

**AN EXAMINATION OF THE COMMUNICATION STRATEGIES AND
TECHNIQUES USED BY THE SOCIETY FOR FAMILY HEALTH IN
MALARIA CONTROL PROGRAMME IN LUANGWA**

By

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Requirements of the Degree of Master in Communication for Development**

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2010

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APPROVAL

This report of Shadrack Chembe is approved as fulfilling the partial requirements for the award of the degree of Master in Communication for Development by the University of Zambia.

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ABSTRACT

This report is a result of a study whose main objective was to evaluate some of the communication strategies and techniques used by Society for Family Health (SFH) in the fight against malaria in Luangwa District. In pursuing this objective, the study found out how much people knew about malaria and to what extent people at the grass root level were involved in malaria prevention programmes. The study also established people's attitudes towards the distribution, acquisition and use of insecticide treated net. On the positive note, the SFH malaria control programme Luangwa District has done very well in using both interpersonal and mass communication channels to increase people's knowledge about malaria and make them believe that slashing around their homes and burying pools of water can help to reduce the malaria incidence. On the level of practice, the intervention had succeeded in getting people to sleep under ITNs. Even so, some people still do not know what the cause of malaria is. Worse still, the majority do not consider malaria to be a very serious disease. Moreover, the malaria control programme was mostly carried out on a non-participatory basis. Lastly, some of the messages used were too difficult to be understood by the target audience. Therefore, it is recommended that there should be continuous sensitization on malaria. Furthermore, malaria prevention efforts should concentrate on changing people's attitudes towards malaria in terms of its severity. Lastly, the fight against malaria should be a continuous process in which people at the grassroots participate fully because the success of any programme depends, to a large extent, on the participation of the target audience.

To my father and mother, Mr. and Mrs. Kafula

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LIST OF ABBREVIATIONS AND ACRONYMS

ACT	Artemisinin-based Combination Therapy
AIDS	Acquired Immune Deficiency Syndrome
AMREF	African Medical and Research Foundation
CHW	Community Health Worker
CIDRZ	Centre for Infectious Disease Research in Zambia
CRS	Catholic Relief Service
CSP	Country Strategic Plan
DHO	District Health Office
DHMT	District Health Management Team
DHMTCC	District Health Management Team Centres
GDP	Gross Domestic Product
HBM	Health Belief Model
HIV	Human Immunodeficiency Virus
IPT	Intermittent preventive treatment
IRS	Indoor residual spraying
ITN	Insecticide Treated Net
MACEPA	Malaria Control and Evaluation Partnership in Africa
MDGs	Millennium Development Goals
MIS	Malaria Indicator Survey
NAC	National Aids Council
NGO	Non-governmental Organisation
NMCC	National Malaria Control Centre

PMI	President Malaria Initiative
RBM	Roll Back Malaria
SFH	Society for Family Health
SPSS	Statistical Package for Social Sciences
UNICEF	United Nations International Children's Emergency Fund
USAID	United States Agency for International Development
WHO	World Health Organisation
ZDHS	Zambia Demographic and Health Survey

CHAPTER ONE: INTRODUCTION

1.0 Introduction

Malaria is one of the most severe public health problems worldwide. In many developing countries including Zambia, it is a leading cause of death. In these countries, young children and pregnant women are the ones who are most affected. Fortunately, malaria is both preventable and curable. Therefore, communication plays a vital role in ensuring that people acquire correct knowledge, develop favourable attitudes and engage in appropriate practices that are critical to malaria control. The success of programmes designed to help reduce malaria depend on the use of appropriate communication strategies.

Consequently, this report is a result of examination of the communication strategies used by Society for Family Health (SFH) in the fight against malaria in Luangwa District in Lusaka Province. SFH, where the researcher was attached, was chosen because it was one of the organisations actively involved in the fight against malaria in Zambia. By getting information from some SFH employees and the beneficiaries of SFH programmes, the study found out how much people knew about malaria in terms of its causes, prevention and severity and to what extent people at the grass root level were involved in malaria prevention programmes. Moreover, the study aimed at establishing people's attitudes towards the distribution, acquisition and use of insecticide treated nets that were among the health products being promoted by SFH. This information would be useful in future programmes as it would enable change agents to know here to focus

their efforts in fighting malaria. The SFH programme was a five-year programme in Luangwa District which ended in August, 2010.

In Zambia, reducing the burden of malaria is a national priority because of its negative impact on Zambia's population where nearly four million clinical cases were diagnosed and fifty thousand deaths are attributed to malaria each year. Consequently, Zambia participated in the launch of the Roll Back Malaria (RBM) Partnership in 1999 at which the then Minister of health, Professor Nkandu Luo, was one of the delegates to the RBM board. At the meeting, a strategic plan that was consistent with expectations for deployment of proven malaria interventions was established. Nevertheless, initial surveys in 2001 and 2004 showed that there had been relatively low national population coverage with the key interventions.

Accelerated malaria control in Zambia started in 2003 about 500, 000 insecticide-treated nets were distributed and artemisinin-based combination therapy (ACT) started in seven pilot districts through a grant from the Global Fund. The Ministry of Health had since then further expanded malaria control activities with grants worth US \$120 million from the Global Fund and support from other co-operating partners such as the President Malaria Initiative (PMI), the Malaria Control and Evaluation Partnership in Africa (MACEPA), Non-governmental Organizations and the World Bank Booster Programme for Malaria Control in Africa. (WHO, 2009). Recognizing that monitoring and evaluation was critical for understanding the impact and improving programme performance, Zambia conducted a malaria indicator survey (MIS) in May and June 2006. In this survey, the results showed that there had been a significant progress in

national malaria programme coverage. The survey also helped in identifying actions critically needed to achieve impact. The government of Zambia, through the National Malaria Strategic Plan 2006-2010, committed to increase coverage of key malaria control interventions and organisations such as SFH were considered as key partners. The research of this nature was, therefore, considered relevant as it was going to contribute towards the sharpening of methodologies used in malaria control programmes in Zambia in working towards the eradication of this disease.

