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*D what are the possible solutions to the challenges encountered in the process of conducting MPHE?*

20. What would you like to be included in the MPHE content?

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21. Give reasons for your answer to question 20.

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22. How would the MPHE programme be made better by the nurses?

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23. How would the MPHE programme be made better by the clinic and Government?

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24. How would the MPHE programme be made better by the Mtendere community?

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**THE END**

We have now come to the end of our questionnaire.

I wish to thank you very much for having spared some time to answer the questions. Should you wish to contact me my address is the following:

The University of Zambia.  
Directorate of Post Graduate Studies  
Department of Adult Education  
P.O.Box 32379.  
Lusaka.  
Cell No. 0977 36 1980.

**Appendix 7: Introductory letter from DRGS**



**THE UNIVERSITY OF ZAMBIA  
SCHOOL OF EDUCATION**

Telephone: 291381  
Telegram: UNZA, LUSAKA  
Telex: UNZALU ZA 44370

PO Box 32379  
Lusaka, Zambia  
Fax: +260-1-292702

Date: 27/07/15

**TO WHOM IT MAY CONCERN**

Dear Sir/Madam

**RE: FIELD WORK FOR MASTERS / PhD STUDENTS**

The bearer of this letter Mr./Ms. MURITA NAMUDJAMBA Computer number 514708329 is a duly registered student at the University of Zambia, School of Education.

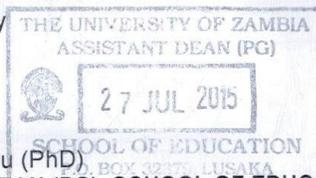
He/She is taking a Masters/PhD programme in Education. The programme has a fieldwork component which he/she has to complete.

We shall greatly appreciate if the necessary assistance is rendered to him/her/

Yours faithfully

*601 Dze.*

Daniel Ndhlovu (PhD)  
ASSISTANT DEAN (PG)- SCHOOL OF EDUCATION



cc. Director, DRGS  
Dean, Education

**Appendix 8: Letter of Permission from Ministry of Community Development Mother and Child Health**

All communications should be addressed to the Community Development Officer

Telephone: +260-211-235554  
Telefax: +260-211-236429



In reply please quote

No.:.....

REPUBLIC OF ZAMBIA

**MINISTRY OF COMMUNITY DEVELOPMENT  
MOTHER AND CHILD HEALTH**

DISTRICT COMMUNITY HEALTH OFFICE  
P. O. BOX 50827  
LUSAKA

19<sup>th</sup> August 2015

Mubita Namuyamba (Ms)  
The University of Zambia  
School of Education  
P.O. Box 32379.  
**LUSAKA**

Dear Ms. Namuyamba

**RE: AUTHORITY TO CONDUCT RESEARCH IN LUSAKA DISTRICT**

We are in receipt of your letter over the above subject.

Please be informed that Lusaka district community health office has no objection for you to conduct the research study on **"An enquiry into the benefits and possible improvements of the Malaria Prevention Health Education in Mtendere Township"** for academic purposes only.

Please ensure that a copy of the summary of the findings is also provided to Lusaka District Community Health Office at the end of the research study.

By copy of this letter, the health centre In-charge for Mtendere Clinic is herewith informed.

Yours sincerely

Dr. Matimba Chiko  
**ACTING PRINCIPAL CLINICAL CARE OFFICER  
For/DISTRICT MEDICAL OFFICER**

C.C: The In-charge: Mtendere Health Centre  
C.C: Assistant Dean: Mr. Daniel Ndhlovu (PhD)

*Kindly assist the  
bearer of this  
letter to conduct  
her research*

REPUBLIC OF ZAMBIA  
MINISTRY OF HEALTH

12 Nov 2015

SISTER-IN-CHARGE'S OFFICE  
MTENDERE HEALTH CENTRE  
P.O. BOX 50827, LUSAKA

## Appendix 9: Ethical clearance



**THE UNIVERSITY OF ZAMBIA**  
**DIRECTORATE OF RESEARCH AND GRADUATE STUDIES**

Telephone: +260 -1- 290258/291777 Ext. 2208  
Fax: +260-1-290258/253952  
E-mail: [drgs@unza.zm](mailto:drgs@unza.zm)

P O Box 32379  
Lusaka, Zambia

10<sup>th</sup> August, 2016

Ms. Mubiata Namuyamba  
C/o School of Education  
Department of Adult Education and  
Extension Studies  
P.O Box 32379  
**LUSAKA**

Dear Ms. Mubita,

**RE: FULL ETHICAL CLEARANCE**

With reference to your research proposal entitled: **"An Enquiry into the Benefits and Possible Improvements of the Malaria Prevention Health Education Programme in Mtendere Residential Area,"** you are hereby given full ethical clearance to proceed with your research.

**ACTION:** APPROVED  
**DECISION:** 10<sup>th</sup> August, 2016  
**EXPIRATION DATE:** 9<sup>th</sup> August, 2017

However, it is recommended that all data to be collected should be kept confidential and that if there are plans for publication or dissemination of results, the names of the participants should not be linked with the research in order to ensure confidentiality.

Please note that you are expected to submit to the Secretariat a Progress Report and a copy of the full report on completion of the project.

Finally, and more importantly, take note that notwithstanding ethical clearance given by the HSSREC, you must also obtain authority from the Permanent Secretary of the appropriate Ministry before conducting your research.

Yours sincerely,

Dr. J. Simwinga, PhD  
**ASSISTANT DIRECTOR (RESEARCH)**  
**DIRECTORATE OF RESEARCH AND GRADUATE STUDIES**

cc: Director, Directorate of Research and Graduate Studies  
Acting chairperson - humanities and social sciences research ethics committee  
Acting Assistant Registrar (Research), Directorate of Research and Graduate Studies