THE UNIVERSITY OF ZAMBIA
SCHOOL OF MEDICINE
DEPARTMENT OF POST BASIC NURSING

NURSES' KNOWLEDGE AND PRACTICE TOWARDS MALARIA CASE MANAGEMENT IN LUSAKA URBAN CLINICS.

BY

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I would also like to extend my indebtedness and gratitude to my husband, my two children Tj and Lusekelo, not forgetting my niece Ruth, who has faithfully looked after my daughter during the time of writing this research report.
To all of you, I say thank you and God richly bless you.

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LIST OF ABBREVIATIONS

ACPR	Adequate clinical and parasitologic response
AIDS	Acquired immune deficiency syndrome
ANC	Antenatal clinic
CBOH	Central Board of Health
CSO	Central statistical office
DHMT	District Health Management Team
GNC	General Nursing Council of Zambia
HIV	Human Immunodeficiency Virus
HMIS	Health Information Systems
IEC	Information, Education and Communication
IRS	Indoor Residual Spraying
ITNs	Insecticide –Treated Nets
IPT	Intermittent Presumptive Treatment
JICA	Japanese International Co-Operation Agency
JCTR	Jesuit Centre for Theological Reflection
LWSC	Lusaka Water Sewerage Company
MIS	Malaria Indicator Survey
MMD	Movement for Multi-Party Democracy
MoH	Ministry of Health
NMCC	National Malaria Control Centre
NMSP	National Malaria Strategic Plan
PCR	Polymerase Chain Reaction
RBM	Roll Back Malaria
RDT	Rapid Diagnostic Tests

UNIP	United National Independence Party
UTH	University Teaching Hospital
VIPs	Ventilated Improved Pit-Latrines
WHO	World Health Organisation
Zamtel	Zambia Telecommunications Company
ZNA	Zambia Nurses' Association
ZNBC	Zambia National Broadcasting Co-Operation

DECLARATION

I, hereby, declare that the work in this study for the degree of Bachelor of Science in Nursing has not been presented either wholly or partially for any other degree and is not being currently submitted for any degree at the University of Zambia.

Signed:..... Date: 12/05/08.

(Candidate)

Signed:..... Date: 23/04/08

(Supervisor)

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STATEMENT

I hereby certify that this study is entirely the result of my own independent investigations and efforts.

The various persons and sources, to which I am highly indebted, are clearly acknowledged in the text and references

Signed:.....

(Candidate)

DEDICATION

I dedicate this study to my beloved husband, Teddy, my son Tj and daughter, Lusekelo for their support, patience and understanding when they needed the love and care that I owe them.

I also dedicate this study to my parents – Mr. and Mrs. Koloko, brothers – Obedy, Kelvin, Jonathan, Mischeck and Labson, My two (2) sisters – Maureen and Paxina and my dear niece Ruth for their support while studying.

ABSTRACT

Malaria is the world's most lethal blood sucking infection. It takes life from more people than any other infections virus, apart from tuberculosis (TB). The global incidence of malaria is estimated to be nearly 120 million clinical cases each year, with 300 million people carrying the parasite. Malaria risk of varying degree exists in 99 countries or areas. However, *falciparum* malaria does not exist or its relative prevalence is less than 1% in 13 countries. In Zambia, malaria is endemic in all nine (9) provinces with plasmodium *falciparuim* accounting for 95 % of malaria cases. Artemeter-lumefantrin is the first line treatment for uncomplicated malaria. Quinine is second line treatment in case of failure to the first line drug in all age groups. Quinine is also used for treatment of complicated malaria.

The purpose of this study was to determine Nurses' knowledge and practice towards malaria case management in Lusaka urban clinics and this is the general objective.

Literature review was conducted globally, regionally and locally and it was based on malaria case management. The review showed that In Zambia, malaria continues to be the major cause of visitations to the health facilities. This study is a descriptive cross-sectional study that was carried out in September, 2007 in Lusaka Urban Clinics. Fifty (50) respondents who were nurses working in the health centres at the time of the study were conveniently selected to participate in the study. The four (4) health

centres selected were Civic centre, Chilenje, Kabwata and Kamwala clinics.

A self-administered questionnaire was used to collect data from the respondents on malaria case management. Before undertaking the main study, a pilot study was conducted at University Teaching Hospital (UTH) in August, 2007 in order to test the instrument after which necessary changes were made to the study instrument

The study was conducted between 3rd and 21st September, 2007. Data was analysed manually using a data master sheet and the information was presented in frequency tables, pie charts and bar charts.

The results of the evaluation of Nurses' knowledge and practice towards malaria case management in Lusaka Urban revealed that most of the respondents (46%) were within the age 30 to 39 years old. Majority (72%) of the respondents were Enrolled nurses. Most (78%) of them were married. Twenty-six percent (26%) of these respondents had been in service between 6 and 10 years and another 26% had served for a period of 11 to 15 years. All (100%) of the respondents had nursed a client with malaria before.

The study revealed that there was inadequate knowledge and bad practice regarding malaria case management among nurses in Lusaka Urban. Forty-four percent (44%) of the respondents within the age group 20 - 29

years had low levels of malaria case management. Furthermore, all (100%) of nurses who had been in service between 1 and 5 years had bad practices towards malaria case management. This study also revealed that despite the high levels of knowledge on malaria case management; this did not have an impact on malaria case management as shown by 83% of the registered nurses who had bad practices regarding malaria case management.

The following recommendations were made:

- The Ministry of Health (MoH) to retrain all nurses in the country on malaria case management in order for them to provide quality care and prevent mortality due to malaria.
- The Ministry of Health (MoH) should provide all necessary drugs and equipment on time to the health centres for the smooth operation of the centres.
- The Management of the health centres to ensure that there is enough stock of anti-malarial drugs for continuity of care.

CHAPTER 1

INTRODUCTION

1.1 BACKGROUND INFORMATION

1.1.1 PROFILE FOR ZAMBIA

Zambia was born on the 24th October 1964, after a gestation period of 70 years in the womb of white colonial masters (National Achieves). Immediately she changed her name from Northern Rhodesia to Zambia, taken from one of Africa's biggest rivers whose source is in this country; the mighty Zambezi River.

Zambia is classified as a third world country (developing country as well as in the brackets of highly indebted poor countries with an average of 80% of the population living on less than one US dollar per day (Jesuit Center For Theological Reflection, (JCTR), 2004).

Located south of the equator in the Sub-Saharan region of Africa, the country is landlocked and covers a total area of 752, 614 square kilometers (approximately 2.5 % of the entire continent). She shares friendly and peaceful boundaries with eight (8) countries namely; Malawi and Mozambique in the east, Namibia in the southwest and Angola in the west. Laying on the north are the Democratic Republic of Congo while

Botswana and Zimbabwe taking the southern frontiers (Central Statistical Office (CSO), 2003).

For administrative convenience, Zambia is divided into nine (9) provinces, 73 districts and 150 constituencies. The districts are categorized as city, municipal and district councils depending on their sizes and economic status as well as population.

Lusaka is the capital city of Zambia. The country has a population of 10.3 million with an annual growth rate of 2.9% (CSO, 2003). According to the 2000 census of population and housing, the female population is 5 214 740 accounting for 51% while that of the male stands at 5 070 000 representing 49%.

Geographically, Zambia is 1300 meters above sea level and lies between latitudes 8 and 18 degrees south of the equator and between longitudes 20 and 35 degrees east of the Greenwich meridian. The country has a tropical climate and is covered by woodland savanna type of vegetation. It has three (3) distinct seasons namely the cool dry winter from May to August, a dry season during the months of September and October and a hot and wet season from November to April. The northern part of the country receives the highest rainfall with the annual average ranging from 1100 millimeters. The eastern and southern parts receive less rainfall

ranging from 600 to 1100 millimeters annually. These fall under drought prone areas (CSO, 2003).

Zambia holds 40% of the natural water sources in Sub-Saharan Africa. Common among them are the Zambezi River (the largest in Africa), the Kafue River (one of the longest in Africa), the Kabompo River (the deepest in Africa), the Luangwa and Luapula rivers. The country also has major lakes such as Lake Tanganyika on the boarder with Tanzania on the north, Lake Mweru, shared with the Democratic Republic of Congo in the north, and Lake Bangweulu. Zambia is also home of the second largest man made lakes in Africa – Lake Kariba. The country also boasts and prides itself in one of the Seven Wonders of the World – the mighty Victoria Falls (named after the then Queen of Britain).

Since 1964, Zambia has been ruled by three republican presidents namely Dr. Kenneth D. Kaunda (1964 –1991) of the United National Independence Party (UNIP), Dr. Fredrick J. T. Chiluba (1991 –2001) of Movement for Multiparty Democracy (MMD) and the incumbent Mr. Levy P. Mwanawasa, State Council also of the MMD from 2002 to date.

1.1.2 HEALTH CARE SYSTEM IN ZAMBIA.

The government mainly runs the health care system in Zambia. It consists of hospitals, health centers, and health posts. There are a few hospitals

run by the private sector and the Defence forces. Before the MMD came into power that is around the mid 1980s, there was a significant decline in the provision of health services in Zambia. The infrastructure was run down, there were inadequate drugs in the hospitals, and staff shortage and the few that were present were demotivated.

When Movement for Multiparty Democracy (MMD) came into power in 1991, it developed a radical and future direction of providing health services. Their manifesto brought about fundamental changes towards improvement in the health care service delivery. These fundamental changes included the introduction of the Health Reforms. The vision of the health reforms in Zambia was to provide equity of access to high quality, cost-effective care as close to the family as possible.

The health reforms created an enabling environment for actually achieving significant health improvement for the people of Zambia. The main thrusts of these Reforms were to decentralize the planning, management and decision making of the running of health services to the districts and Hospital Boards. This decentralization brought about the introduction of referral system, which starts from a health post, to health centers, District Hospital, first referral hospital, second referral hospital and finally the third referral hospital, which is the largest hospital in Zambia with a lot of

specialties. There was also the introduction of District Boards that run the clinics and Hospital Boards that managed the hospitals.

The introduction of Health reforms meant that certain diseases had to be treated at particular institutions for example first referral hospitals dealt with cases that were not managed by the district or health centers. In the same line it was now a government policy that uncomplicated malaria had to be treated at the clinics, while big institutions like University Teaching Hospital (U.T.H.) had to deal with complicated and severe malaria. With this responsibility vested upon the clinics they had to look at methods and strategies of combating malaria in the community as they worked hand in hand with these communities.

1.1.3. OVERVIEW OF MALARIA.

Malaria which is caused by a plasmodium parasite can be prevented and treated. There are four (4) species of plasmodium that infect humans. These are *Plasmodium falciparum, plasmodium malariae, plasmodium ovale* and *plasmodium vivax.* Plasmodium falciparum is the commonest species in the hotter parts of the world and is responsible for much sickness and even death. Plasmodium vivax is the commonest species in the cooler parts of the tropics, the largest malaria parasites found in humans and the cause of much illness.

Plasmodium malariae is a less common species but one that occurs throughout much of the world. Plasmodium ovale is a relatively rare species but reported from time to time in many countries, especially in Africa; sometimes confused with plasmodium vivax (National Malaria Control Center (NMCC) 2004). Malaria is transmitted by mosquitoes and less frequently by transfusion with unscreened blood. Out of all the cases in Zambia, 95% are caused by Plasmodium falciparum, which is a parasite associated with severe malaria (Central Board of Health (CBOH), 2004.)

1.1.3.1. Clinical Presentation

Malaria may be asymptomatic or symptomatic, acute or chronic. Acute symptoms are often preceded by prodromal illness consisting of malaise, headache, myalgia and anorexia. These symptoms are often non specific and the incubation period ranges from 8-28 days in all species. Fever is a common manifestation of malaria and the following are some of the stages involved in a rigor:

- **Cold stage**

It is characterized by shivering, intense feeling of cold, lips and fingers are cyanotic, dry and pale. In children there may be seizures. This stage takes about 15 minutes to 60 minutes.

- **Hot stage**

  This stage lasts about 2-6 hours and it is caused by temperature which could be above 41Oc. It is characterized by full bound pulse, dry burning skin, intense headache, and nausea and vomiting.

- **Sweating stage**

  The sweating stage lasts about 2-4 hours and it is characterized by profuse sweating, temperature falls rapidly below normal, patient falls into a deep sleep and on waking up the patient feels weak, but better (Koneman et al, 1997).

Malaria if not treated early causes anemia, abortions and low birth weights in pregnancy. Repeated attacks of malaria results in malnutrition and lowered resistance to illnesses. It may also be a major cause of high infant mortality.

The malaria problem has been worsened by the low and loss of immunity of the Zambian people by HIV/AIDS pandemic. The government of Zambia has realized the effect that malaria has on its people, therefore, it has put prevention and treatment of the disease as a pririority. Measures such as the use of treated insecticide nets, Intermittent Pressumtive treatment of malaria in pregnancy, indoor residual spraying in some areas.

According to the national malaria policy artemether-lumefatrine (Coartem) is the first line drug for treating uncomplicated malaria. Where this drug is contraindicated sulfadoxine-pyrimethamine (Fansidar) is used, except during the first trimester of pregnancy. Quinine is the first line drug for use during the first trimester of pregnancy. For severe and complicated malaria, quinine is the recommended first line drug for all population categories.

Malaria being a major public health problem in Zambia has continued to exact its largest toll on children and pregnant women (MOH, 2006). Efforts to control malaria are currently being scaled up through coordinated efforts among Roll Back Malaria (RBM) partners. The Zambian Government has identified malaria control as one of its main public health priorities. This is emphasized in both the National Development Plan 2006 –2011 and the National Health Strategic Plan 2005 – 2009. In this respect, the Government, through the National Malaria Control Center, has developed a detailed National Malaria Strategic Plan 2006 – 2011 (NMSP 2006), aimed at significantly scaling up malaria control interventions towards the achievement of the national vision of "a malaria free Zambia" Ministry of Health (MOH), 2006).

Insecticide-Treated Nets (ITNs) and Indoor Residual Spraying (IRS) are the primary control strategies for preventing malaria transmission in

Zambia. Results from the (2006), Malaria Indicator Survey (MIS), indicate that 50.1% of Zambian households have at least one mosquitoe net and 44.4% of households have at least one insecticide-treated net. IRS is also being conducted in 15 districts with Kabwe recording the highest percentage of 71.1% of households being sprayed within the previous 12 months (MOH, 2006).

In order to prevent malaria in pregnancy, women are encouraged to use ITNs and take three courses of Fansidar known as Intermittent Presumptive Treatment of malaria in pregnancy. The Malaria Indicator Survey (2006) revealed that 77% of mothers took an anti-malarial drug for prevention during their last pregnancy, while 75% of the mothers received the antimalarial drug during a routine antenatal clinic (ANC) visit. Of the mothers who took an antimalarial drug, 62% took the recommended two or more doses of IPT.

. STATEMENT OF THE PROBLEM

Malaria is a major health problem in Zambia, which has continued to have its toll on children and pregnant women (MOH, 2006). Crude parasite rates are estimated at 75-90% in rural areas and 20-70% in urban areas (WHO, 1998 – 2000). Malaria accounts for 31.8% and 35.6% of hospital and health center facility admissions respectively (NMCC, 2004). Mortality rates due to malaria are in the range of 14.8% in hospitals and 21.1% in

other health care facilities which have been recorded (WHO, 1998 – 2000). In addition, there is a high degree of therapeutic failure (both clinical and parasitological) ranging between 20% and 50% (WHO, 1998 – 2000).

Malaria is endemic in Zambia and it is a leading cause of morbidity and mortality among the under-fives especially.

Table one (1) below shows the total number of mortality in under fives due to malaria from 1999 to 2004.

Table 1: MORTALITY FIGURES IN THE UNDER – FIVES FROM 1999 – 2004.