1.1 Zambia

Zambia is found in Southern Africa east of Angola. Its geographic coordinates are 15 00 S, 30 00 E. it has a total area of 752, 614 square kilometres. This is divided into land and water. Land takes an area of 740, 724 square kilometres while the remaining 11, 890 square kilometres is occupied by water. Zambia, being a landlocked country, shares its border with eight countries. These are: Angola, Botswana, Democratic Republic of Congo, Malawi, Mozambique, Namibia, Tanzania and Zimbabwe. Zambia experiences a tropical type of climate with the rainy season usually falling between October and April. Most of Zambia's terrain is a high flat land with some hills and mountains. This country is very rich in natural resources which include copper, cobalt, lead, zinc, coal, emerald, gold, silver, uranium and hydropower. Zambia is in fact the third largest producer of emerald after Columbia and Brazil.

Zambia, which was formerly a British colony, got independence in 1964. Since then, it has gone through different forms of government from a one party state (1964-1972) to a one party participatory democracy (1972-1990) and finally to a multiparty system which

is currently at play. Regular presidential and parliamentary elections are held after five years. The Movement for Multiparty Democracy (MMD) is the current ruling party with Rupiah Bwezani Banda as the elected Zambian president. The legislative, executive and judicial branches of government are housed in Lusaka, the capital, epitomized by the presence of the National Assembly, State House and the Supreme and High courts.

The population of Zambia increased from 7.8 million in 1990 to 9.9 million in 2000 (CSO, 2007). Although another national census is yet to be conducted in 2010, Zambia's population is estimated at 12 million. (Jennings, 2009). Zambia is said to be one of the most highly urbanised countries in Africa south of the Sahara. Unemployment and underemployment are serious problems. About two-thirds of Zambians live in poverty. Per capita annual incomes are well below their levels at independence and place the country among the world's poorest nations. In the 2007 Zambia Demographic and Health Survey (ZDHS), life expectancy was estimated at 48 years and maternal mortality rate at 591 per 100,000 pregnancies.

In Zambia, malaria is endemic and it varies according to season and geography. For example, there are more malaria cases in the rainy season due to the increased amount of stagnant water which provides breeding grounds for mosquitoes. According to the Zambia Demographic and Health Survey (2007), 4.3 million cases of malaria (confirmed and unconfirmed) were reported countrywide in 2007 with 6,149 deaths. The annual malaria incidence rate was estimated at 358 cases per 1,000 population. Malaria causes a severe social and economic burden on communities living in endemic areas in Zambia.

The country's rate of economic growth cannot support rapid population growth and the strain which malaria and HIV and AIDS related issues place on government resources. Zambia's economy has also suffered the effects of the global economic meltdown and a subsequent fall in world copper prices. High inflation, currency volatility, rising unemployment, and restricted access to capital dampened Zambia's economic performance in early 2009. Nevertheless, copper prices have nearly returned to more stable, profit-yielding levels. Even so, the Zambian Government is pursuing an economic diversification program to reduce the economy's overdependence on the copper industry. This initiative seeks to exploit other components of Zambia's rich resource base by promoting agriculture, tourism, gemstone mining, and hydro power. The government is also attempting to create an environment that encourages entrepreneurship and private-sector led growth.

Seeing the threat that malaria poses to Zambia's health and economy, the Zambian government has identified the eradication of malaria and other serious diseases as a priority to attain the Millennium Development Goals (MDGs) for reducing maternal and child mortality rates in Zambia (ZDHS, 2007). A number of measures put in place include a target to reduce malaria incidence by 75 percent by 2010.

1.2 Luangwa District

Luangwa District is found in Lusaka Province. It is situated near the confluence of the Luangwa and Zambezi Rivers. Luangwa is usually very hot and receives low rainfall. Luangwa has eight health centres and one mission hospital. Seven of these centres are situated along the 80-kilometre dirt road that connects Luangwa to the main

(Lusaka – Chipata road). The eighth health centre, Kavalamanja, located thirteen kilometres off the main dirt road and is the least accessible health facility in the district. (Zambia Pilot Study of Performance-based incentives, 2006).

The economy of the people in this area is largely influenced by the activities which take place in the Luangwa and Zambezi rivers. These include fishing, reed harvesting and transportation. Most of the fish harvested from these rivers is transported to the markets of the major cities of the country such as Lusaka. The harvesting of reeds from the Luangwa and the Zambezi rivers has a significant bearing on the economy of the area. These reeds are used to weave mats and other basketry products which are then transported to the cities where they fetch a lot of money for the people involved in the trade.

Apart from fishing, reed harvesting and transportation, most of the people in Luangwa are involved in subsistence farming. Due to the presence of game management areas on the western side of the district, many farms which are near these areas expose the crops to animal destruction, leaving the people with no harvest what so ever.

Another important aspect of the economy in Luangwa District is tourism. It has a vast wildlife resource of about 9 000 square kilometres in extent on the western side of the district with a total of 60 animal species and 400 species of birds (Lukama, 2003). While tourism contributes positively to the economy of Luangwa District, it is one of the

challenges in the fight against malaria. This is because people who have animals are forced to keep watch at night to protect their animals from predators. Consequently, they expose themselves to mosquito bites thereby putting themselves in danger of suffering from malaria.

Most of the people of Luangwa belong there by descent. They are under the rule of the Chief who appoints the village headmen to help him govern his subjects. These village headmen or headwomen have to be consulted before proceeding to conduct any activities with the villagers. For example, if one intends to carry out a research on malaria in any of the villages, the chief first has to be consulted and later on the village headman or headwoman of a particular village where the research will be done.