YEAR	REPORTED UNDER –5 DEATHS
1999	4820
2000	5157
2001	5498
2002	4717
2003	4653
2004	3654

Source: NMCC, Strategic Plan, 2006 –2010.

According to the NMCC, (2006 –2010) strategic Plan, the year 2001 had the highest number of deaths among the children attributed to malaria as reflected in table one (1) above.

Malaria is the common cause of outpatient attendances and hospital admissions in all age groups with the highest rates being among the more risk groups which are the under fives and the pregnant women as indicated in table two (2) below. It is a leading cause of morbidity and mortality in Zambia accounting for a 40% of all outpatient attendances and 37% of hospital admissions in the country (General Nursing Council of Zambia, 2007). Malaria further accounts for 20% of maternal deaths as well as contributing significantly to anaemia, premature delivery and low birth weight in infants. Hospital admissions due to malaria and fatality rates have also increased (MoH, 2005; Zambia Nurses' Association (ZNA), 2005). In 2003, Malaria was the first among the ten (10) causes of visitations to the health facilities.

Table 2: TEN MAJOR CAUSES OF VISITATIONS TO THE HEALTH FACILITIES IN ZAMBIA.

DISEASE NAME	INCIDENCE RATE PER 1000 POPULATION		
	UNDER 5	5 and OVER	TOTAL
1. Malaria	1,296.4	226.3	428.0
2. Respiratory Infections: non-Pneumonia	523.1	100.2	179.9
3. Diarrhoea: Non – Bloody	290.7	34.5	82.8
4. Respiratory infection: Pneumonia	167.0	23.6	50.6
5. Trauma	62.0	42.0	45.8
6. Eye infections	170.0	15.6	44.7
7. Skin infections	101.7	23.2	38.0
8.Ear/Nose/Throat infections	63.0	16.2	25.1
9. Anaemia	65.0	11.4	21.5
10. Intestinal Worms	60.0	10.2	20.2

Source: CBOH, HMIS 2003.

Although there are measures being taken to prevent and treat malaria, people are still suffering from malaria and malaria admissions accounts for the large percentage of the total admissions. According to the Annual Health Statistical Bulletin, 2003, malaria was the highest cause of morbidity and it contributed 37% to the total diagnoses.

The health care systems in Zambia comprise several health care professionals but the Nurses are the majority. They form the backbone of the health care system and are found at the grass root levels. The nurse is the member of the health care team who is with the patient for 24 hours in a day. They administer the antimalarial drugs and prescribe the same in health centers and rural places. The nurse also monitors the effects of the drugs once administered. It is therefore, prudent that the nurses' knowledge and practices towards malaria case management are assessed.

1.2. FACTORS CONTRIBUTING/INFLUENCING NURSES' KNOWLEDGE AND PRACTICE TOWARDS MALARIA CASE MANAGEMENT.

There are several factors influencing nurses' knowledge and practice towards malaria case management and these factors can be categorized into two and these are socio-demographic and service related factors.

1.3.1. SOCIO- DEMOGRAPHIC FACTORS.

1.3.1.1. Age

In respect to practice the older nurses may perform better on malaria case management due to experience though they may not have adequate and latest information. But their attitude may be slightly better because they had a calling to be nurses whereas the young ones could have joined the profession as a means of

survival due to lack of jobs on the market, therefore they may not put mind to their work.

1.3.1.2. Professional qualification

The qualification of the nurse could affect the case management in that the more knowledge one has the better the quality of service provided because he or she will nurse clients with adequate knowledge. Therefore, a Registered Nurse is expected to perform better in malaria case management than an Enrolled Nurse.

1.3.2. SERVICE RELATED FACTORS.

1.3.2.1. Shortage of staff

The shortage of staff has left most of the health centers and hospitals with inadequate skilled manpower. This makes the clients wait for long hours before being attended to and this could prevent them from accessing adequate malaria treatment, as they would rather go and purchase drugs from the streets than wait in the cue. These drugs may not even be effective and could lead to drug resistance.

1.3.2.2. Drug shortage

Due to the increased disease burden the malaria drugs being supplied by the government are either not enough or there is an

erratic supply of drugs. This may lead to nurses in the clinics and on the wards having lapses in the case management. Drug shortages may also discourage clients from seeking malaria treatment leading to complicated and severe malaria and finally death.

1.3.2.3. Attitude of the staff.

Some nurses have a poor attitude to patients such that they may scare patients from the health centers especially those that are in need of their services. Clients would rather go to health facilities where they are well received by the health care providers.

1.3.2.4. Inadequate Referral system

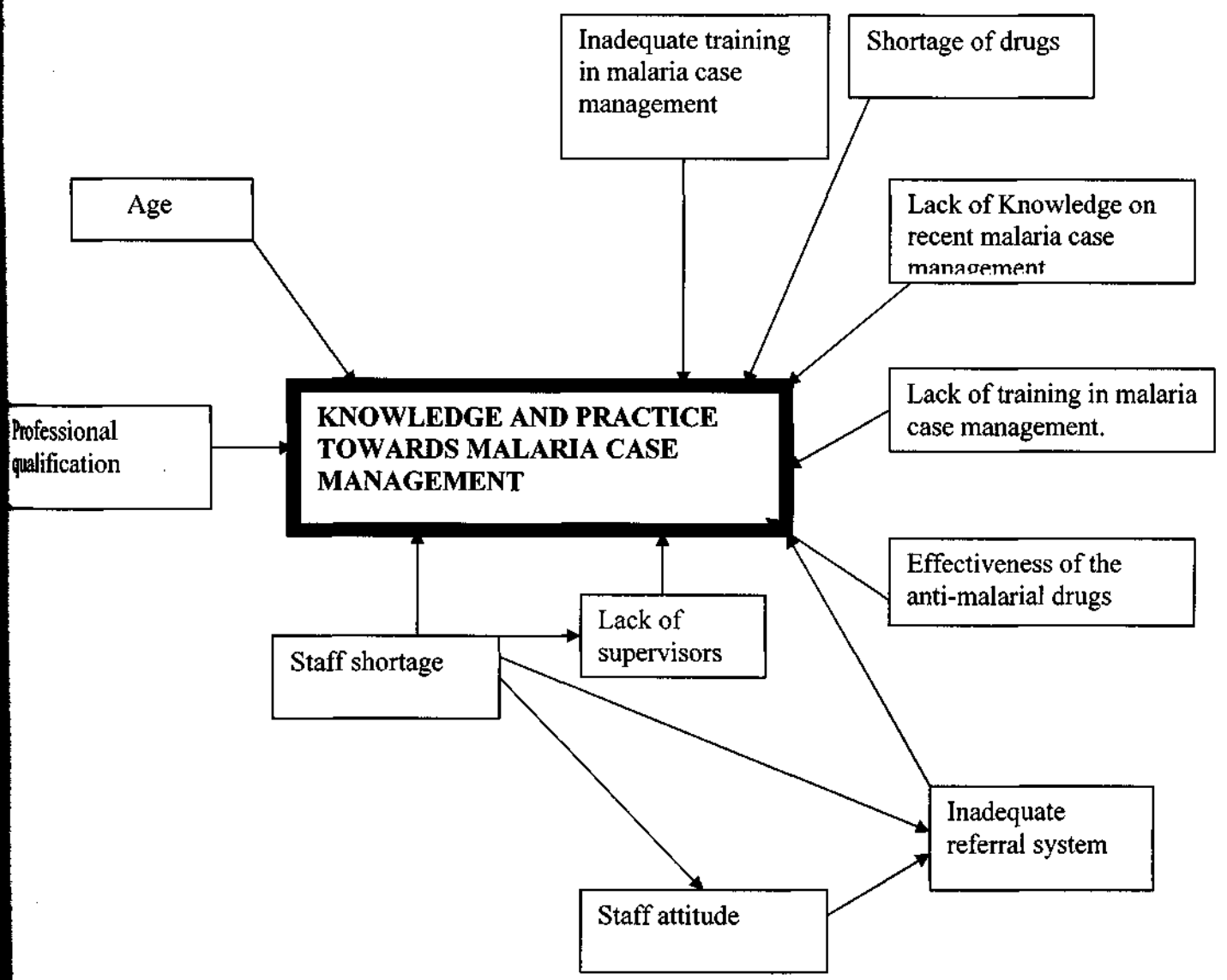
The referral system has also an impact on the case management of malaria in that people fail to come to the hospital early in case they have been referred for further treatment compounding their problem further. This could be due to inadequate transport or due to poor road networks especially in rural areas. On the other hand, if the health care provider is not well trained, she or he will not be able to detect cases that need referral in time.

1.3.3.5 Lack of in-service training in malaria case management

The government of the republic of Zambia changed the malaria drug policy in 2004. This requires health care providers to be given in service training in the administration of these drugs. But if the core people in the administration of these drugs don't go for in-service training then there will be lapses in the case management of the disease (malaria).

1.4. DIAGRAM OF PROBLEM ANALYSIS

Socio-demographic factors **Service related factors**



1.5. JUSTIFICATION

Malaria kills around a million people a year in Africa (Snow et al., 1999). Zambia being one of the countries in Africa is also equally affected with this killer disease. Though Zambia is affected it has done a lot on the prevention of this disease such as use of ITNs, Intermittent Presumptive treatment of Malaria in pregnancy etc.

It is against this background that the researcher undertook this study to determine the Nurses' knowledge and practice towards malaria case management in Lusaka Urban Health Centers. The results of this study will benefit the patients in that they will receive quality care at the health facilities in terms of malaria case management. It is also hoped that the findings of this research will also benefit other health care providers in the health care team to improve malaria case management. In addition, recommendations made to relevant authorities will help improve the strategic planning on malaria case management; thereby reduce on the morbidity and mortality rates due to malaria.

1.6. RESEARCH OBJECTIVES

The Research objectives summarize what is to be achieved by the researcher (Polit et al, 2001). These can be referred to as general objectives, which was the main aim or purpose of the study, and the specific objectives – which are a break down of a general objective or

main aim/ purpose of the study into logically smaller parts. They gave more details on what the researcher was going to research on.

1.6.1. General Objective.

The general objective of this study was: -

To determine the Nurses 'knowledge and practice towards malaria case management in Lusaka District Urban Clinics.

1.6.2. Specific Objectives.

The following were the specific objectives for this study: -

1. To identify the Nurses' gaps in malaria case management.
2. To assess the level of knowledge nurses have about the ever-changing case management of malaria.
3. To identify the nurses' practices towards malaria case management.
4. To make recommendations to relevant authorities for action and improvement on the findings of the study.

1.7. HYPOTHESES

A hypothesis is a prediction about relationships between variables' (Polit et al, 2001).

The following were the hypotheses for this study: -

1.7.1 Inadequate and erratic supply of antimalarial drugs contributed to the poor or bad practices in malaria case management.

1.7.2 Inadequate knowledge on the ever-changing case Management of malaria led to poor or bad practices in malaria case management.

8.0 OPERATIONAL DEFINITION OF TERMS.

For the purpose of this study, the following definitions were used.

1.8.1. Anti-malarial treatment policy

An Anti- malarial treatment policy is a set of recommendations and regulations concerning the availability and rational use of anti-malarial drugs in a country (WHO, 2000).

1.8.2. Attitude

This is a stance taken by the nurses over the case management of malaria.

1.8.3. Malaria case management

These are the methods and ways used in managing malaria.

1.8.4 Nurse

A nurse is a person who is qualified in the art and science of nursing and meets certain prescribed standards of education and clinical competence (Bailliere's, 1999).

1.8.5. Knowledge

Refers to the understanding, information needed and required by the nurses in relation to malaria case management.

1.8.6. Practice

Refers to what is being done in the case management of malaria.

1.8.7. **Malaria**

Malaria is a disease caused by an Anopheline mosquitoe protozoan parasite of the genus plasmodium (Perry and Potter, 2004).

1.9. VARIABLES AND CUT-OFF POINTS.

1.9.1 VARIABLES

A variable is an attribute of a person or object that varies, that takes on different values (Polit, et al, 2001).

There are usually two (2) types of variables in a study. These are the independent and dependent variables.

1.9.2. DEPENDANT VARIABLES

The dependant variable is a particular event or phenomena under investigation (Polit et al, 2001). These are affected by the causative factors. The Dependent variables in this study were: -

- Knowledge
- Practice

1.9.3. INDEPENDENT VARIABLES

The independent variable is the variable that stands on its own and is not dependent on any other (Polit et al, 2001). Independent variables cause changes on the dependant variables. The independent variables in this study were: -

- Age

- Professional qualification
- Staff shortage
- Inadequate supervision
- Staff attitude
- Drug shortage

TABLE 3 : INDICATORS AND CUT – OFF POINTS FOR VARIABLES

VARIABLE	CUT-OFF POINT	INDICATORS	QUESTION NUMBERS
1. DEPENDENT			
Knowledge	High	Responses to knowledge questions with a score of 14 – 25.	Questions 7- 20
	Medium	Responses to knowledge questions with a score of 10 – 13.	Questions 7 – 20
	Low	Responses to knowledge questions with a score of 0 – 9.	Questions 7 – 20
Practice	Good	Responses to practice questions with a score of 11 – 21.	Questions 21 – 31
	Bad	Responses to practice questions with a score of 0 – 10.	Questions 21 – 31
2. INDEPENDENT VARIABLES			
Age	Young	20 –29 years old	Question 2
	Middle	30 – 49 years old	"
	Old	50 and above.	"
Professional Qualifications	Enrolled Nurse		Question 5
	Registered Nurse		"
	Registered Midwife		"

CHAPTER TWO

2.0. LITERATURE REVIEW

2.1. INTRODUCTION

This chapter is an overview of literature on the different types of malaria case management conducted throughout the world. However, there are no studies conducted to determine Nurses' knowledge and practice towards malaria case management therefore related literature was reviewed. The main sources of the literature review were published and non-published information. These included the journals, books and the internet.

According to Polit et al (2001) literature review is a critical summary of research on a topic of interest, often prepared to put a research problem in context or as the basis for utilization of the project. They also state that literature review is an important aspect of research in that it helps to lay the foundation for a study; it helps to determine what is already known about the topic so that a comprehensive picture of the problem can be obtained.

Literature review also helps to obtain clues to the methodology and instruments, this helps to provide the researcher with information on what has and what has not been tried in regard to approaches and methods and types of data collecting instruments that exits and whether they work or do not work.

Literature review forms a basis for comparison when interpreting the findings from the current study. It supports the study especially in conjunction with the collection of data. In this chapter the literature review Was organized according to global, regional and national perspectives.

2.2. GLOBAL PERSPECTIVE

Malaria is the world's most lethal blood sucking infection. Malaria takes life from more people than any other infectious virus, apart from tuberculosis (TB). Malaria risk of varying degree exists in 99 countries or areas. However, falciparuim malaria does not exit or its relative prevalence is less than 1% in 13 of these countries (WHO, 1990).

WHO (1990) states that the global incidence of malaria is estimated to be nearly 120 million clinical cases each year, with nearly 300 million people carrying the parasite. The total number (90%) of cases reported annually to WHO are from 19 countries only. This does not include the WHO Africa Region where reporting of cases remains fragmentary (WHO, 1990). Approximately 75% of cases are concentrated in nine (9) countries: India, Brazil, Afghanistan, Sir lanka, Thailand, Indonesia, Viet Num, Cambodia and China.

In Cambodia, Causer, Bishop, Sharp, Flagg, Caldern, Keane, Shah, Macarthur, Maloney, Cetron and Bloland (2002), conducted a study

entitled Rapid malaria screening and targeted treatment of United States-bound Montagnard refugees. Pre- departure malaria screening and targeted treatment was conducted to prevent morbidity, and minimize the potential for local malaria transmission post –arrival.

A sample of 902 out of 906 refugees, using rapid diagnostic tests (RDTs), microscopy, and polymerase chain reaction (PCR) were analyzed. Twelve (1.3%) RDT results were positive and 28 (3.1%) were indeterminate. Microscopy confirmed plasmodium species in two of the positive RDT and one of the indeterminate results. Among a random 10% sample of negative RDT results (n=86), none were positive by microscopy. The PCR confirmed the two microscopically (and RDT) positive specimens tested. Out of the total number 18 (2.0%) refugees were treated with antimalarials.

Rowland and Nosten (2001) conducted a research in refugee camps on the Pakistan-Afghanistan and Thailand-Burma boarders. The research was on Malaria Epidemiology and Control in refugee camps and complex emergencies. This research has now led to new methods and strategies for malaria prevention and case management, and these are now being taken up by international health agencies. This experience has shown that integration of research within control programmes is an efficient and

dynamic mode of working that can lead to innovation and hopefully sustainable malaria control.

In Cambodia, Rimon, Kheng, Hoyer, Thach, Ly, Permin and Pieche conducted a research entitled Malaria Dipsticks beneficial for Integrated Management of Childhood Illness (IMCI) in Cambodia. The IMCI approach and new clinical treatment guidelines to control malaria among children less than 5 years old were introduced recently in Cambodia. This study was conducted to finalize the malaria part of the national IMCI fever chart.

A total number of 323 sick children 2-59 months old were studied at rural health centers in northern Cambodia from February to April 2000. Cases with fever (by axillary temperature or history) or anaemia (by palmer pallor) were tested with dipsticks for plasmodium falciparum and plasmodium vivax in high and low malaria risk areas and, if positive, treated with anti-malarials.

The results showed that the draft IMCI chart identified children with malaria safely and effectively (sensitivity 14 of 15, approximately 93% and specificity 292 of 308, approximately 95%). The study confirmed the potential of malaria dipsticks as a part of IMCI case management.

In another development in China, Jackson, Sleigh, and Lui (2002) conducted a research on the Cost of Malaria Control in China: Henan's consolidation programme from community and government perspectives. The research was done in order to assist with strategic planning for the eradication of malaria in Henan province, China, which reached the consolidation phase of malaria control in 1992, when only 318 malaria cases were reported. Jackson et al conducted a prospective two – year study of costs for Henan's malaria control programmes. They used a cost model that could be used in Mainland China, and analyzed the cost of the three components of Henan's malaria programme: suspected malaria case management, vector surveillance and population blood surveys.

The program primary cost data were collected from government, and data on suspected malaria patients were collected in two malaria communities (with a population of 2 093 100). Jackson et al (2002) enlisted the help of 260 village doctors in six townships or former communes (with a population of 247 762), and studied all 12 325 reported cases of suspected malaria in their catchment areas in 1994 and 1995.

The results of this study were that the average annual government investment in malaria control was estimated to be US$ 11 516 (case – management 59%; active blood surveys 25%; vector surveillance 12%; and contingencies and special projects 4%). The average cost (direct and

indirect) for patients seeking treatment for suspected malaria was US$ 3.48, equivalent to 10 days' income for rural residents. Each suspected malaria case cost the government an average of US$ 0.78.

In areas of drug-resistance malaria, control programs may restrict chemothepy until malaria has been confirmed via microscopy to contain costs and toxicity. In Brazil, patients travel to centralized laboratory posts at great cost for diagnosis and treatment. In view of the above, a program was established through the bars of a mining town offering free dipstick diagnosis and mefloquine treatment on a 24-hour basis; falciparum malaria dipstick tests were accurate and easy to use.

Outcomes were compared with historical data and results of a neighboring non-intervention village. Guidelines for dipstick use and treatment were followed for 98% of visits. The number of visits was reduced from 2,316 (expected) to 1,097 (observed) with 626 dipstick tests applied. Majority (95%) of those who visited the centralized laboratory posts experienced onset of malaria symptoms in the town where the facility was located. There was an expected doubling of malaria hospital admission rate (Cunha, Piovesan and Pang, 2001).

2.3. REGIONAL PERSPECTIVE

According to WHO (1998), malaria is the leading health problem in Africa south of the Sahara and almost the entire population is at risk with the bulk living in highly endemic and epidemic areas. WHO also states that there is the high death rate due to malaria especially among children before age of 5.The economic consequences of malaria and malaria-related diseases are high, estimated at more than US$2000 million at the end of 1997 (WHO, 1998).In view of the above costs there are several studies that have been carried out in different countries.

In Kenya, Zurovac, Ochola, Midia, English and Snow (2006), conducted a study on Microscopy and outpatient malaria case management among older children and adults. This was a cross-sectional survey in two districts of different intensity of malaria at government facilities. All patients older than five years presenting to the outpatients department were recruited as study participants.

Two expert microscopists assessed the accuracy of the routine malaria slide results. The two microscopists analyzed 359 consultations performed by 31 clinicians at 17 facilities. Clinical assessment was suboptimal. Blood slide microscopy was performed for 72.7% of patients, who represented 78.5% of febrile patients and 51.3% of afebrile patients. There were about 95.5% of patients with a positive result and 79.3% of the patients had a

negative result, but both groups received antimalarial treatment. Sulphadixine-pyremethaminemonotherapy was more commonly prescribed for patients with a negative test result (60.7%) than for patients with a positive result (32.4%). Conversely, amodiaquine or quinine was prescribed for only 14.7% of patients with a negative malaria microscopy result compared to 57.7% of patients with a positive result. The prevalence of confirmed malaria was low in both high (10.0%) and low (16.3%) transmission settings. Upon combination of data from both settings, the sensitivity of routine microscopy was 68.6%; its specificity, 61.5%; its positive predictive value, 21.6% and its negative predictive value, 92.7%.

It therefore concluded that the potential benefits of microscopy are currently not realized because of poor quality of routine testing and irrational clinical practices. Ambiguous clinical guidelines permitting treatment of older children and adults with a negative blood slide also undermine rational use of antimalarial drugs.

In another development in Uganda, Ndyomugyenyi, Magnussen and Clarke (2007) conducted a study in south-western Uganda. The study had two components namely passive case detection where all patients attending the out-patient clinic with a febrile illness were included in the study and a longitudinal active malaria case detection survey was

conducted in selected villages. The Study was entitled Diagnosis and treatment of malaria in peripheral health facilities in Uganda: findings from an area of low transmission in south-western Uganda.

The Result showed that only 24.8 % of 1627 patients had malaria according to case definition and > 75% of patients were unnecessarily treated for malaria and few slide negative cases received alternative treatment.

In Tanzania, Eriksen, Tomson, Mujinja, Warsame, Jahn and Gustafsson (2007) conducted a study to assess heath worker performance in malaria case management of under-fives at health facilities in a rural Tanzanian district. The method used was consultations of 117 sick under fives by 12 health workers at 8 health facilities in Mkurang District, Tanzania. These were observed using checklists for history taking, counseling and prescription. Diagnosis and treatment were recorded. Exit interviews were performed with all the mothers/guardians and blood samples taken from the under fives for the detection of malaria parasites and antimalarial drugs. Quality of care was measured using adopted indicators from the integrated management of childhood illness multi-country evaluation.

The results of this study showed that quality of care measured by indicator scores averaged 31% of what was considered optimal. The poorest

results were for history taking. Despite this the study community had changed behavior from self-treatment to seeking care at health facilities, which was encouraging for the introduction of artermisinin-based combination therapies policies.

Kazembe, Kleinschmidt and Sharp (2006), carried out a study in Malawi on patterns of malaria – related hospital admissions and mortality among Malawian children: an example of spatial modeling of hospital register data. Data was collected from paediatric ward register from Zomba district between 2002 and 2003. Two spatial models were developed. The first was a poisson model applied to analyze hospitalization and minimum mortality rates, with age and sex as covariates. The second was a logistic model applied to individual level data to analyze case-fatality rate, adjusting for individual covariates.

Results of the study reviewed that rates of malaria hospitalization and in – hospital mortality decreased with age, distance, wet season and increased if patient was referred to the hospital. Furthermore, death was high on first day, followed by relatively low rate as length of hospital stay increased.

Tediosi, Maire, Smith, Hutton, Utzinger, Ross and Tannner (2006), conducted a study on an approach to model the costs and effects of case management in plasmodium falciparum malaria in sub-Saharan Africa.

The study found that the incidences of illness and transmission dynamics were assumed to be independent of the case management system. A model for case management was developed and integrated it into a stochastic simulation of plasmodium falciparum malaria dynamics. The model predicts that high treatment rates have a proportionately greater epidemiological impact at low transmission levels. The study recommended that further development were needed for models for health- seeking behaviour and referral patterns.

2.4. NATIONAL PERSPECTIVE

According to the Annual Health Statistical Bulletin (2005), malaria continues to be the major cause of visitations to health facilities, the national incidence of the disease continues to decrease during the period 2003 to 2005. The incidence decreased from 425 per 1,000 population in 2003 to 383 per 1,000 population in 2004 and then to 375 per 1,000 population in 2005 and that Central, Copperbelt, Eastern, Southern and Western provinces recorded a decreasing trend of malaria during this same period.

Ndhlovu, Hammer, Zurovac, Fox, Yeboah-Antwi, Chanda, Sipilinyambe, Simon, and Snow (2007), carried out a study entitled "Improved diagnostic testing and malaria treatment practices in Zambia" between March and May 2007. This study was a cross-sectional, cluster sample survey of all

outpatients treated during one (1) working day at government and mission health facilities in four (4) sentinel districts in Zambia.

The results of this study showed that the malaria diagnostic equipment continues to be underutilized despite great efforts to expand the provision of malaria diagnostics in Zambia and that Patients with negative test results frequently received antimalarials.

Ndhlovu, Zurovac, Sipilinyambe, Chanda, Hamer, Simon and Snow (2007) conducted a repeat cross – sectional survey on paediatric malaria case – management with artemether – lumefantrine in Zambia, in 2004 and 2006. Data collected at all outpatient departments of government and mission facilities in four districts were analyzed, using a range of quality of care assessment methods. The findings of these studies showed that significant improvement in malaria case - management had occurred over the two years though the quality of treatment provided at the point of care is not yet optimal.

A similar study was conducted by Chanda, Hawela, Kango and Sipilinyambe (2007), the study title was 'Assessment of the therapeutic efficacy of a paediatric formulation of artemether – lumefantrine (Coartem) for the treatment of uncomplicated plasmodium falciparum in children in Zambia. The study was conducted in sentile sites using the WHO

standardized protocol for the assessment of therapeutic efficacy of antimalarial drugs (WHO, 2000) in children less than five years of age, weighing less than 10kgs. The design was a simple, one-arm, prospective evaluation of the clinical and parasitological response to directly observed treatment for uncomplicated malaria. The study was conducted at two (2) clinics, one (1) in Chongwe (Lusaka province) and Chipata (Eastern province). The number of children that were enrolled in this study was 91/111 and these were successfully followed up.

Artemether – lumefantrine (Coartem) was found to produce significant gametocyte reduction. The Adequate Clinical and Parasitologic Response (ACPR) was found to be 100% (95% CI 96.0; 100). Coartesiane was effective in treating uncomplicated malaria in Zambian children weighing less than 10kg, an age group normally excluded from taking the tablet formulation of artemether – lumefantrine (Coartem).

In another development, General Nursing Council of Zambia (GNC) conducted a Needs Assessment of Skills Laboratories, Knowledge and Skills malaria case management among Nurses, Midwives, Tutors and Students in training institutions in 2007. A field survey was carried out in ten (10) randomly selected schools. Data was collected from six Registered Nursing and four (4) Enrolled Nursing programmes. The study population included the Principal Tutors, Nurse Tutors and Clinical

teachers, Nurses and Midwives as well as finalist students. The main areas assessed were knowledge about malaria case management among students, nurses and midwives and teaching staff; skills in malaria case management and conducting an inventory of Skills Laboratories in stamp-led schools.

The findings revealed that knowledge about malaria case management was deficient among student nurses, nurses and midwives as well as teaching staff. The majority of respondents were not able to utilize the Rapid Diagnostic Test (RDT) as it was not available in health institutions. Other findings included failure to define Intermittent Presumptive Treatment (IPT) and state its regimen and on an encouraging note all schools sampled had Skills Laboratories except for one. However, most of them lacked equipment and supplies.

2.5. CONCLUSION

Literature review has shown that there are a lot of studies that have been conducted on malaria case management all over the world. Despite reviewing several literatures, there was only one survey that was conducted in order to assess the health workers' performance in malaria case management, which was done in Tanzania. The findings of this study revealed that quality of care measured by indicator scores averaged 31% of what was considered optimal. The poorest results were for history

taking. The results of the study also showed that despite these results, behavior had changed from self-treatment to seeking care at health facilities.

Literature review has also shown that the majority of the surveys that have been conducted through out the world have to do with epidemiology with a few on drug combination in malaria case management, effectiveness and resistance as well as the cost of treating and eradicating malaria. The findings of the study on the cost of treating malaria was U$ 3.48 for rural residents and each suspected malaria cost the government an average of U$ 0.78.

Local literature revealed that it takes some time for the recommendations to be implemented, for example the study that was done by Chanda et al, (2007) on the use of artemeter - lumefantrin in children weighing less than 10kgs. The study recommended that it was safe to use the drug but unfortunately the drug is still not being used.

Malaria will remain the world's most devasting disease despite the many studies that have been conducted on its preventive measures, efficacy of the drugs used, its resistance to certain antimalarial drugs and its case management if their health personnel are not fully involved in its management. It is therefore, for this reason that for its effective

management, the health workers need knowledge and skills, and periodical updates in malaria case management in order to prevent the devasting effects and untold suffering that malaria can cause on an individual, Nation, Continent and indeed the entire world if not well and adequately managed.

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 INTRODUCTION

According to Basavanthappa (1998), Research methodology is the study of the manner of collecting data. Research methodology refers to the development, testing and evaluation of research instruments and methods used in research investigation, whose goal is to ensure reliability and validity in the tool used for data collection.

3.2 RESEARCH DESIGN

Basavanthappa (1998) defines research design as the overall plan for addressing a research question, including specifications for enhancing the integrity of the study. It is a framework for answering the research question, which includes factors such as research settings, operational definitions, assumptions, relationships between variables, definitions, sampling procedure, instrument approach to be used and the method for analyzing data, ethical questions concerning subjects' rights and use of data.

A non-interventional descriptive study was used in this research project because the researcher was to describe the relationship between variables. This design enabled the researcher to systematically collect and present data in order to give a clear picture of nurses' knowledge and

practice towards malaria case management in Lusaka urban. The study was both qualitative and quantitative as it sought to explore the knowledge the nurses have as well as reflect the practices in malaria case management.

3.3 RESEARCH SETTING

This is the physical location and condition in which data collection takes place in a study (Basavathappa, (1998)). The study was conducted in Lusaka District Urban, in Lusaka Province, which is the capital city of Zambia. Most of these clinics where the study was conducted are located in high population density areas which are mosquito infested areas and have the history of high prevalence of malaria. Four different clinics were randomly chosen in order to ensure validity, reliability and non-bias of the results.

Lusaka is one of the 73 districts of Zambia. It is the Provincial Headquarters of Lusaka province as well as the capital city of the republic of Zambia. Located at about 1280 meters above sea level on the southern part of the central African plateau. Lusaka covers a total surface area of 360 square kilometers. The district shares boundaries with the following districts;

- Chongwe on the eastern part,
- Mumbwa to the west,

- Chibombo on the north
- Kafue on the southern part (Lusaka District Budget and Action Plan 2006 –2008).