Apart from this traditional set up, the villagers have links to the district government machinery. The district government consists of government workers responsible for providing extension and management services in health, fisheries, agriculture, forestry, social and community development. As far as health is concerned, the District Health Office (DHO) which was formerly called the District Health Management Team (DHMT) occupies a very important place because it overlooks all the activities going on in the district with regard to health. The office particularly takes keen interest in malaria control programmes because it is through this office that government fights malaria in Luangwa District. The coordinating role that the DHO plays cannot be overlooked by any organisation that intends to carry out its malaria prevention programmes

1.3 Society for Family Health

The Society for Family Health programme began in 1992 with its focus on HIV and AIDS, malaria, reproductive health, child survival and vision. In terms of malaria, SFH targeted pregnant women and children under five. It operated in collaboration with the Zambian Ministries of Health and Education, National Malaria Control Centre (NMCC), University Teaching Hospital (UTH), National AIDS Council, Mwami Adventist Hospital, Luapula Foundation, Youth Alive, Development Action People to People (DAPP), Comprehensive HIV/AIDS Management Program, Zambia Health Education Communications Trust, Health Communication Partnership, Centre for Infectious Disease Research in Zambia (CIDRZ), Community-based NGOs such as CARE, Catholic Relief Service (CRS) and Neighbourhood Health Committees. At the time of the study, SFH was being funded by the Federal Republic of Germany through KfW Entwicklungs bank (the German Development bank), the Global Fund to fight AIDS, Tuberculosis and Malaria, United Nations International Children's Emergency Fund (UNICEF), United States Agency for International Development (USAID) and Presidential Emergency Plan for AIDS Relief.

SFH's interventions incorporated the use of branded communications through broadcast and print media, and information and education communications delivering messages to general and target populations. Additionally, SFH employed outreach workers, medical detailers, drama groups and mobile video units nationwide to sensitize populations regarding its products and services. SFH partnered with [redacted] in a national wide

project to distribute *Mama Safenite* LLINs in an effort to prevent malaria. SFH was also the implementer of the Malaria in Pregnancy Program which then covered all the nine provinces of Zambia. This programme was managed throughout District Health Management Team Centres (DHMTc) and then through ante-natal clinics at district and ward levels, making nets easily accessible to pregnant women and children under five.

1.4 Statement of the problem

Malaria is the most severe public health problem in Zambia. The prevalence of malaria in Zambia has caused a major problem among the people Zambia and its government. Nearly four million clinical cases are diagnosed and fifty thousand deaths are attributed to this killer disease with about twenty percent of maternal mortality. Consequently, it poses a great risk to Zambia's health and economy.

1.5 Rationale

The figures of malaria cases and deaths in Zambia are high to go unchecked especially against the background that some countries like America have managed to eradicate it. With studies of this nature, Africa in general and Zambia in particular will undoubtedly benefit because health is a very important factor in human survival and development. Therefore, it is Zambia's national health priority to reduce the burden of malaria and this report is meant to contribute to this.

1.6 Outline of chapters.

Chapter one comprises the introduction, background to study and the statement of the problem. Chapter two, the methodology chapter, is by the objectives of the study, research questions, methods to be used, sampling procedure, data gathering techniques employed in data collection and analysis. Chapter three is mainly concerned with definitions, both conceptual and operational, and the main theories underpinning the study. Chapter four entirely concentrates on literature review. Data analysis and presentation of results constitute chapter five. Chapter six deals with the interpretation of results while chapter seven brings the research paper its close with recommendations and conclusion.

CHAPTER TWO: METHODOLOGY

2.0 Introduction

This chapter consists of the main objective and specific objectives of the study, research questions, methods, sampling procedure, data gathering techniques and data recording and analysis.

2.1 Main objective of the study

The main objective of the study was to evaluate some of the communication strategies and techniques used by SFH in the fight against malaria campaigns in attempting to find out why malaria continues to be a major health problem despite the coverage that it receives.

2.2 Specific objectives

The study:

- Found out how much people knew about malaria in terms of its causes and prevention.
- Established and reviewed some of the communication strategies and techniques used by SFH in malaria control interventions.
- Determined whether and to what extent people at the grassroots level were involved in the fight against malaria campaigns.
- Enquired into some of the people's attitudes towards the distribution, acquisition, and use of insecticide treated nets.

- Gathered information about what people actually did in order to prevent themselves from malaria with regard to the use of insecticide treated nets.

2.3 Research questions

The research answered the following questions:

- How much do people know about malaria in terms of its prevention and severity?
- What are some of the communication strategies and techniques used in malaria control interventions?
- How much are people at the grassroots' level involved designing and disseminating communication messages in the fight against malaria?
- What are some of the people's attitudes towards the distribution, acquisition and use of insecticide treated nets?
- Do people actually sleep under insecticide treated nets? If so, how often?

2.4 Methods

The researcher used the triangulation method meaning that both quantitative and qualitative methods were used in collecting, analyzing and explaining data. The combination of the two methodologies ensured the richness of data. Taking advantage of the strengths of both methods ensured validity, reliability as well as a relatively in-depth understanding of the subject under scrutiny.

2.5 Sampling procedure

Both probabilistic and non-probabilistic sampling methods were used. Taking into account the social differences or strata that exist in society and the complexities that exist among human beings, stratified random sampling and multi-stage cluster sampling were utilized in order to make the study as comprehensive as possible. Purposive sampling was used to identify participants in in-depth interviews. The choice of the people to be interviewed, in in-depth interviews, depended on the researcher's knowledge and judgment based on those seen to be relevant to the subject such as the one in charge of malaria research at SFH.

2.6 Data gathering techniques

The main tool for data collection was the scheduled structured interview based on an established questionnaire. The questionnaire was carefully designed in advance to ensure that the formulated questions provided both qualitative and quantitative data. For the in-depth interview, however, a non-scheduled structured interview was used in order to get as much qualitative data as possible.

The methods outlined above were seen to be appropriate enough to provide both quantitative and qualitative data. This enabled the researcher to achieve a comprehensive understanding of the society under study. The non scheduled structured interview enabled respondents to freely express their views. At same time, the researcher's presence helped to make sure that the questionnaires were completed according to

instructions and ambiguous questions or answers were clarified thereby maintaining a high response rate.

2.7 Data recording and analysis

The Statistical Package for Social Sciences (SPSS) was used in recording and analyzing data. Open ended answers were coded in order to put data in a statistical form.