Lusaka District has an estimated population of 1,743,131 (Action Plan 2006-2008). Lusaka is the most urbanized in the country as most of the people in other towns and rural areas flock to Lusaka seeking employment and business opportunities. Lusaka like the rest of the country enjoys an equatorial type of climate characterized by three distinct seasons namely, the hot and rainy season from November to April, the cold and windy season from May to July and the hot and dry season from August to October.

Average temperatures range from 5 degrees Celsius in the cold and dry season to about 28 degrees Celsius in the hot season. The humidity of Lusaka is about 62.8%, the highest being recorded during the months between December and February. The average rainfall is 220 millimeters (Lusaka District Budget and Action Plan 2006 –2008).

The road network of Lusaka district is fairly good. Lusaka being centrally located is linked to other parts of the country by a good tarred road network some of whom being the great north road on the north, the great

east road on the east, Kafue road on the south and Mumbwa road on the west. All the major roads in the city are tarred except a few gravel roads.

Most of the township roads, which were once tarred, have since been eroded and are in a deplorable state, so are those leading to some of the health centers. Since Lusaka lies on a lime stone rock base the drainage system is poor in some areas posing a health risk, more especially during the rainy season (Lusaka District Budget and Action Plan (2006 – 2008)). Lusaka is linked to the Copper belt on the north and the southern part of the country by the only railway line. The railway line is operated by the Railway Systems of Zambia.

The district has two airports - the city Airport located right in the middle of the district, and run by Zambia Air Force for non-commercial domestic flights and the international airport situated on the eastern side off the great east road about 22 kilometers away from the city center. The Airport caters for both domestic and international flights.

The telecommunication and the media industry are well developed. Lusaka is home of the headquarters of two (2) of the three (3) mobile phone service providers in Zambia. The district is serviced by land phone network provided by Zambia Telecommunications Company (Zamtel). The district also enjoys Internet facilities.

In addition to the above communication systems the district has a number of television and radio stations some of which are Zambia National Broadcasting Co-operation (ZNBC), Muvi TV, Mobi TV as well as newspaper publishers that are owned and controlled by the government and the private sectors. This has been due to the enabling environment and enhanced press freedom encouraged by the ruling government.

The Lusaka Water and Sewerage Company provide water and sanitation services in the district. Most of the households in the district especially in the urban areas use piped water. The safety of this water to human beings is the responsibility of the environmental and public health department of the D.H.M.T

There has been a slight increase in the population with access to piped water from the previous sixty percent (60%) in 2003 (Lusaka Budget and Action Plan 2006 –2008). This is as a result of the support of non-governmental organizations such as CARE International and JICA that have provided safe water points through community participation in townships like Chipata, Chaisa, Kanyama and Bauleni. JICA has started similar projects in Ngombe and Freedom compounds.

The LWSC are also responsible for and management of excreta and liquid waste disposal for Lusaka district. The Company uses a water-borne

network disposal system although only one third of the city enjoys this service. Other excreta systems available include on-site disposal mechanisms such as septic tanks, which are found in both planned and unplanned areas. Most unplanned areas mainly use pit-latrines, rather than the ventilated improved pit-latrines (VIPs), which are the most recommended type in the areas where the installation of sewered sanitation or septic tank service is not possible.

Most of the clinics, which fall under the Lusaka DHMT, provide primary health care services, which include preventive, promotive and curative programmes. The district is sub-divided into four operational areas known as sub-districts. This is in order to facilitate the administration and provision of the district health care package. There are currently 25 health centers in the district and refer to the University Teaching Hospital as there is no first level referral hospital.

3.4 STUDY POPULATION

Study population is the total number or units from which a sample is collected (Polit et al, 2001). The study population consisted of the Registered Nurses and Enrolled Nurses who were participating in the case management of malaria in Lusaka urban health centers.

3.5 SAMPLE SIZE

A sample size is a subset of a population selected to participate in a research study (Polit et al, 2001). The sample size was 50 respondents. The study sites were randomly selected using simple random sampling method.

Simple random sampling is a probability sampling method that allows a known probability that each elementary unit will be chosen (Basavanthappa, 1998). This is the type of sampling that is used in lotteries and raffles. After defining the study population, the researcher established the sample frame by listing all the clinics in Lusaka urban. Then the researcher randomly selected 4 clinics where the study was conducted from. These clinics were Chilenje, Kamwala, Kabwata and Civic center clinics. The researcher used convenient sampling method to select desired number of nurses from the 4 respective clinics.

3.6 DATA COLLECTION TOOL

Basavanthappa (1998) defines Data collection tool as the instrument used to gather information needed to address a research problem. It is simply the use of a data gathering tool. The procedure used should be systematic, well planned and well coordinated.

A self administered questionnaire was used to collect data (see appendix i). A questionnaire as defined by Polit et al (2001) is a method of gathering

self report information from respondents through administration of questions in a paper and pencil format. It is a written question and answer sheet which provides data about a subject's attitudes, beliefs, habits and socio-economic background (Basavanthappa, 1998).

According to Polit et al (2001), a questionnaire is a series of questions that are filled in by all the participants in a sample. It is the most common research instrument, which can be administered directly to the respondents or through the mail. A questionnaire can be used in conjunction with other instruments or techniques. In this study questionnaires were used because all the respondents were possibly literate.

The questionnaire had two types of questions namely; the open ended and closed ended questions. Open ended questions permit free responses that should be recorded in the respondent's own words. The respondent is not given any possible answers to choose from. These type of questions are usually used in obtaining facts with which the researcher is not familiar with and getting opinions, attitudes and suggestions of informatives. In this study, open ended questions were asked mainly in the sections of the knowledge and practice questions in the questionnaire (see appendix i). The closed ended questions offer a list of possible

answers from which the respondents must choose from. The questionnaire comprised three sections namely;

- Section One - Demographic data questions.
- Section Two – Knowledge questions
- Section Three – Practice questions

3.6.1. Advantages of a Questionnaire

A questionnaire is a relatively simple method of obtaining data and it assists a researcher to gather data in a rapid and efficient manner. The researcher is able to gather data from a widely scattered sample. The tool is inexpensive to distribute and respondents remain anonymous and subjects have time to contemplate their responses. Once this tool is used, measurement is enhanced because all research subjects respond to the same questions, leading to easy analysis and interpretation of data.

3.6.2. Disadvantages of a Questionnaire

The questionnaire on the other hand can be one instrument that is unable to probe a topic in depth without becoming lengthy. At times the respondents may omit or disregard any item they choose without giving an explanation. When closed ended questions are used some items may force the subjects to select responses that are not their actual choice (Forced choice items). The amount of data collected can be limited by the subjects' available time and interest span. Data is limited to information voluntarily supplied by the respondents and not all members of the

anticipated sample may comply with the request to participate. Some participants may not return the questionnaire leading to a low or wrong representation of the total population. It is difficult to follow up clients when anonymity is promised as the researcher does not know who returned the questionnaire. The researcher will need special effort to test for reliability and validity.

3.6.3. VALIDITY

Validity refers to the degree to which an instrument measures what it is intended to measure (Polit et al, 2001). Content and face validity will be established by having the content of the questionnaire reviewed by the supervisor of the study. An extensive review of relevant literature was conducted before compiling the questionnaire items. The questionnaire was pre-tested for clarity, adequacy and freedom bias on nurses involved in malaria case management in a pilot study. The tool was modified accordingly.

3.6.4. RELIABILITY

Basavanthappa (1998) defines reliability as the degree of consistency or accuracy with which an instrument measures the attribute it is designed to measure. The researcher ensured sampling procedures selected were followed systematically. A pilot study was conducted to uphold reliability in this study. Basavanthappa (1998), indicates that a good sample is one that has these characteristics i.e. representativeness, size and generalization. The study population should be able to represent all the

characteristics of a total population. The size of the population was determined by the limited time and financial resources the researcher had.

3.7 DATA COLLECTION TECHNIQUE

Data collection technique is a method or way used to gather or collect information needed to address a research problem (Basavathappa, 1998). A questionnaire was used in the study. Data was collected by administering questionnaires to the research participants who were expected to complete the questionnaire within two to three days. The researcher then went round the clinics to collect the completed questionnaires. The researcher was available to collect the completed questionnaire from those participants who answered the questionnaires there and then. Collection of data was done in September 2007 for a period of three weeks beginning from the 3rd.

3.8 PILOT STUDY

Polit et al (2001), state that a pilot study is a small-scale version, or trail run, done in preparation for a major study. They also explain that the purpose of the study is to test the feasibility, reliability, and validity, estimate how much time it would take to complete a questionnaire of the proposed study and to detect possible flaws in the data collecting instruments.

A pilot study was conducted at UTH from 27th to 29th August 2007, to pretest and assess the validity of the data collection tool. A convenience sampling method was used in this pilot study in order to select the required number of subjects. Since the total number of research participants was 50 in the research, the pilot study consisted of 10% of the total number of research participants, which were 5 participants. The purpose of the pilot study was to assess the feasibility of the sampling method as well as the format of the questionnaire. The pilot study findings were used to refine the data collecting instrument

3.9 ETHICAL AND CULTURAL CONSIDERATIONS

Ethical consideration is a system of moral values that is considered with the degree to which research procedures adhere to professional, legal, and social obligations to the study participants (Polit et al, 2001).

Before undertaking the research study, the researcher obtained written consent from The Director - Provincial Health Office, Lusaka Urban. (Appendix vi). Informed consent was also obtained from research participants. Research participants were assured of anonymity and confidentiality by informing them that no name was to appear on any of the questionnaires. The purpose and nature of the study was explained to them. The participants were also informed that they were free to withdraw their participation from the study if they wished to do so and this was not

be held against them. This was important because it facilitated co-operation from the respondents.

CHAPTER FOUR

4.0 DATA ANALYSIS AND PRESENTATION

4.1 INTRODUCTION

Polit et al, (2001) defines data analysis as the systematic organization and synthesis of research data, and the testing of research hypotheses using those data. The raw data was collected from respondents using a self-administered questionnaire in September, 2007. Fifty (50) respondents participated in the study. The data was then sorted out. The questionnaires were edited for completeness, uniformity, accuracy and consistency and then data was coded. The responses were entered on the data master sheet. The analysis of data was done manually.

4.2 PRESENTATION OF FINDINGS

The findings of the study are presented in frequency tables. Pie charts and bar charts. The use of frequency tables in the presentation of the findings makes the work presentable and easily understood by the readers of the research study. The frequency tables summarize the results of the study in a way that will enable readers to understand the findings of the research study. Cross tabulation of the variables show clearly the relationship between variables and this enables the researcher to draw meaningful inferences.

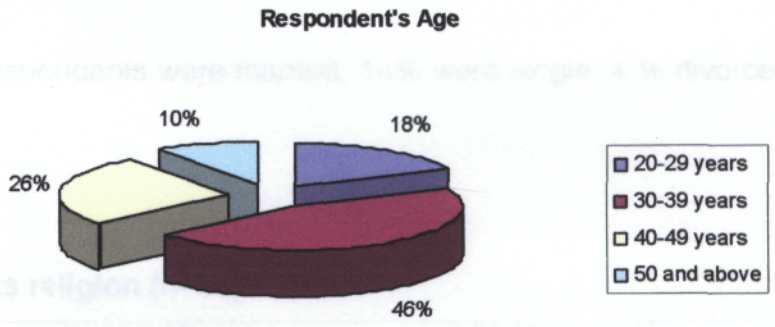
DEMOGRAPHIC DATA

TABLE 1: RESPONDENTS' SEX (n=50).

SEX	FREQUENCY	PERCENTAGE
Female	50	100
Male	0	0
TOTALS	50	100

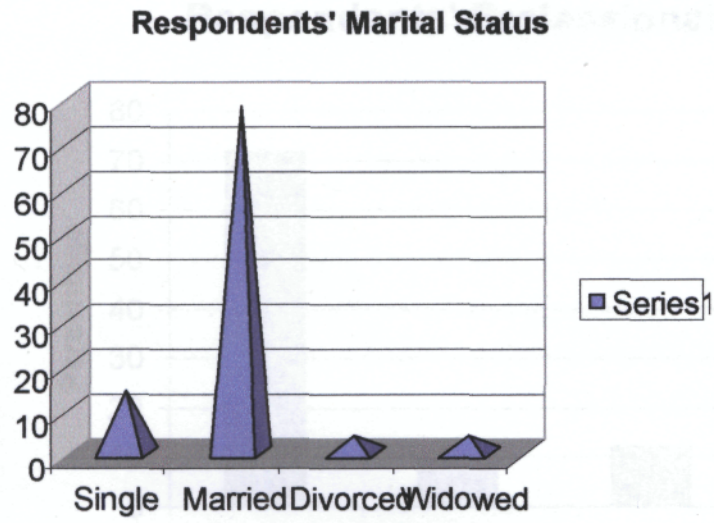
All (100%) respondents were females.

Figure 1: Respondents Age (n=50).



Most (46%) of the respondents were between 30-39 years, 26% were between the ages of 40-49 years, 18% were between 20-29 years and 10% were 50 years and above.

Figure 2: Shows the respondents' marital status (n=50).



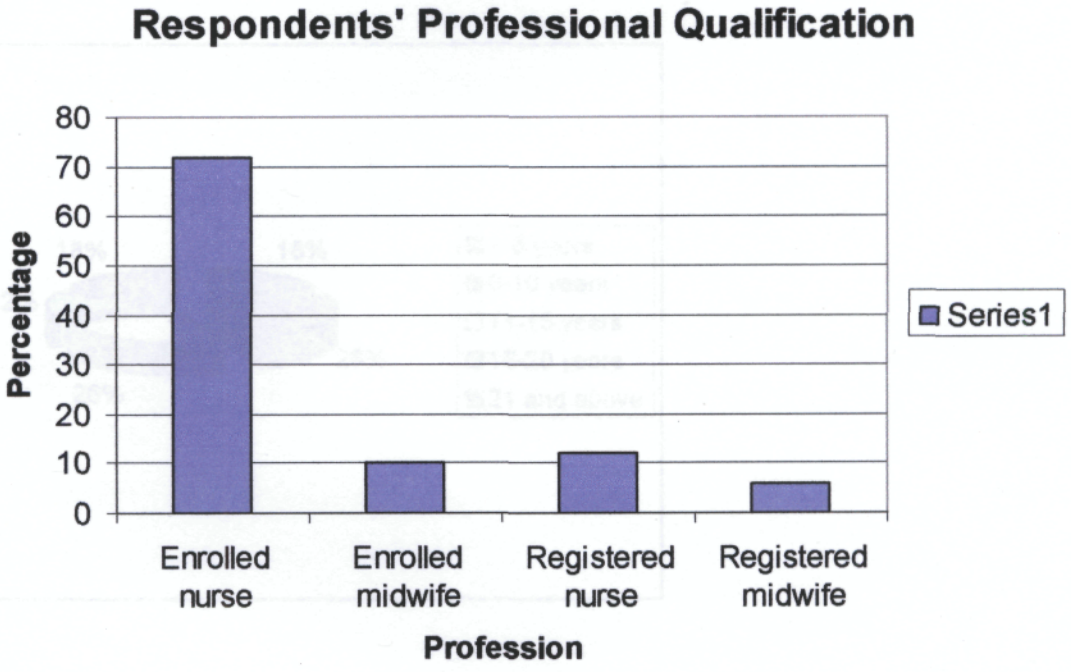
Majority (78%) of the respondents were married, 14% were single, 4 % divorced and 4% widowed.

TABLE 2: Respondents religion (n=50).

RELIGION	FREQUENCY	PERCENTAGE
Muslim	0	0
Christian	50	100
Hindu	0	0
TOTALS	**50**	**100**

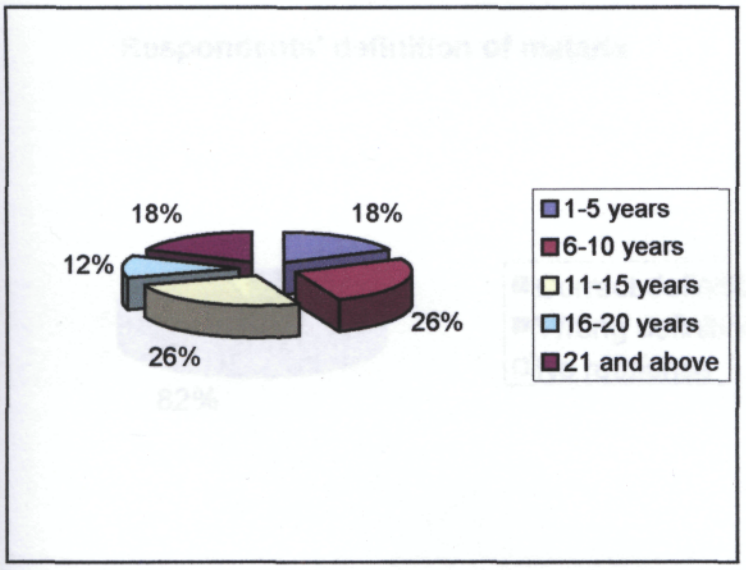
All (100%) of the respondents were Christians.

Figure 3: Shows respondent's professional qualifications (n=50).



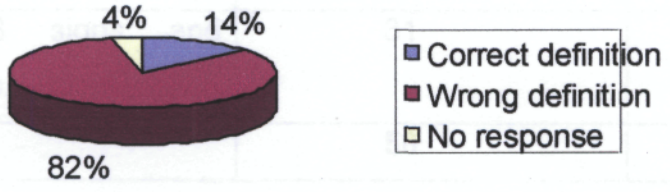
More than half (72%) of the respondents were Enrolled nurses, 12% were registered nurses, 10% were Enrolled midwives and 6% were registered midwives.

Figure 4. Respondents' years of service (n=50).



Twenty-six percent (26%) of the respondents had been in service for a period of 1-5 years, 26% had worked for 6-10 years, 18% had worked for 1-5 years, 18% had worked for 21 years and above and 12% had worked for 16-20 years.

Figure 5: Respondents' definition of malaria (n=50).



A large proportion (82%) of the respondents defined malaria wrongly, 14% defined malaria correctly and 4% gave no response.

Table 3: Respondents' knowledge on how malaria is transmitted (n=50).

ROUTE OF TRANSMISSION	FREQUENCY	PERCENTAGE
Through a bit of an infected female anopheles mosquitoe	25	50
Through a mosquitoe	25	50
TOTALS	**50**	**100**

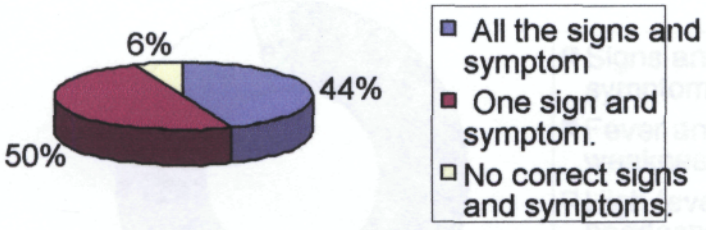
Half (50%) of the respondents knew the route of malaria transmission and the other 50% were not sure.

TABLE 4: Respondents' response on the signs and symptoms of uncomplicated malaria (n=50).

SIGNS AND SYMPTOMS OF UNCOMPLICATED MALARIA.	FREQUENCY	PERCENTAGE
Five signs and symptoms.	19	38
1 – 3 signs and symptoms.	31	62
TOTALS	**50**	**100**

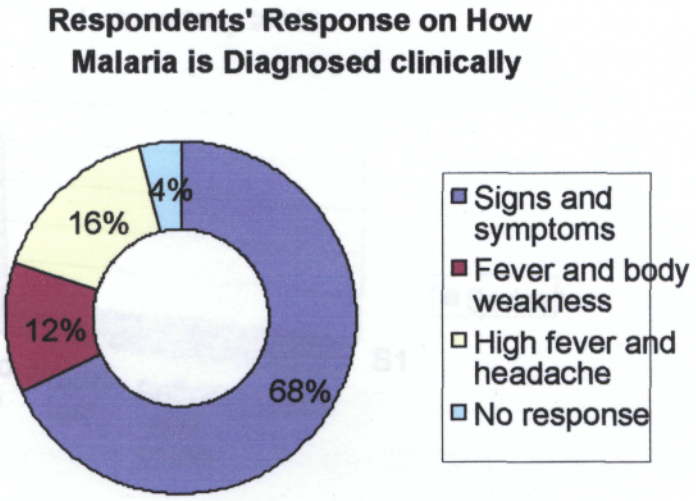
More than half (62 %) of the respondents gave 1-3 signs and symptoms of uncomplicated malaria and 38% gave all the five signs and symptoms of uncomplicated malaria.

Figure 6: Respondents' knowledge on signs and symptoms of complicated malaria (n=50).



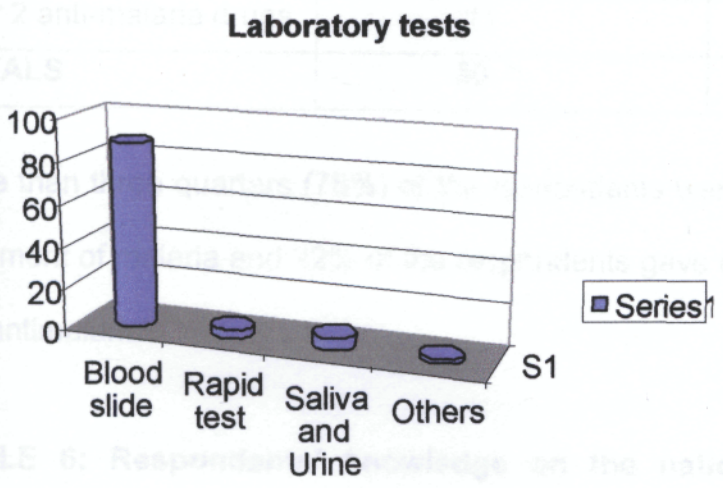
Half (50%) of the respondents gave only one correct sign and symptom of complicated malaria, 44% of the respondents gave two correct signs and symptoms of complicated malaria and 6% did not know the signs and symptoms of complicated malaria.

Figure 7: Respondents' knowledge on how malaria is diagnosed clinically (n=50).



Two thirds (68%) of the respondents were able to correctly diagnose malaria clinically, 16% said that malaria was diagnosed by high fever and headache, 12% said that malaria was diagnosed by fever and body weakness and 4% gave no response to the question.

Figure 8: Respondents' Knowledge on the laboratory tests conducted to diagnose malaria (n=50).



A large proportion (86%) of the respondents mentioned blood slide as a laboratory test for diagnosing malaria, 6% of the respondents said that malaria can be diagnosed by testing the saliva and urine, 4% of the respondents mentioned rapid test as one of the laboratory tests for diagnosing malaria and 2% of the respondents mentioned other laboratory tests for diagnosing malaria.

TABLE 5: Respondents' knowledge on malaria treatment (n= 50).

TREATMENT OF MALARIA.	FREQUENCY	PERCENTAGE
Three anti-malaria drugs.	39	78
1 or 2 anti-malaria drugs.	11	22
TOTALS	**50**	**100**

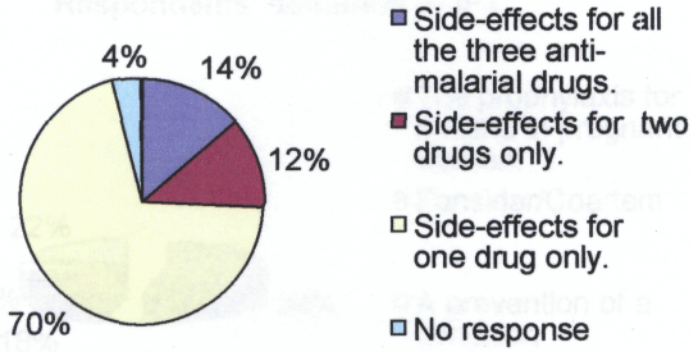
More than three quarters (78%) of the respondents were able to give the correct treatment of malaria and 22% of the respondents gave either one or two drugs of the antimalarials.

TABLE 6: Respondents' knowledge on the national malaria treatment policy (n=50).

TREATMENT POLICY	FREQUENCY	PERCENTAGE
1ST line Coartem 1st line Fansidar 2nd line Quinine	5	10
1st line Coartem 2nd line Fansidar 3rd line Quinine	35	70
I don't know	4	8
No response	6	12
TOTALS	**50**	**100**

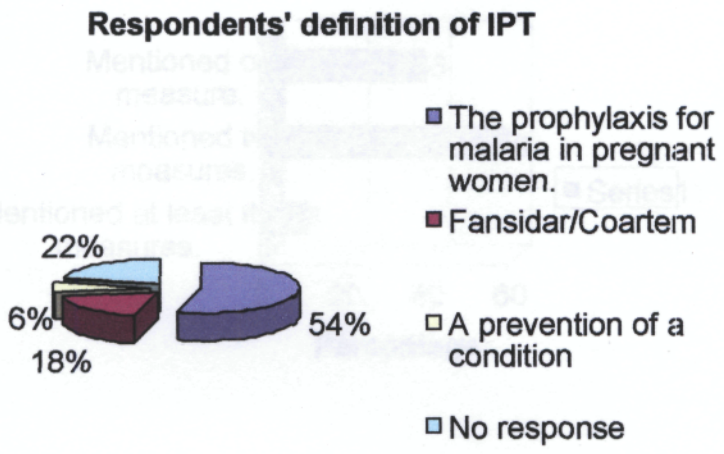
Most (70%) of the respondents gave a wrong national malaria treatment policy, 10% of the respondents gave the correct national treatment policy, 12% of the respondents gave no response and 4% of the respondents didn't know the national malaria treatment policy.

Figure 9: Respondents' knowledge on the side effects of the anti-malarial drugs (n=50).



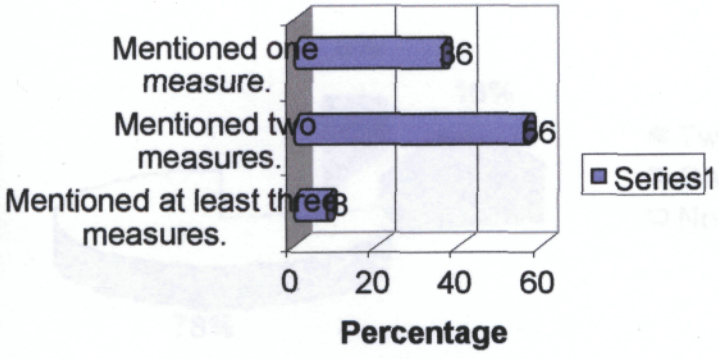
Majority (70%) of the respondents mentioned side-effects for only one anti-malarial drug, 14% of the respondents mentioned the side-effects for all the three drugs, 12% of the respondents mentioned the side-effects for two anti-malarial drugs and 4% of the respondents did not give any response to the question.

Figure 10: Respondents' knowledge on the definition of intermittent presumptive treatment (IPT) (n=50).



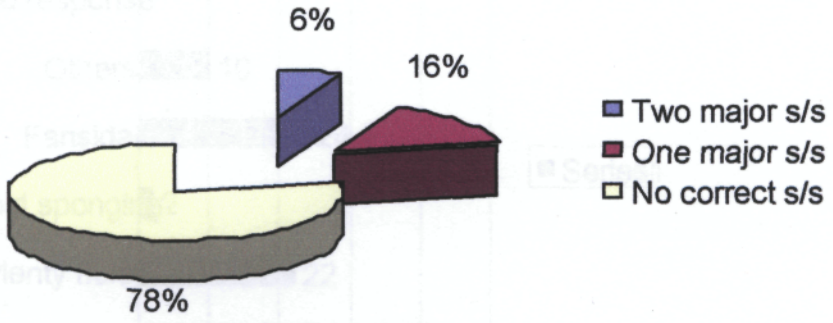
Majority (74) % of the respondents were able to define IPT correctly, 18% of the respondents defined IPT as administration of either Fansidar or Coartem, 6% of the respondents defined IPT as a prevention of a condition and 22% of the respondents gave no response to the question.

Figure 11: Respondents' knowledge on the prevention of malaria in pregnancy (n=50).



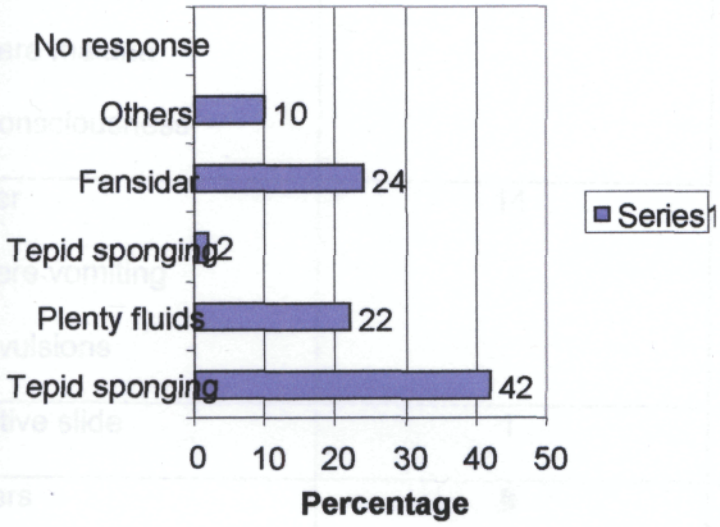
More than half (52%) of the respondents mentioned two correct measures of prevention of malaria in pregnancy, 36% of the respondents mentioned only one measure and 4% of the respondents mentioned at least three correct measures of prevention of malaria in pregnancy.

Figure 12: Respondents' knowledge on the presentation of a child with severe malaria (n=50).



Most (78%) of the respondents didn't give any correct sign and symptom of severe malaria in children, 16% of the respondents gave one of the major signs and symptoms of severe malaria in children and 6% of the respondents gave at least two major signs and symptoms of severe malaria in children.

Figure 13: Respondents' knowledge on home management of a child with malaria (n=50).



Forty-two percent (42%) of the respondents described the home management of a child with malaria as doing tepid sponging and giving a lot of fluids, 24% of the respondents mentioned other methods of malaria home management apart from tepid sponging and giving a lot of fluids. Twenty-two percent (22%) of the respondents mentioned tepid sponging as the only way malaria can be managed at home and 2% of the respondents said that malaria is managed by giving Fansidar and10% of the respondents gave no response to this question.

TABLE 7: Respondents' knowledge on the criteria for referral (n=50).

CRITERIA FOR REFERAL	FREQUENCY	PERCENTAGE
Persistent malaria Severe malaria Unconsciousness	23	46
Fever Severe vomiting Convulsions	14	28
Positive slide	1	2
Others	8	16
No response	4	8
TOTALS	**50**	**100**

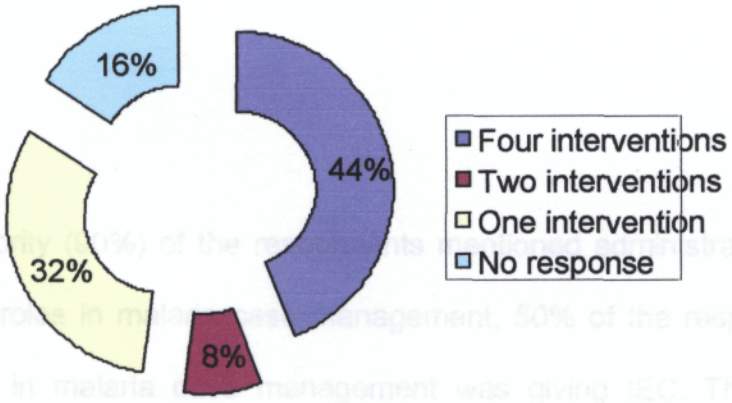
Fourty-six percent (46%) of the respondents mentioned severe, persistent malaria and unconsciousness as a basis for referral, 28% of the respondents mentioned fever, severe vomiting and convulsions as a basis for referral. Sixteen percent (16%) of the respondents mentioned other reasons for referral, 8% of the respondents gave no response to the question and 2% of the respondents said a positive slide was the only basis for referral of a malaria case.