CHAPTER THREE: THEORETICAL AND CONCEPTUAL FRAME WORK

3.0 Introduction

This chapter looks at the theories and concepts that were used in interpreting data obtained from the study. These theories and concepts of communication relevant to the fight against malaria include social change, mass communication, interpersonal communication, participatory development communication, the theory of communication, the cognitive dissonance theory, the activation theory of information exposure, the health belief model, and diffusion of innovations.

3.1 Theories of communication relevant to the fight against malaria

3.1.1 Social Change

Social change is defined by Rogers (2003, p. 6) as “the process by which alteration occurs in the structure and function of a social system.” For example, the introduction of ITNs in a particular community and starting a project to spray people’s homes with insecticides may both be classified as social change. These actions alter both the structure and function of a social system. The structure of a social system is made up of various individual and group statuses while the functioning element of this structure is a role which is defined as the actual behaviour of an individual in a given status. Status and role are said to affect each other reciprocally. For example, the status of a chief affects how an individual holding this position will act in his official capacity.

The process of social change may be broken down into three steps. The first step is invention. This is when new ideas are created or developed. Sleeping under ITNs as a way of preventing oneself against malaria is an example of an invention. This may start with one person either within the social system or from outside. The second step is diffusion, that is, the communication of new ideas throughout a given social system. The last step is consequence which is the occurrence of change within a social system as a result of the adoption or rejection of the innovations. In the case of campaigns against malaria, the idea of sleeping under a mosquito net moves from the innovator and is communicated throughout the social system. Consequently, it is either accepted or rejected. Therefore, communication specialists championing the fight against malaria should pay attention to these three stages bearing in mind that the fact that ITNs are introduced and communicated throughout a particular community does not necessarily mean that the consequence will always be positive (adoption).

Communication is a vital aspect of social change. For change to take place, certain messages have to be transferred from a source to one or more receivers. The potential adopter of an innovation first hears of the new idea, gains more knowledge about it and then decides to adopt it. Applying this to the fight against malaria, potential adopters of ITNs or home insecticide sprays first hear about these new products being introduced into their homes learn about how to use them and finally decide to adopt them. Therefore, communication is essential in the fight against malaria.

3.1.2 Mass Communication

Mass communication may be defined as the academic study of the various means by which individuals and entities relay information through mass media to large segments of the population at the same time. However, mass communication in this paper refers to the process by which messages are communicated to a broad, heterogeneous and undefined audience almost at the same time by the use of technology. Mass communication is achieved by the use of print and electronic channels. This type of communication is said to be effective in spreading information quickly. It is also important in increasing knowledge of ideas. However, it is not enough on its own to ensure that knowledge is increased and new ideas are accepted by people. Therefore, another type of communication is necessary to be used in-hand with mass communication as indicated in the next section.

3.1.3 Interpersonal communication

Falikowski (2002) defines interpersonal communication as a special form of communication that occurs when we interact simultaneously with another person and mutually influence each other. This type of communication provides for two-way interaction and feedback. These are effective in persuasion. It is more likely to cause attitude change. Interpersonal communication differs from other forms of communication in that there are few participants involved and the interactants are in close physical proximity to each other. Additionally, there are many sensory channels used and feedback is immediate. Therefore, this type of communication is critical to the fight against malaria.

3.1.4 Participatory development communication as a dialogical process

This model of development puts emphasis, among other things, on the fact that the development system comprises a multitude of groups and communities differentiated by various economic, social and cultural factors coexisting with each other. Moreover, different levels of development activities exist such as national-local, macro-micro, public-private, technical-ideological, informational-emotional. Corresponding to these are different kinds of ‘languages’ and ‘messages’ of communication involving different participants. For example, a person in a rural area may use a vocabulary different from the one used by a town dweller even when these two people have the same kind of problems and use the same language. This situation may cause a misunderstanding between the two. So, in the fight against malaria, it is imperative to pay attention to these factors that differentiate people so that different participants in development projects are taken care of. There is need to ensure that only messages that reinforce each other are sent and those that are isolated and marginal are avoided.

Another observation made by this development model is that information and involvement leads to both centralizing and decentralizing tendencies. With regard to this, Rahim in White *et al* (1994, p. 129) writes, “As the individual and groups become more informed and involved in development, their consciousness about their distinctive roles and rights, and the stakes of change sharpens. They become more active in resisting the centralization of ideas and values imposed from above and act against their interests.” The danger with this tendency is that individuals or groups might reject even those ideas and values that are useful solely on the basis that these ideas and values have

been imposed on them. Therefore, malaria campaign managers and change agents should endeavour to harness the power of these complexities in society and put it to work for the common good. This may partly be achieved using participatory development communication which revolves around dialogue. This allows for interaction between senders and receivers of messages to arrive at shared meanings.

3.1.5 Theory of communication

The theory of communication recognizes an active part an individual plays in the process of communication. Renckstorf (2004) explains that audiences are made up of real people surrounded by and imbedded in social groups which serve as networks for interpersonal relationships through which media effects are mediated. Because of this reality, audiences can resist the influence often intended by media campaigners. Renckstorf (2004, p. 1) writes,

Evidence of selective exposure, selective perception and selective retention soon accumulated, showing that audiences tend to match their media use – i.e., their choice of media channels and media content – their own tastes, ideas and informational needs.

According to this theory, an individual is actively involved in communication through selective exposure, attention, perception and retention. Selective exposure means that individuals choose what kind of material to which they expose themselves. For example, an individual may choose whether to come to a gathering where malaria messages are being disseminated or shun it.

Selective attention means that even when an individual has exposed himself or herself to certain information, they choose whether to attend to a particular phenomenon or not. In the example about malaria, an individual who has chosen to come to a meeting selects what kind of messages to pay attention to. The communicator should, therefore, ensure that the malaria messages communicated are considered important by people and this may be achieved by referring to their own experiences. Another way of ensuring that people consider one's message important is the use of cues such as source variables where one captures people's attention by using important and famous people. When one is sending more than one message, it is advisable to prioritise the messages so that the most important ones are given more attention.

Selective perception means that people still choose what to think about even after they have decided to attend to something. People's attention to stimuli and information consistent with their attitudes or interests will consciously or unconsciously increase. If one wants to successfully get people to think about one's message, persuasion is an important tool. Using techniques like testimonies can encourage people to think about your message. Having chosen what to think about, individuals consciously or unconsciously choose to retain certain things and throw out others. This is called selective retention. Therefore, it is important for communicators in malaria campaign projects to design messages while paying attention to the processes of selective exposure, selective attention, selective perception and selective retention. The knowledge of this will enable those who design and disseminate malaria messages to ensure these messages get to the intended target and are retained so that once the knowledge level has been reached; one can now concentrate on changing people's attitudes.

3.1.6 The Cognitive Dissonance theory

The Cognitive Dissonance theory was developed by Festinger in 1957. This theory is concerned with the relationship among cognitions. Cognition, for the purpose of this paper, is defined as a piece of knowledge. The knowledge may be about an emotion, an attitude, a behaviour, a value or any other thing. For example, the knowledge that one does not like sleeping under an ITN is a cognition; the knowledge that malaria is the number one killer disease in Zambia is a cognition; the knowledge that people ought to prevent themselves from malaria is a cognition. People hold a multitude of cognitions simultaneously, and these cognitions form irrelevant, inconsistent or dissonant relationships with one another. The cognitive dissonance states that people are in a distressing mental state when they do things that they would not normally do or when they have opinions that do not go along with opinions they already hold.

The cognitive dissonance theory can be used in malaria campaigns by using conflicting messages in order to provoke cognitive dissonance in people's minds. This can help in changing people's belief system. For example, messages about malaria can be used to provoke dissonance in those people who do not regard malaria as a very serious disease. This can be achieved by giving the figures of people who die of malaria in Zambia. The believability of the message may be increased by linking people to their reference groups who actually consider malaria to be a serious disease. Famous people should be used in order to improve the persuasiveness of these messages. When evidence is provided about the seriousness of malaria, it may force individuals to begin interrogating their individual ideas and beliefs about malaria. The dissonance which is created in the

individual's mind pushes them to solve the cognitive inconsistency by changing their beliefs and adapting them to new evidence. So, this theory can improve the effectiveness of messages that are disseminated in the fight against malaria.

3.1.7 The Activation Theory of Information Exposure

This theory is an explanation of how individuals seek that fulfil their need to be entertained as well as their cognitive need for information. Donohew, Palmgreen and Duncan (1980) write, "The Activation Theory of Information Exposure states that an individual will seek to satisfy their need for stimulation and information when attending to a message, before they seek to fulfil their need for information alone." This theory is very helpful to those in advertising and persuasion with regard to the fight against malaria. As malaria campaign managers and communicators develop messages for individuals, it is important for them to meet the cognitive and emotional needs of their audiences. When the information is simply presented by someone talking at the audience and presenting hardcore information, some people, especially teenagers, may not attend to it. However, when the message is coated with music even an entertaining story, they are more likely to pay attention and retain the information that is presented. The activation theory of information exposure implies that people retain information when their need for stimulation and information has been fulfilled, rather than just their need for information. Therefore, infotainment or edutainment is the key to ensure that while recipients are being entertained, they are also given intended information.

3.1.8 The Health Belief Model

The Health Belief Model (HBM) was influenced by Kurt Lewin's theories stating that Perceptions of reality, rather than objective reality, influence behaviour. The HBM by Hochbaum (1958) posits that “the likelihood that a person will follow a preventive behaviour is influenced by their subjective weighing of the costs and benefits of the action.” A person’s perception of reality involves the following elements:

Perceived susceptibility: this refers to the person’s judgment of his or her risk of contracting the condition. This might be measured by asking questions like ‘Taking all factors into account, what do you think are your chances of getting the disease?’

Perceived seriousness of the condition: this refers to the severity of the condition, that is, its clinical consequences, disability, pain or death, and its impact on life style which may include one’s working ability, social relationships and other factors. This might be measured by asking questions such as “If you got the disease, how serious would that be?” “How many days would you spend in bed and off work?”

According to Hochbaum (1958), perceived susceptibility and seriousness comprise what is termed as perceived threat. The perceived threat is said to have a cognitive component and is influenced by information. It pressurizes a person to act although it does not determine how they will act. In addition to perceived threat, the balance between the perceived efficacy and cost of alternative courses of action also influences the person’s likelihood of acting and their preferred course of action. A person will look at whether the proposed action will be effective in reducing the health risk and whether this particular course of action has other benefits. Moreover, a person will weigh the

perceived benefits of a particular action against its perceived costs. The costs include barriers to an action, expenses, pain and whether this action will cause embarrassment. Having considered all the above elements, the final ingredient in the HBM is a stimulus or cue to action. In explaining the meaning of what stimulus or cue to action means, Hochbaum (1958) states, “When a person is motivated and can perceive a beneficial action to take, actual change often occurs when some external or internal cue (e.g., a change in health, the physician’s advice, or a friend’s death) triggers action.”

Janz and Becker (1984) recommend that consideration of HBM dimensions be a part of health education programming. Applying the HBM to the fight against malaria, the people at the grassroots should be made aware of how susceptible they are to contracting malaria. Having convinced them of their susceptibility to malaria, they should also be persuaded to believe that the consequences of contracting malaria are very severe and death is one example of this severity. People can be motivated to change and embrace ITNs and insecticide sprays by involving qualified health personnel whose messages will be more appealing since people are more likely to believe a health message if these messages are given by people from the health sector such as doctors or nurses. A person’s loss of a close friend or relative who died of malaria may be another complementary or supplementary external cue which can trigger action. If people at whom malaria messages are targeted have actually lost a relative, friend or neighbour to malaria, there is likelihood that these people will embrace courses of action that aim at preventing themselves against the disease.

3.1.9 The Diffusion of Innovations

The diffusion of innovations is a theory which is concerned with how, why, and the rate at which new ideas and technology spread through cultures. The concept of the diffusion of innovations has been studied by many scholars and one notable scholar is Everett Rogers. According to Rogers (1983, p. 5), diffusion of innovations refers to “the process by which an innovation is communicated through certain channels over time among the members of a social system.” This theory pays attention to important elements such as the innovation, types of communication channels, rate of adoption and the social system in which the innovation decision process is framed.