TABLE 8: Respondents' management of a client with malaria (n=50).

EVER MANAGED A CLIENT WITH MALARIA BEFORE?	FREQUENCY	PERCENTAGE
Yes	50	100
No	0	0
TOTALS	**50**	**100**

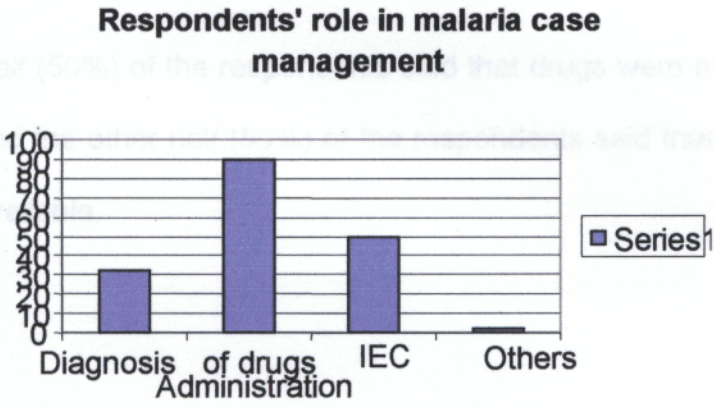
All (100%) of the respondents had managed a client with malaria before.

Figure 14: Respondents' methods of managing a client with malaria (n=50).



Fourty-four percent (44%) of the respondents started that they employed four interventions in the management of a client with malaria, 32% of the respondents started that they employed one method in managing clients with malaria. Sixteen (16%) of the respondents didn't give any response and 8% of the respondents started that they employed two interventions in their clients' management.

Figure 15: Respondents' role in malaria case management (n=50).



Majority (90%) of the respondents mentioned administration of drugs as one of the roles in malaria case management, 50% of the respondents said that their role in malaria case management was giving IEC. Thirty-two (32 %) of the respondents said that diagnosis was their only role in malaria case management and 2% of the respondents mentioned other roles apart from the ones mentioned above in their malaria case management.

TABLE 9: Respondents' response on whether anti-malaria drugs are always available at the clinic (n=50).

AVAILABILITY OF DRUGS	FREQUENCY	PERCENTAGE
Yes	25	50
No	25	50
TOTALS	**50**	**100**

Half (50%) of the respondents said that drugs were always available at the clinic and the other half (50%) of the respondents said that the drugs were not always available.

TABLE 10: Respondents' response on whether the anti-malarial drugs are commenced immediately the client comes to the clinic (n=50).

COMMENCEMENT OF ANTI-MALARIAL DRUGS.	FREQUENCY	PERCENTAGE
Yes	30	60
No	20	40
TOTALS	**50**	**100**

More than half (60%) of the respondents said that anti-malarial drugs were commenced immediately the clients came to the clinic, 20% of the respondents said that anti-malarial drugs were not commenced immediately.

TABLE 11: Respondents' response on why drugs are not commenced immediately the client comes to the clinic (n=20)

REASON	FREQUENCY	PERCENTAGE
Wait for a blood slide	16	80
Drugs out of stock	4	20
TOTALS	**20**	**100**

A large proportion (80%) of the respondents stated that they waited for the results of the blood slide before commencing the anti-malarial drugs and 20% of the respondents started that they didn't commence the anti-malarial drugs because the drugs were out of stock.

TABLE 12: Respondents response on whether they have been trained in malaria case management (n=50).

TRAINED	FREQUENCY	PERCENTAGE
Yes	13	26
No	37	74
TOTALS	**50**	**100**

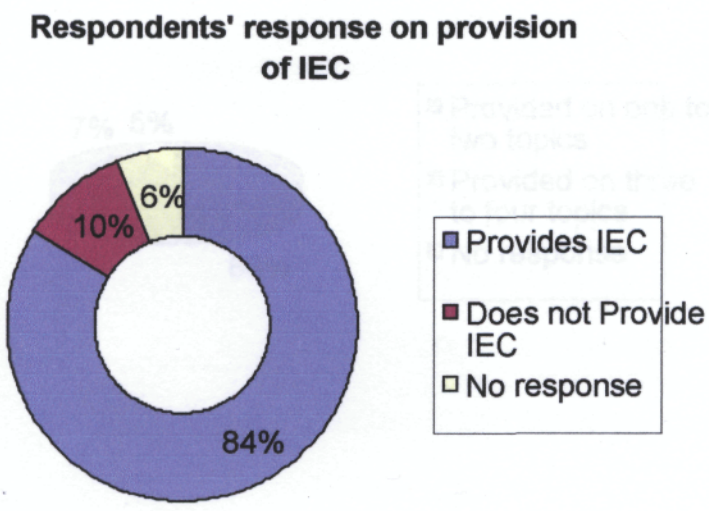
Most (74%) of the respondents indicated that they had not undergone any training in malaria case management and 26% of the respondents indicated that they were trained in malaria case management.

TABLE 13: Respondents' response on whether the training received was adequate or not to perform their duties (n=13)

ADEQUACY OF THE TRAINING	FREQUENCY	PERCENTAGE
Adequate	12	92
Not adequate	1	8
TOTALS	**13**	**100**

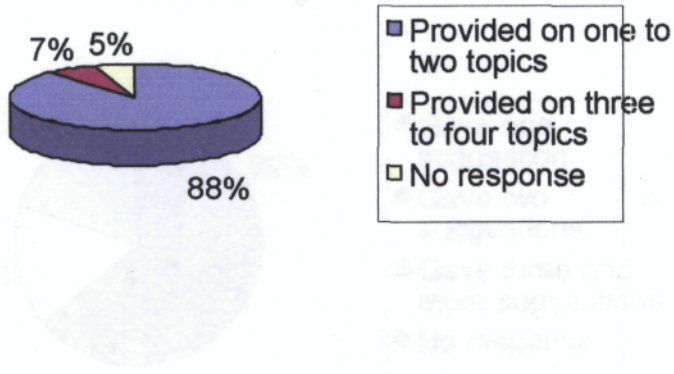
Most (92%) of the respondents who received training in malaria case management felt that the training they received was adequate enough to perform their duties and 8% of the respondents felt that the training was not adequate.

Figure 16: Respondents' response on the provision of IEC on malaria prevention at the centre (n=50).



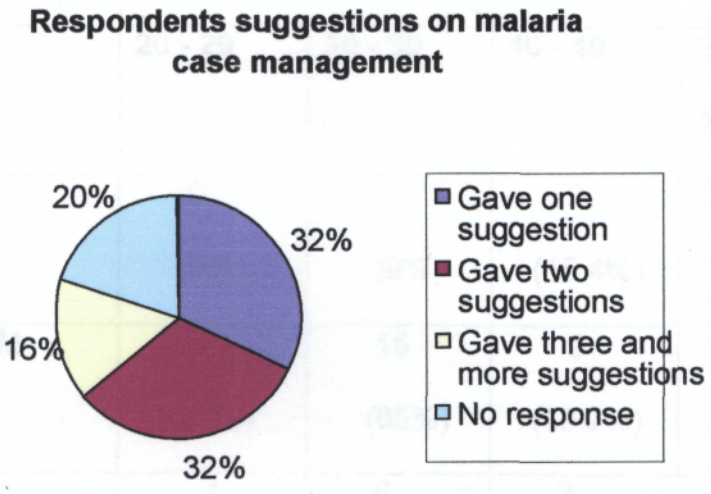
Most (84%) of the respondents provided IEC at their centre, 10% of the respondents indicated that they didn't provide IEC and 6% of the respondents gave no response to the question.

Figure 17: Respondents' response on the types of IEC provided (n=42)



A large proportion (88%) of the respondents started that they provided IEC on one to two different topics, 7% of the respondents started that they gave IEC on three to four topics on the prevention of malaria and 5% of the respondents never responded to this question.

Figure 18: Respondents' response on the suggestions of how to improve malaria case management (n=50).



Thirty-two percent (32%) of the respondents gave only one suggestion on the improvement of malaria case management, another 32% of the respondents suggestered two ways of improving malaria case management, 16% of the respondents gave three and more methods of improving malaria case management and 20% of the respondents gave no response to this question.

CROSS TABULATION TABLES

Cross tabulation show relationships between variables.

Table 14: Respondents' Knowledge in relation to Age.

LEVEL OF KNOWLEDGE	AGE IN YEARS				
	20 - 29	**30 - 39**	**40 - 49**	**50 and ABOVE**	**TOTALS**
HIGH	0 (0%)	2 (9%)	2 (15.4%)	0 (0%)	4
MEDIUM	5 (56%)	15 (65%)	9 (69.2%)	1 (20%)	30
LOW	4 (44%)	6 (26%)	2 (15.4%)	4 (80%)	16
TOTALS	**9**	**23**	**13**	**5**	**50 (100%)**

More than half (56%) of the respondents aged between 20 and 29 years old had medium levels of knowledge on malaria case management and 44% of the respondents had low levels of knowledge. Two thirds (65%) of the respondents aged between 30 and 39 years had medium levels of knowledge, 26% had low levels of knowledge and 15% had high levels of knowledge. Majority (69.2%) of the respondents who were aged between 40 and 49 years had medium levels of knowledge, 15.4% had low levels of knowledge and 15.4% had high levels of

knowledge. Those who were aged 50 years and above, 80% had low levels of knowledge and 20% had medium levels of knowledge.

Table 15: Respondents' Knowledge in relation to Professional Qualifications.

LEVEL OF KNOWLEDGE	RESPONDENTS' PROFESSIONAL QUALIFICATION.				TOTALS
	ENROLLED NURSE	ENROLLED MIDWIFE	REGISTERED NURSE	REGISTERED MIDWIFE	
LOW	13 (36%)	2 (40%)	0 (0%)	1 (33.3%)	16
MEDIUM	21 (58%)	3 (60%)	5 (83%)	1 (33.3%)	30
HIGH	2 (6%)	0 (0%)	1 (17%)	1 (33.3%)	4
TOTALS	36	5	6	3	50 (100%)

More than half (58%) of the Enrolled nurses had medium levels of knowledge, 36% had low levels of knowledge and 6% had high levels of knowledge. More than half (60%) of the Enrolled Midwives had medium levels of knowledge and 40% had low levels of knowledge. Majority (83%) of the Registered Nurses had medium levels of knowledge and 17% had high levels of knowledge. Thirty-three

point three percent (33.3%) of the Registered Midwives had low levels of knowledge, 33.3% had medium levels of knowledge and 33.3% had high levels of knowledge.

Table 16: Respondents' Knowledge in relation to Years of Service.

LEVEL OF KNOWLEDGE	RESPONDENTS' YEARS OF SERVICE.					TOTALS
	1 – 5 years	6 – 10 years	11 – 15 years	16 – 21 years	21 years and above	
LOW	5 (56%)	4 (30%)	2 (15%)	1 (17%)	4 (44%)	16
MEDIUM	4 (44%)	8 (62%)	10 (77%)	4 (66%)	4 (45%)	30
HIGH	0 (0%)	1 (8%)	1 (8%)	1 (17%)	1 (11%)	4
TOTALS	9	13	13	6	9	50 (100%)

More than half (56%) of the respondents who had worked for 1 – 5 years had low levels of knowledge and 44% had medium levels of knowledge. More than half (62%) of those who had been in service for 6 – 10 years had medium levels of knowledge, 30% had low levels of knowledge and 8% had high levels of

knowledge. More than half (66%) of the respondents who had been in service for 16 – 20 years had medium levels of knowledge, 17% had low levels of knowledge and 17% had high levels of knowledge. Fourty-five percent (45%) of the respondents who had worked for 21 years and above had medium levels of knowledge, 44% had low levels of knowledge and 11% had high levels of knowledge.

Table 17: Respondents practice in relation to Age.

RESPONDENTS' PRACTICE	**RESPONDENTS' AGE**				**TOTALS**
	20 – 29	**30 - 39**	**40 -49**	**50 and ABOVE**	
GOOD	0 (0%)	5 (22%)	4 (31%)	2 (40%)	**11**
BAD	9 (100%)	18 (78%)	9 (69%)	3 (60%)	**39**
TOTALS	**9**	**23**	**13**	**5**	**50 (100%)**

All (100%) of the respondents aged between 20 – 29 years had bad practice. A large proportion (78%) of the respondents between 30 - 39 years of age had bad practice and 22% had good practice. More than two thirds (69%) of the

respondents aged between 40 and 49 years had bad practice and 31% had good practice.

Table 18: Respondents' Practice in relation to Professional Qualifications.

RESPONDENTS' PRACTICE.	RESPONDENTS' PROFESSIONAL QUALIFICATION.				TOTALS
	ENROLLED NURSE	ENROLLED MIDWIFE	REGISTERED NURSE	REGISTERED MIDWIFE	
GOOD	7 (19%)	1 (20%)	1 (17%)	2 (67%)	11
BAD	29 (81%)	4 (80%)	5 (83%)	1 (33%)	39
TOTALS	36	5	6	3	50 (100%)

A large proportion (81%) of the Enrolled nurses had bad practice and 19% had good practice. Eighty percent (80%) of the Enrolled midwives had bad practice and 20% had good practice. Eighty-three (83%) of Registered Nurses had bad practice and 17% had good practice. Two thirds (67%) of the registered Midwives had good practice and 33% had bad practice.

Table 19: Respondents' Practice in relation to Years of Service.

RESPONDENTS' PRACTICE	RESPONDENTS' YEARS OF SERVICE					TOTALS
	1 - 5	6 -10	11- 15	16-20	21 & ABOVE	
GOOD	0 (0%)	2 (15%)	3 (23%)	2 (33%)	4 (44%)	**11**
BAD	9 (100%)	11 (85%)	10 (77%)	4 (67%)	5 (56%)	**39**
TOTALS	**9**	**13**	**13**	**6**	**9**	**50 (100%)**

All (100%) of the respondents who had served for 1 – 5 years had bad practice. A large proportion (85%) of the respondents who had been in service for 6 – 10 years had bad practice and 15% had good practice. Seventy-seven percent (77%) of the respondents who had worked for 11 – 15 years had bad practice and 23% had good practice. Two thirds (67%) of those who had served for 16 – 20 years had bad practice and 33% had good practice. More than half (56%) of the respondents had worked for 21 years and above had bad practice and 44% had good practice.

Table 20: Respondents' Knowledge in relation to Practice.

Knowledge	**Practice**		**Total**
	Good	Bad	
High	2 (4%)	2 (4%)	**4**
Medium	8 (16%)	22 (44%)	**30**
Low	1 (2%)	15 (30%)	**16**
Total	**11** **(22%)**	**39** **(78%)**	**50** **(100%)**

Four (4%) of the respondents who had high levels of knowledge had good practice and 4% with high levels of knowledge had bad practice. Sixteen percent (16%) of the respondents who had medium levels of knowledge had good practice and 44% of the respondents with medium levels of knowledge had bad practice. Two percent (2%) of the respondents who had low levels of knowledge had good practice and 30% of the respondents with low levels of knowledge had bad practice.