Stages of innovation:

According to Rogers (1983), there are five stages of innovation. These are:

- **Knowledge:** This is the stage where an individual gets exposed to an innovation but lacks information about it. During this stage, the individual has not been stimulated to seek more information about the innovation.
- **Persuasion:** The individual is not only exposed to an innovation but actively seeks information or details about the innovation.
- **Decision:** Having gathered enough information and taken the concept of the innovation, the individual in this stage weighs the advantages and disadvantages of using the innovation. This is the stage in which an individual decides whether to adopt or reject the innovation.

- **Implementation:** This is the stage where an individual evaluates the innovation to a varying degree depending on the situation. The individual determines the usefulness of the innovation and may search for further information about it.
- **Confirmation:** The individual in this stage finalises their decision to continue using the innovation and may use the innovation to its full potential.

Innovation decisions: There are three types of innovation decisions. The first type is an optional innovation decision where a person or an organization decides on something. The second type is a collective innovation decision where decisions are reached by consensus. The third type is an authority innovation-decision where another person or organization with requisite power, status or technological expertise imposes decisions.

Important characteristics of an innovation: Rogers outlines five characteristics that influence an individual's decision to adopt or reject an innovation. These are:

- **Relative advantage:** this refers to the degree to which an innovation supersedes what was there before. This has to do with how improved an innovation is over the previous one.
- **Compatibility:** this has to do with how consistent an innovation is with existing values, past experiences and needs of the adopting group.
- **Complexity:** if an innovation is too difficult to use, it is not likely that it will be adopted.

- **Trial ability:** this has to do with the extent to which an innovation can be implemented on a limited basis as it is being adopted. If one has had a hard time using and trying an innovation, they will be less likely to adopt it.
- **Observability:** this is the extent to which an innovation is visible in terms of its results.

Adopter categories: According to Rogers (1983), adopter categories are classifications of individuals within a social system on the basis of innovativeness. There are five adopter categories as follows:

- **Innovators:** these are the first individuals to adopt an innovation. Innovators are said to be willing to take risks, youngest in age, belong to the highest social class, have great financial lucidity, very social and have the closest contact with scientific sources and interaction with other innovators.
- **Early adopters:** this is the second fastest category of adopters. These individuals are characterized by the highest degree of opinion leadership. They are typically younger in age, have a higher social status, advanced education, and have more financial lucidity, and are more socially forward than late adopters.
- **Early Majority:** this category comprises individuals who adopt an innovation after a varying degree of time. Their time of adoption is significantly longer than the innovators and early adopters. The early majority is slower in the adoption process. These individuals are said to have above average social status, maintain contact with early adopters, and show some opinion leadership.
- **Late majority:** these adopt an innovation after the average member of society. These individuals are highly sceptical to innovations and will approach

an innovation after the majority of society has adopted it. They are of below average social status, very little financial lucidity, in contact with others in late majority and early majority, and show very little opinion leadership.

- **Laggards:** these are the last to adopt an innovation. Individuals in this category show little to no opinion leadership. They typically have an aversion to change agents and are usually advanced in age. They have a tendency to be focused on ‘traditions’, have lowest social status and financial lucidity, oldest of all other adopters, in contact with only family and close friends.

The diffusion of innovations is very useful in the fight against malaria since it is concerned with how innovations spread. For example, the introduction of ITNs is an example of an innovation and its adoption is influenced by many factors as outlined in the diffusion of innovations. Therefore, communicators need to be aware that the adoption or rejection of ITNs will depend on how much attention is given to the process of adoption and all other characteristics that are outlined in the diffusion of innovations.

In conclusion, it is important to realize that bringing about positive change in society requires the use of different strategies which are appropriate in particular situations. A single theory cannot explain why some strategies used in malaria programmes might succeed or fail. It is for this reason that a number of theories were used in interpreting data so as to increase the likelihood of the success of malaria campaigns and to explain why only some strategies used in the fight against malaria succeeded while others failed.

CHAPTER FOUR: LITERATURE REVIEW

4.0 Introduction

By reviewing some of the literature about malaria, the chapter drew some lessons from past research and identified which gap could be filled by this research. Consequently, it helped the researcher to position the study in the context of previous research.

4.1 Malaria in the world

Research indicates that malaria is one of the most severe public health problems in the world. According to the World Health Report (2005) produced by World Health Organisation (WHO), approximately 40% of the total global population is said to be at risk of malaria infection. Today, it is a leading cause of death and disease especially in many developing countries. Young children and pregnant women are the most affected groups. The Roll Back Malaria (RBM) information sheet states that there are approximately 300 to 500 million cases of malaria each year globally and 60% of these cases occur in Africa south of the Sahara. Malaria infections lead to more than a million deaths. According to the RBM report (2005), about 90% of these deaths occur in Africa, of which over 75% occur in African children under the age of five years.

The WHO'S World Malaria Report of 2005 links malaria to geography. For example, the report indicates that some 3.2 billion people in about 107 countries and territories lived in areas at risk of malaria transmission at the end of 2004. Statistics show that malaria occurs mostly in poor, tropical and sub-tropical regions of the world. The area

which is mostly affected is Africa South of the Sahara. This is due to a combination of a number of factors. The first factor is the presence of a very efficient mosquito vector called *Anopheles gambiae* which is responsible for high transmission of malaria in Africa. The second factor is that these poor, tropical and sub-tropical regions are predominated by *Plasmodium falciparum*, the predominant parasite species which causes the most severe form of malaria. In addition to the above factors, local weather conditions in some regions allow transmission to occur year round. Another contributing factor is that the scarce resources and socio-economic instability in poor countries hinder efficient malaria control activities. Even in areas of the world where malaria is a less prominent cause of deaths, it can cause substantial disease and incapacitation especially in rural areas of some South American and Southeast Asian countries.

In many countries with temperate climates, the disease was successfully eliminated during the mid-20th century. The WHO World Malaria Report (2005) indicates that there are some countries such as the United States of America where malaria transmission has been eliminated. Even so, the great majority of malaria cases in these countries occur in migrants or returning travellers coming from areas where malaria is being transmitted. This is called imported malaria. Therefore, malaria remains a health threat even for people who live in these countries where the disease is not endemic.

In areas where malaria is not endemic, the problem is exacerbated by the fact that most patients do not have protective immunity. So, when they get malaria, they can develop rapidly severe and even fatal disease. Worse enough, health care providers in these areas are usually unfamiliar with malaria and this leads to misdiagnosis or incorrect diagnosis and

treatment of the disease. It is also reported that certain conditions make it possible for malaria patients to transmit parasites to local mosquitoes which in turn can infect local residents. This course of events can re-introduce malaria in a previously malaria-free area if left unchecked. This necessarily implies that even countries where malaria transmission has never existed or has been eliminated, there is need for worldwide concerted efforts to combat this killer disease.

It has been established that malaria imposes substantial costs to both individuals and governments. For individuals and their families, costs include purchase of drugs for malaria treatment at home; expenses on travel to and treatment at dispensaries and clinics, lost days of work, absence from school, extra expenses on preventive measures and where deaths occur as a result of malaria, there are burial expenses.

Costs to government include maintenance of health facilities, purchase and supply of drugs, public health interventions against malaria such as insecticide spraying and distribution of insecticide-treated bed nets, loss of workers resulting into reduced output and many other costs. These costs add substantially to the economic burden of malaria on the economy and impede economic growth. For example, it has been estimated that economic growth per year of countries with intensive malaria is 1.3 percent lower than that of countries without malaria. Due to the negative impact that malaria has both on health, education and economy, studies have been conducted to find out the causes, prevention and treatment of this disease. The following section gives an overview of the history, types, transmission, symptoms, prevention and treatment of malaria.

4.1.1 Types of malaria

There are five types of malaria:

- 5.0 *Plasmodium vivax* (*P. vivax*): This is a milder form of the malaria and is generally not fatal. Nevertheless, it can cause a host of health problems in infected people if left untreated. *P. vivax* has the widest geographic distribution globally. This parasite has a liver stage and can remain in the body for years without causing sickness. The liver stage, however, may re-activate and cause relapses or malaria attacks after months, or even years without symptoms. The incubation period, the period it takes from initial infection to the appearance of symptoms, for *P. vivax* is 12 to 18 days.
- 6.0 *Plasmodium malaria* (*P. malaria*): Like *P. vivax*, *P. malaria* is also a milder form of the malaria and generally not fatal. However, the infected person still needs treatment because lack of treatment can also lead to a host of health problems. This type of parasite has been known to stay in the blood of some people for several decades. The incubation period for *P. malaria* is 18 to 40 days.
- 7.0 *Plasmodium ovale* (*P. ovale*): With an incubation period of 12 to 18 days, *P. ovale* is also a milder form of the disease and generally not fatal. Even so, a person infected with this type of malaria still needs treatment because it may progress and cause a host of health problems. This parasite, like the two parasites mentioned above, has a liver stage and can remain in the body for years without causing sickness. If the patient is not treated, the liver stage may re-activate and cause relapses after months, or even years without symptoms.

8.0 *Plasmodium falciparum* (*P. falciparum*): This type of malaria, with an incubation period of 9 to 14 days, is the most severe and common type of malaria infection.

Unlike the other types of malaria, *P. falciparum* is deadly if left untreated.

9.0 *Plasmodium knowlesi* (*P. knowlesi*): This type causes malaria in macaques.

However, *P. knowlesi* can also infect humans.

4.1.2 Transmission of malaria

Malaria is transmitted in two ways. Firstly, it is transmitted by a mosquito vector called *Anopheles gambiae*. This mosquito transmits the parasite to a human when it bites the human in order to feed on blood. When the mosquito bites an infected person, a small quantity of the malaria (*plasmodium*) parasite in the blood is taken. After about a week, that same infected mosquito bites another person. The *plasmodium* parasites mix with the mosquito's saliva and are injected into the host (human being) who then becomes infected. Secondly, malaria can be transmitted by human-to-human transmission. The parasite exists in human red blood cells. Therefore, it can be passed on from one person to another through organ transplant, shared use of needles or syringes and blood transfusion. Additionally, a pregnant mother who is infected with malaria can pass it on to her baby during delivery. The malaria transmitted from mother to child is called 'congenital malaria'.

4.1.3 Symptoms of malaria

Symptoms are simply signs that show that someone is infected with malaria. The early stage symptoms of malaria are: a high temperature (fever), chills, headache, sweats

tiredness (fatigue), nausea and vomiting. Other common symptoms may include dry cough, back pain, muscle ache and enlarged spleen. Some people infected with *P. falciparum* may develop complications such as severe anemia, impairment of brain function, impairment of spinal cord function, kidney failure, seizures (fits), loss of consciousness and these symptoms may become fatal.

4.1.4 Prevention of malaria

There are two main ways of preventing malaria. The first type of preventing malaria is by avoiding mosquito bites. This can be achieved either by vector control or by the use of Insecticide-Treated Bed Nets (ITNs). A vector is any organism that carries disease-causing microorganisms from one host to another. Vector control means the reduction of contacts between people and vectors of a disease. In his research paper, vector control refers to the reduction of contacts between people and mosquitoes. One way of significantly reducing malaria incidences and other mosquito-borne diseases is controlling mosquitoes. It is possible to get rid of malaria in a region without necessarily eliminating all the *Anopheles* mosquitoes and this can be achieved by improving people's standards of living, for example, by the installation of screened windows, air conditioning, in order to reduce vector population and contact with people. On the other hand, ITNs can be used to reduce the incidence of malarial infection. If left untreated, however, the effectiveness of nets is significantly reduced because the mosquito can bite the host through the net if the person is sleeping, sitting or standing next to it. It is also said that the tiny holes in the net may be big enough for the mosquito to find a way in. ITNs are much more protective because the insecticide does not only kill the mosquito

but it is also a repellent thereby significantly reducing the likelihood of mosquitoes entering the room or rooms.