CHAPTER FIVE

5.0 DISCUSSION OF FINDINGS

5.1. INTRODUCTION

This chapter gives an overview of the research findings. The purpose of the research study was to determine Nurses' Knowledge and Practice towards malaria case management in Lusaka Urban Clinics. The sample consisted of 50 respondents and these were sampled conveniently. The study has revealed significant findings on malaria case management as discussed below.

5.2. DISCUSSION OF EACH VARIABLE

5.2.1. DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS.

The study was carried out on fifty (50) Nurses in Lusaka Urban Clinics. Table 1 on page 55 shows that all respondents (100%) were females which imply that nursing is a female dominated profession. It also indicates that Nursing is a caring profession since women are generally considered to be caring and kind hearted. The findings of the study showed that 46% of the respondents were within the age group 30 and 39 years. This indicates that most of the nurses are still young and they get into nursing schools when they are still in their twenties. Twenty – six percent (26%) were between 40 and 49 years. Eighteen percent (18%) were between 20 and 29 years. Ten percent (10%) were fifty (50) years and above. This shows that most of the respondents were young with a lot of energy and could work very well as bed side nurses. It also indicates that the nurses had recently graduated from the schools of nursing. Therefore, it is

important for the schools of nursing to provide as much information as possible on malaria case management because they are producing a large group of graduands that work as front line health workers and bed side nurses.

Figure 2 on page 56 shows that 78% of the respondents were married. Fourteen percent (14%) were single, 4% were divorced and 4% were widowed. This shows that most of the educated women are married despite being in employment. This could also be attributed to the fact that marriage is universal in Zambia. The divorced respondents were fewer probably because divorce is not accepted socially in Zambia. Table 2 on page 56 shows that all (100%) of the respondents were Christians indicating that Zambia is a Christian nation. It could also mean that there are no differences at the working place based on religious differences.

The findings in figure 3 on page 57 shows that 72% of the respondents were Enrolled Nurses, 12% were Registered nurses. Ten percent (10%) were Enrolled midwives and 6% were registered midwives. This means that there were more Enrolled nurses than any other group of nurses. This is due to the fact that most of the Registered nurses are managers who could be caring out administrative duties. It could also be attributed to the fact that many registered nurses have left the government institutions for "greener pastures" either outside the country or are in the non-governmental organizations within Zambia. Having more enrolled nurses could also be attributed to a large proportion of nurses who left the career under the Voluntary Separation exercise which the government implemented in

the late 1990s. It could also mean that the schools of registered nursing are not as many as the schools of enrolled nursing ending up with few registered nurses. Therefore, Enrolled nurses are the majority of all the frontline health workers found in most of the health institutions; as such they should be equipped with adequate knowledge especially on malaria case management. They should also go for refresher courses on malaria case management in order to enable them handle the malaria cases with adequate knowledge.

Twenty-six percent (26%) of the respondents had been in service for 6 to10 years and another 26% had been in service for a period of 11 to15 years. Eighteen percent (18%) had served for 1 to 5 years and another 18% had worked for 21 years and above while only 12% had worked for 16 to 20 years. This means that majority of the nursing staff are still far from retiring and if more knowledge is imparted in them on malaria case management there could be a remarkable difference in managing malaria clients and this could prevent a lot of premature and unwanted deaths.

5.2.2. KNOWLEDGE ON MALARIA CASE MANAGEMENT.

The findings of this study showed that 60% of the respondents had medium levels of knowledge regarding malaria case management, 32% had low levels of knowledge and only 8% had high levels of knowledge. This could be due to the fact that majority of the nurses never go for refresher courses in malaria case management. Therefore, the Health Center managers in Lusaka Urban should

ensure that the nurses who are frontline health workers and are involved in the actual management should be trained in malaria case management for better management of the clients with the same disease.

Figure 5 on page 59 shows that 82% of the respondents could not define malaria correctly and only 14% correctly defined malaria. This could mean that the nurses have forgotten the definition of malaria or they no longer read to keep themselves updated or it could be that the nurses don't go for refresher courses. Therefore, it is a challenge both to the management of the health centers and the nurses themselves to ensure that they know malaria very well as it is the disease they are dealing with most of the times. This will help in preventing unnecessary short comings like late commencement of the antimalarial drugs leading to complicated malaria and deaths, as malaria takes life from more people than any other infectious virus, apart from tuberculosis (WHO, 1990).

The findings in table 3 on page 59 show that half (50%) of the respondents knew the route of transmission of malaria while the other 50% were not sure. This could be attributed to lack of interest in knowing more about malaria because malaria is the commonest disease in Zambia. This is in line with WHO's statement which states that the global incidence of malaria is estimated to be nearly 120 million clinical cases each year, with nearly 300 million people carrying the parasite (WHO, 1990). Not knowing the route of malaria

transmission is not acceptable for a nurse. It shows that there is need to re-educate and retrain the nurses on how malaria is transmitted.

Table 4 on page 60 shows that 62% of the respondents knew only some signs and symptoms of uncomplicated malaria while only 38% knew all the five signs and symptoms of uncomplicated malaria. This means that there is still great need to re-educate and re-train the frontline nurses in malaria case management. There is also great need that the nurses should read further and update themselves instead of waiting for a seminar or a refresher course.

The findings in table 6 on page 64 show that most (70%) of the respondents gave a wrong national malaria treatment policy and only 10% gave a correct national malaria treatment policy. Twelve percent (12%) gave no response and 8% didn't know malaria treatment policy. This means that there is a problem because nurses are the ones that administer drugs and if they don't know what the national malaria treatment policy is then there is a risk of commencing a wrong anti-malarial regime to the clients who come to the clinic with malaria. This could also lead to having the clients' waiting for too long before the treatment is commenced, leading to patients developing complications of malaria and death.

Table 14 on page 80 shows that 15% of the respondents who had high levels of knowledge on malaria case management were between 40 and 49 years. This was followed by 9% of the respondents between 30 and 39 years. In this study

69% of the respondents between 40 and 49 years had medium levels of knowledge on malaria case management. Sixty-five percent (65%) of those between 30 and 39 years had medium levels of knowledge and 56% of the respondents aged between 20 and 29 years had medium levels of knowledge on malaria case management. Twenty percent (20%) of the respondents who were 50 years and above had low levels of knowledge on malaria case management. Eighty percent (80%) of the respondents aged 50 years and above had low levels of knowledge on malaria case management. This was followed by 44% of the respondents between 20 and 29 years who also had low levels of knowledge on malaria case management. Twenty-six percent (26%) of the respondents between 30 and 39 years had medium levels of knowledge regarding malaria case management. Fifteen percent (15%) of respondents between 40 and 49 years had low levels of knowledge on malaria case management. This could mean that nurses graduating recently are not receiving adequate training in malaria case management as shown by the 44% of low levels of knowledge in the age group between 20 and 29 years. This could also mean that nurse tutors have inadequate information on malaria case management. Therefore, there is need for the nursing schools to teach the students the ever-changing malaria case management in order for the nurses to perform well in the field when they graduate. However, all the nurses in general require knowledge update on malaria case management.

The findings of the study in table 15 on page 81 show that 33% of the registered midwives had high level of knowledge on malaria case management. However, the findings of the study show that 40% of the enrolled midwives had low levels of knowledge of malaria case management, followed by 36% of the enrolled nurses. Thirty-three percent (33%) of the registered midwives also had low levels of knowledge regarding malaria case management and none of the registered nurses had low levels of knowledge regarding malaria case management. The lack of knowledge among Enrolled nurses could be attributed to lack of in-service courses on malaria case management where as registered nurses who are managers are always updated in malaria case management. The other reason could be that these registered nurses and midwives are trained from big hospitals where there is current information on malaria case management.

More than half (56%) of the respondents who had been in service for 1 – 5 years had low levels of knowledge on malaria case management, while 17% of those who had been in service for 16 to 20 years had high levels of knowledge on malaria case management. This was followed by 11% of those respondents who had served for 21 years and above and only 8% of those respondents who had been in service for 11 to 15 years and another 8% of those who had been in service for 6 to 10 years had high levels of knowledge regarding malaria case management (Table 16:82). This could be due to the reason that schools of nursing are not adequately teaching the ever changing malaria case management for the recently qualified nurses to handle the malaria cases well. It

could also mean that junior nurses are not always recommended by their supervisors to go for in-service training in malaria case management.

5.2.3. PRACTICE TOWARDS MALARIA CASE MANAGEMENT.

The findings of the study show that 60% of the respondents had bad practice towards malaria case management while only 40% had good practice regarding malaria case management. This could be attributed to the inadequate knowledge the respondents have on malaria case management. It could also be attributed to the lack of interest in reading more about the ever changing trends in the presentation and treatment of malaria. The other reasons for bad practice could be that the newly qualified nurses do not have mentors and as a result there is bad practice in malaria case management. Students are not probably supervised on the wards ending up emulating what is being done wrongly by the qualified members of staff. This is later carried on into the field. The problem based learning method of teaching could also be having a negative impact on certain students in that students may find it hard to learn through group discussions.

The findings in table 7 on page 70 show that all the respondents (100%) had managed a client with malaria before. This could be attributed to the so many malaria cases that are attended to at the health facilities in Zambia. This is in Accordance with the Annual Health Statistical Bulletin (2005), which states that malaria continues to be the major cause of visitations to health facilities in Zambia.

Figure14 on page 71 shows that 44% of the respondents stated that they employed four interventions in the management of clients with malaria. Thirty-two percent (32%) stated that that they employed one method in managing clients with malaria. Sixteen percent (16%) didn't give any response on how they managed clients with malaria. Eight percent (8%) started that they employed two interventions in the management of a client with malaria. This could be due to the limited resources in managing the clients. For example, most respondents employed drug administration which was the intervention mostly available.

The findings in figure 15 on page 72 show that 90% of the respondents reported that they employed drug administration as one of the roles in malaria case management. Fifty percent (50%) employed Information, education and communication and 32% employed diagnosis as their role in malaria case management. This could be attributed to the availability of drugs. This could also mean that the health worker places more emphasis on cure than prevention. It could also mean that the respondents had no time to employ other methods like IEC especially that they were understaffed.

The findings of this research show that half (50%) of the respondents were of the view that anti-malarial drugs were always available while the other half (50%) said that the anti-malarial drugs were not always available at the health centers (Table 9:73). This disparity in the respondents' responses could be attributed to the fact that there is inadequate and erratic supply of anti-malarial drugs in the

country. This therefore, means that the hypothesis that states that "Inadequate and erratic supply of anti-malarial drugs has led to poor practices in malaria case management" has been accepted.

The findings in table 10, page 74, show that more than half (60%) of the respondents said that anti-malarial drugs were commenced immediately the clients came to the clinic while 40% said that the anti-malarial drugs were not commenced immediately. This could be attributed to the fact that they had to wait for the blood slide results and at times the drugs were out of stock as shown in table 11 on page 74. The findings in table 11 show that 80% of the respondents waited for the results of the blood slide before they commenced the clients on antimalarial drugs and 20% of the respondents said that they didn't commence the clients on anti-malarial drugs because the drugs were out of stock.

Table 12 on page 75 show that 74% of the respondents were not trained in malaria case management and 26% of the respondents said that they were trained in malaria case management. This is in line with the study conducted by the General Council of Zambia (GNC, 2007) which revealed that Knowledge about malaria case management was deficient among student nurses, nurses and midwives and the teaching staff. This therefore, means that the hypothesis which states that "Inadequate knowledge on the ever-changing case management of malaria has led to poor practices in malaria case management" has been accepted. It is important that every staff nurse is adequately trained in

malaria case management for better handling and management of clients with malaria at various clinics in Zambia. It is also important therefore to conduct more studies among health workers especially, among nurses, on malaria case management to determine the extent of the problem.

The findings in table 13, page 76 shows that 90% of the 13 respondents who received training in malaria case management said that their training was adequate for them to perform their duties and 8% of the respondents said that the training received was not adequate. This implies that if the frontline health workers especially nurses were trained in malaria case management, malaria would be managed well in Zambia and this would prevent complicated malaria and premature deaths. If nurses are trained in malaria case management there would be a great improvement in malaria case management because the nurses would be able to prescribe the correct treatment for malaria.

Figure 16 on page 77 shows that 84% of the respondents provided IEC on malaria prevention at their health centers and 10% of the respondents said that they did not provide IEC as they attended to the clients at the health centers while 6% of the respondents gave no response to the question. A large proportion of nurses provided IEC to clients on malaria prevention because one of the important roles of a nurse is to provide IEC to clients. It also shows the importance nurses attach to malaria prevention. This is because prevention is better than cure and it is very expensive for the government to treat malaria. This

notion is supported by a study conducted in Cambodia by Rimon et al (2003), which revealed that the average cost for malaria treatment was US$ 3.48. Therefore, there is need to strengthen IEC in order to save lives and prevent treatment costs for malaria.

Figure 18 on page 79 shows that 32% of the respondents suggestered that malaria case management could be improved by staff training. Another 32% of the respondents said that malaria case management could be improved by improving the diagnostic examinations and constant supply of anti-malarial drugs. Sixteen percent (16%) of the respondents mentioned IEC, staff training and Indoor Residual Spraying as methods of how to improve malaria case management. The other 20% of the respondents never gave any response to the question. This could mean that the 16% are the only respondents who are seeing where the gaps are in malaria case management and probably they could be the only group that was trained in malaria case management and are able to see gaps and how best they can improve malaria case management. If the statement by WHO, 1990 has to be changed. The statement is as follows:" malaria remains the world's most devastating disease despite the many efforts put in place to combat the disease", baseline health workers must be knowledgeable enough and see the gaps as well as give suggestions on how best to improve malaria case management.

Table 17 on page 83 shows that all (100%) of the young respondents aged between 20 and 29 years had bad practice regarding malaria case management. However, the findings show that 40% of the respondents aged 50 years and above had good practice towards malaria case management. This was followed by 31% of the respondents between 40 and 49 years. Twenty-two percent (22%) of those respondents between 30 and 39 years also had good practice regarding malaria case management. This could be attributed to lack of knowledge on malaria case management.

Two-thirds (67%) of the registered midwives had good practice while 83% of registered nurses had bad practice towards malaria case management despite having high levels of knowledge (Table 18:84). The bad practices towards malaria case management among registered nurses could be attributed to poor attitude because normally if one has the knowledge they should also have good practice because they are not operating ignorantly. The other reason could be due to the inadequate and erratic supply of drugs that lead to frustrations, ending up with poor or bad practices. It is therefore, a challenge to the MoH to provide all necessary drugs and equipment for the nurses to provide quality health care.

Table 19 on page 85 show that 44% of the respondents who had served for 21 years and above had good practice towards malaria case management. This was followed by 33% of those respondents who had been in service for 16 to 20 years. Twenty-three percent (23%) of the respondents who had been in service

for 11 to 15 years also had good practice regarding malaria case management and only 15% of the respondents who had served for 6 to 10 years had good practice towards malaria case management. All (100%) of the respondents who had been in service for 1 to 5 years had bad practice. This could be attributed to the low levels of knowledge that the recently graduated nurses have in regard to malaria case management.

The findings in table 20 page 86, show that 44% of respondents with medium levels of knowledge regarding malaria case management had poor practice while 16% of the respondents with medium levels of knowledge had good practice regarding malaria case management. This could mean that good practice may not necessarily go with high levels of knowledge, it sometimes has to go with one's attitude and personal experiences one may be going through at a particular time. It could also be due to inadequate and erratic supply of drugs.

5.3. IMPLICATIONS TO THE HEALTH CARE SYSTEM

The findings of this study revealed that all (100%) of the nurses who had served for 1 to 5 years had bad practice towards malaria case management. This is attributed to the lack of in-service training in malaria case management. It is also due to inadequate knowledge on malaria. This implies that the Lusaka district Health Management team together with the health management should organize in-service courses on malaria case management for the nurses to update their knowledge and skills. Further more the general nursing council of Zambia in

conjunction with the nursing schools should include in the training curriculum the trainings in malaria case management for finalist students like they do for the midwives in Integrated Management of Childhood Illnesses (IMCI) and HIV and AIDS courses.

The findings of this study revealed that there was low level of knowledge on malaria case management among the young nurses and those who had served for 1 to 5 years. This still calls for the Lusaka DHMT to organize in-service courses for the nurses in the health centers in order to combat malaria.

The findings of this study revealed that low levels of knowledge led to poor practices towards malaria case management. This means that the MoH in conjunction with the DHMT and management at various clinics in Lusaka must embark on programs that will impart knowledge in the frontline health workers, for example refresher courses where all the nurses involved in malaria case management are taught on the latest management of malaria. There must a large number of the nurses involved in the actual management to be trained in malaria case management. This may lead to improvement in the levels of knowledge among nurses thereby leading to good practices in malaria case management and finally lead to a malaria free Zambia.

5.4. CONCLUSION, RECOMMENDATIONS AND LIMITATIONS

5.4.1 CONCLUSION

The evaluation of Nurses' knowledge and practice towards malaria case management in Lusaka Urban clinics revealed Most of the respondents (46%) were within the age 30 to 39 years old. Majority (72%) of the respondents were enrolled nurses most (78%) of them were married. Twenty-six percent (26%) of these respondents had been in service between 6 and 10 years and another 26% had served for of period of 11 to 15 years.

The findings of this research showed that all (100%) of the respondents had nursed a client with malaria before. The study revealed that there was inadequate knowledge and bad practice regarding malaria case management among nurses in Lusaka Urban. Forty-four percent (44%) of the respondents within the age group 20 -29 years had low levels of malaria case management. Furthermore, 100% of nurses who had been in service between 1 and 5 years had bad practices towards malaria case management. This study also reveled that despite the high levels of knowledge, this did not have an impact on malaria case management as shown by 83% of the registered nurses who had bad practices regarding malaria case management.

5.4.2. RECOMMENDATIONS

On the basis of the findings of this study, the following recommendations have been made to the MOH, Lusaka District health management team and health centers management.

5.4.2.1 MINISTRY OF HEALTH

The ministry of health should:

- Provide all necessary drugs and equipment on time to the health centers for their smooth operation of the centers.
- Retrain all nurses in the country on malaria case management in order to provide quality care and prevent mortality due to malaria.

5.4.2.2 DISTRICT HEALTH MANAGEMENT TEAM

- DHMTs should conduct capacity building of for its staff in malaria case management.
- Ensure that anti-malarial drugs are available in the health centers.

5.4.2.3 HEALTH CENTER MANAGEMENT

The health center management should:

- Ensure that many nurses are trained in malaria case management more especially the enrolled nurses.
- Ensure that there is enough stock of anti-malarial drugs for continuity of care.

- Continue encouraging nurses to provide IEC on malaria prevention.
- Encourage nurses to have interest in reading and updating themselves instead of just waiting to go for a refresher course or training in malaria case management.

5.4.3. LIMITATIONS

- One of the limitations of this study was time constraint as it was done along side other courses during the busy academic year; hence it was difficult to complete the study within the stipulated time.

- The small sample size makes it impossible to generalize the findings to the rest of the country.

5.4.5. DISSEMINATION OF FINDINGS

After data analysis and interpretation of the findings, bound copies of the research project will be submitted to the Department of Post Basic Nursing, School of Medicine, Medical Library and to the office of the Director of Lusaka District Urban Clinics.

The researcher will organize a day's meeting in which to disseminate the results of the research findings to the research participants.

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APPENDIX I

THE UNIVERSITY OF ZAMBIA

SCHOOL OF MEDICINE

DEPARTMENT OF POST BASIC NURSING

Self-Administered Questionnaire on Nurses' Knowledge and Practice towards Malaria Case Management in Lusaka Urban District Clinics.

Serial number ☐

Date _____

Place _____

INSTRUCTIONS TO PARTICIPANTS

1. Do not write your name on the questionnaire.
1 Tick ☐ in the space provided for questions with alternatives.
2 Fill in the blank spaces for questions without alternatives.
4. The information that shall be provided will be kept as confidential Information as it will not be availed to anyone.
5. Please answer all the questions.

SECTION A

DEMOGRAPHIC DATA

Tick your answer in the space provided

FOR OFFICIAL USE

1. Sex Male [ ]
   Female [ ]

1. How old are you?
   a. 20 – 29 years [ ]
   b. 30 – 39 years [ ]
   c. 40 – 49 years [ ]
   d. 50 and above [ ]

2. What is your marital status?
   a. Single [ ]
   b. Married [ ]
   c. Separated [ ]
   d. Widowed [ ]
   e. Divorced [ ]

3. What is your religion?
   a. Muslim [ ]
   b. Hindu [ ]
   c. Christian [ ]
   d. Others specify.....
   .....

4. What is your professional qualification?
   a. Enrolled Nurse. [ ]
   b. Enrolled Midwife [ ]
   c. Registered Nurse. [ ]
   d. Registered Midwife [ ]
   e. Others specify.....
   .....

6. How long have you been in service?

FOR OFFICIAL USE

a. 1 – 5 years [ ]
b. 6 – 10 years [ ]
c. 11 – 15 years [ ]
d. 16 – 20 years [ ]
e. 21 years and above [ ]

SECTION B KNOWLEDGE QUESTIONS ON MALARIA CASE MANAGEMENT.

7. What is malaria?.....
.....
.....
.....
.....

8. How is malaria transmitted?
.....
.....
.....

9. What are the signs and symptoms of uncomplicated Malaria?
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.....
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.....

10. Mention the signs of severe malaria.....
.....
.....
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.....

11. How is malaria diagnosed clinically?

FOR OFFICIAL USE

.....

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12. What laboratory tests are conducted in order to Diagnose Malaria?.....

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13. What is the treatment of malaria?.....

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14. What is the national malaria treatment policy?.....

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15. What are the side effects of malaria treatment?.....

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16. What is Intermittent Presumptive Treatment (IPT)?

.....

.....

17. How can malaria be prevented in pregnancy?

FOR OFFICIAL USE

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18. How does a child with severe malaria present?.....

.....

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.....

19. What is the home management of the child with malaria?

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.....

20. Explain the criteria for referral of malaria from the health Centre to the district hospital.....

.....

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.....

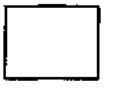
SECTION C QUESTIONS ON PRACTICE OF MALARIA CASE MANAGEMENT.

21. Have you ever nursed a client with malaria?

a. Yes [ ]

b. No [ ]

FOR OFFICIAL USE



22. How did you management a client with malaria?

.....

.....

23. What is your role in malaria case management?

a. Diagnonizing malaria [ ]

b. Administration of anti-malaria [ ]

c. Giving IEC [ ]

d. Others (specify).....

24. Are anti- malarial drugs always available in the Clinics?

a. Yes [ ]

b. No [ ]

25. Are the antimalarial drugs commenced immediately the patient comes to the clinic?

a. Yes [ ]

b. No [ ]

26. If "No" explain your response to question 25

.....

.....

.....

27. Have you ever been trained in malaria case management?

a. Yes [ ]

b. No [ ]

28 If "Yes" to question 27, do you think the training Received is adequate to perform your duties?

a. Yes [ ]

b. No [ ]

29 As part of your job, do you provide IEC on malaria Prevention in this health centre?

a. Yes [ ]

b. No [ ]

30 If "Yes" what IEC do you provide.....

.....

.....

.....

31. Give suggestions on how to improve malaria case Management..... .....

.....

.....

.....

END OF QUESTIONNARE!

THANKYOU VERY MUCH FOR YOUR TIME TAKEN TO ANSWER THIS QUESTIONNAIRE.

APPENDIX II

Work plan

ASK TO BE ERFORMED	PERSONNEL ASSIGNED TO TASK	DATES	PERSON DAYS REQUIRED
Compiling Research oposal	Researcher	16th April, 2007 – 31st July, 2007	16 weeks (125 days)
Clearance from School nd Authorities.	Research supervisor and Director	27th August, 2007 –14th September, 2007	2 weeks (14 days)
Pilot study	Researcher	27th August – 29th August 2007.	0 weeks (3 days)
Data collection	Researcher	3rd September, 2007- 21st September 2007.	3 weeks (21 days)
Data Analysis	Researcher	17th September – 28th September, 2007	2 weeks (14 days)
Report writing	Researcher	1st October – 19th October, 2007	3 weeks (21 days)
Submission of draft port to PBN Supervisor	Researcher	22nd October, 2007 – 23rd October, 2007	0 weeks (2 days)
Finalizing report	Researcher	29th October 2007 – 11th November 2007.	2 weeks (14 days)
Monitoring and aluation	Researcher	Continuous	Continuous
Dissemination of earch findings	Researcher	10th December, 2007 – 14th December, 2007	0 weeks (5 days).

APPENDEX III

GANTT CHART

TASK TO BE PERFORMED	RESPONSIBLE PERSON	JUN 2007	JUL 2007	AUG 2007	SEP 2007	OCT 2007	NOV 2007	DEC 2007	JAN 2008
1. Finalizing Research Proposal.	Researcher	←	→						
2. Clearance from school authorities	Researcher Supervisor		←	→					
3. Pilot study	Researcher			←	→				
4. Permission to conduct a research from Lusaka DHMT.	Director (LDHMT).			←	→				
5. Data collection	Researcher				←	→			
6. Data analysis	Researcher					←	→		
7. Draft report to PBN supervisor	Researcher						←	→	
8. Finalizing and submission of report	Researcher						←	→	
9. Disseminating of research findings	Researcher							←	→
10. Monitoring and evaluation	Researcher	←	—	—	—	—	—	—	→

APPENDIX IV

BUDGET

ITEM	UNIT COST K N	QUANTITY	TOTAL K N
1. STATIONARY			
a. Typing paper	30,000. 00	4 reams	120,000. 00
b. Note book	10,000.00	1	10,000. 00
c. Pencils	6,000.00	1 packet	6,000. 00
d. Pens	10,000.00	1 packet	10,000. 00
e. Stapler	35,000.00	1	35,000. 00
f. Staples	10,000.00	1 packet	10,000. 00
g. Markers	15,000.00	1 packet	15,000. 00
h. Calculator	100,000.00	1	100,000. 00
j. Flip chart	45,000.00	2	90,000. 00
k. Ruler	5,000.00	1	5,000. 00
l. Cello-tape	8,000.00	1	8,000. 00
m. Eraser	10,000.00	1 packet	10,000. 00
n. Folder	20,000.00	1	20,000. 00
SUBTOTAL			**K 439,000. 00**

2.SECTRETARIAL SERVICES			
a. Typing research proposal	4,500.00/page	100 pages	450,000. 00
b. Typing Questionnaire	4,500.00/page	10 pages	45,000. 00
c.Photocopying Questionnaire	250.00/page	550 pages	137,000. 00
d. Binding research proposal	50,000.00/copy	1 copy	50,000. 00
e. Typing draft report			
f. Typing final report	4,500.00/page	100 pages	450,000. 00
g. Binding final report	4,500.00/page	100 pages	450,000. 00
	75,000.00/copy	4 copies	300,000. 00
SUBTOTAL			**K1, 882,000. 00**
3.FIELD WORK AND TRAVEL EXPENSES			
a. Lunch allowance for researcher	50,000.00/day	16 days	800,000. 00
b. Transport allowance	20,000.00/day	16 days	320,000. 00
SUBTOTAL			**K1, 120,000. 00**
4. DISSEMINATION			
a. Distribution of Bound copies	20,000.00/day	3 days	60,000. 00
SUBTOTAL			**K 60,000. 00**
5. MISCELLANEOUS EXPENSES OR CONTIGENT FUNDS			350,000.00
SUBTOTAL			**350,000.00**
GRAND TOTAL			**K3, 501,000.00**

APPENDIX V

BUDGET JUSTIFICATION

To arrive at the above budget figures, the researcher took time to go round and collect quotations from a selected number of business centers, stationery outlets and public transport operators. Factors that were taken into consideration besides economic prices were the quality and reliability of the items to be acquired. The K50, 000. Lunch allowance is the government recommended rate. As for transport, the average fare considering the radius the researcher will be covering per day is K20, 000. This is in the view of assumption that the clinics where the study will be conducted will not be close to each other and the researcher will be expected to go round all of them delivering questionnaires, interviewing respondents and collecting the completed questionnaires. The charges for secretarial services are standard.

The University of Zambia,
School of Medicine,
Department of Post Basic Nursing,
P.O. Box 50110.
LUSAKA
27th July 2007.

The Managing Director,
University Teaching Hospital,
P.O. Box
LUSAKA.

DMD - F1A

U.F.S. The Head of Department,
Post Basic Nursing,
School of Medicine.
LUSAKA.

UNIVERSITY OF ZAMBIA
DEPT OF POST BASIC NURSING
SCHOOL OF MEDICINE

Dear Sir,

REF: REQUEST TO CONDUCT A PILOT STUDY AMONG NURSES IN UTH.

I am a fourth (4) year student in the Department of Post Basic Nursing of the School of Medicine at the University of Zambia. In partial fulfillment of the award of the Bachelor of Science in Nursing degree, I am required to carry out a research project. My topic of study is "A study to determine Nurses' Knowledge and Practice towards Malaria Case Management". The target population for my study are nurses working in the urban clinics in Lusaka. The sample size will be 50.

I therefore, request for your permission to administer questionnaires to the nurses from 27th to 29th August 2007.

Your assistance will be highly appreciated.

Yours truly,

Josephine Koloko Kapobe.
RN/RTN

University of Zambia,
School of Medicine,
Department of Post Basic Nursing,
P.O. Box 50110.
LUSAKA.

27th July 2007.

The District Director of Health,
Lusaka District Health Management Team,
P. O. Box
LUSAKA.

U.F.S. The Head of Department,
Post Basic Nursing Department,
School of Medicine,
LUSAKA.

UNIVERSITY OF ZAMBIA
DEPT OF POST BASIC NURSING
SCHOOL OF MEDICINE
LUSAKA

Dear Sir,

REF: REQUEST FOR PERMISSION TO UNDERTAKE A STUDY IN THE DISTRICT.

I am a fourth (4) year student in the department of Post Basic Nursing of the School of Medicine at the University of Zambia. In partial fulfillment of the award of the Bachelor in Science in Nursing degree, I am required to carry out a research project. My study of topic is " A study to determine Nurses' Knowledge and Practice on Malaria Case Management". The target population for my study are the nurses working in the urban clinics in Lusaka. The sample size will be 50.

I therefore, request for your permission to administer questionnaires to the nurses from the urban clinics. I intend to carry out this exercise in the month of September 2007.

Your assistance will highly be appreciated.

Yours truly,

Josephine Koloko Kapobe.
RN/RTN

P.O. Box 50827
Lusaka
Tel: +260-1-235554
Fax: +260-1-236429

In reply please quote
No.....

Republic of Zambia

MINISTRY OF HEALTH
LUSAKA DISTRICT HEALTH MANAGEMENT TEAM

Date 15 August, 2007

The In-Charge
Chilenje Health Centre
P.O. Box 50827
LUSAKA

Dear Sir/Madam,

RE: RESEARCH PROJECT- Joseph Kabuko Kapobe

Be informed that permission has been granted for the above named student to be attached to your health centre for a research project.

However this should be done with minimal disruption to the day to day activities at the Health centre and at no cost to Lusaka District Health Management Team.

Your usual cooperation will be appreciated.

DR. M. KABASO
CLINICAL CARE EXPERT
FOR DISTRICT DIRECTOR OF HEALTH

cc: Kabwata
Kabwata
Civic Centre
Kamwala

1 AUG 2007