The second type of malarial prevention can be achieved by the use of anti-malarial medication. Instead of preventing malaria parasite from entering one's bloodstream, drugs are used to stop it from developing in the blood. The use of drugs to stop the malaria parasite from developing in the blood is known as 'suppression'.

4.1.5 Treatment of malaria

Malaria can be treated by the use of anti-malarial drugs. These drugs can be administered to a malaria patient either orally (use of mouth) or intravenously (injecting the drug directly into the blood). Some of the drugs that are commonly used for the treatment of malaria are: artemisin derivatives, atovaquone-proguanil (Malarone), chloroquine, doxycycline, mefloquine (Lariam), quinine and sulfadoxine-pyrimethamine (Fansidar). Additionally, primaquine is considered to be effective against hypnozoites (the dormant parasite liver forms) and in preventing recurrences or relapses. Nevertheless, primaquine is not supposed to be given to expectant mothers, or patients who are deficient in glucose-6-phosphate dehydrogenase (G6PD), an enzyme that normally protects red blood cells from toxic chemicals.

4.2 Malaria in Africa

As earlier alluded to, the vast majority of malaria cases and deaths occur in Africa South of the Sahara. Of the estimated 300 million acute cases of malaria globally, 60% of these

cases occurs in Africa South of the Sahara. Moreover, about 90% of one million malaria deaths worldwide occur in Africa and mostly in young children. According to RBM's estimations, African children have between 1.6 to 5.4 of malarial fever each year. Children from about four months of age are vulnerable to malaria and about 70% of one-year olds have malaria parasites during the peak transmission season in highly endemic areas. The RBM information sheet number 3 is of a record that malaria is Africa's leading cause of under-five mortality rated at 20%. It constitutes 10% of the continent's overall disease burden. The information sheet further indicates that malaria accounts for 40% of public health expenditure, 30% to of in-patient admissions and about 50% of out-patient visits in areas where there is high malaria transmission.

Africa bears an overwhelming proportion of the malaria burden for several reasons. Firstly, *Plasmodium falciparum*, which is the most severe and life-threatening form of the disease, causes most malaria infections. Africa south of the Sahara is home to the most efficient and deadliest species of the mosquitoes which transmit the disease. The situation is worsened by the lack of infrastructures and resources necessary to mount sustainable campaigns against malaria in many African countries. Consequently, historical efforts to eradicate this killer disease have only benefited few people.

While malaria is understood in Africa as a disease of it is also a cause of poverty. According to economists, malaria is responsible for a growth penalty of up to 1.3% per year in some African countries. The implication is that as the number of years with malaria increases, the gap between the GDP of those countries with malaria and the GDP of those countries without it also increases. There is also a negative correlation

between the rate of malaria cases and Africa's human resource. This disease results in loss of life, lost productivity due to illness and premature death. It also hampers children's schooling and social development as result of absenteeism from school and permanent neurological damage.

4.2.1 The Roll Back Malaria

Having recognized the unacceptable mortality and morbidity from malaria in Africa, the RBM initiative was formed in 1998. The goal of RBM was to halve the malaria burden by 2010. In 2000, the African heads of state and their representatives met in Abuja, Nigeria and committed themselves to translating RBM's goal into tangible results. The Abuja Declaration endorsed a concerted strategy to tackle the problem of malaria across Africa. Since then, more than half of the African countries in which malaria is endemic have established Country Strategic Plans (CSPs) to achieve the goal of RBM and the targets set in Abuja. CSPs are all based on the four technical elements of Roll Back Malaria and the evidence-based interventions associated with them. These elements include prompt access to effective treatment, promotion of ITNs and improved vector control, prevention and management of malaria in pregnancy as well as improving the prevention of, and response to, malaria epidemics and malaria in complex emergencies.

4.2.2 The tools to Roll Back Malaria

The following are some of the evidence-based and cost-effective interventions which could have a significant impact on both morbidity and mortality from malaria:

- Insecticide treated nets (ITNs): according to Snow et al (1999), ITNs have been shown to reduce all-cause mortality among children under the age of five years by about 20%. This results in the prevention of almost 0.5 million deaths each year in Africa south of the Sahara.
- Intermittent preventive treatment (IPT): Intermittent preventive treatment of pregnant women with Sulfadoxine pyrimethamine (SP) is being integrated into the malaria control programmes in some African countries. This treatment reduces the risk of maternal anaemia, placental parasitaemia, and low birth weight. According recent research in Tanzania, treatment of infants with SP at 2, 3 and 9 months of age reduces episodes of clinical malaria by 60% and episodes of severe anaemia by 50%.
- Antimalarial Combination therapy (ACT): this is the combined administration of antimalarial drugs such as SP with artesunate, a derivative of the Chinese plant *Artemisia annua*.

4.2.3 Countervailing factors

Despite the efforts being made to scale up malaria, there are a number of factors that are operating in opposition to these efforts. Among them is lack of awareness of the nature and severity of malaria. Jane Alaii, a health behavioural scientist in western Kenya, is reported by IRIN (2009) to have said that most communities considered malaria as part of everyday life. This situation is made worse by the different ways in which the disease manifests itself leading to misdiagnosis especially with children. This lack of awareness

is partly attributed to the failure of past educational efforts by those working to combat malaria and this has prompted a rethink of existing communication strategies.

4.3 Suggestions

Previous research has made suggestions as to how malaria can be dealt with effectively.

Some of the suggestions are as follows:

- **Local participation:** participation of local people is considered fundamental in the realization of the core strategies of treatment and prevention enshrined in the Abuja Declaration of 2000. Participation promotes receptiveness by building on what people already know. The fight against malaria may never be won without the active collaboration of affected communities.
- **Behaviour change:** malaria prevention strategies are likely to succeed if they are based on behaviour change among affected communities. understanding of the true causes of the disease is required to ensure effective use of ITNs, which form the backbone of prevention tactics. This will help to reduce the knowledge gap between the true causes of malaria and the false preconceptions that some people have.
- **Grassroots education:** In 2003, an assessment of community health education strategies by Radio for Development, a United Kingdom media consultancy was conducted. According to the findings, the top-down, didactic and traditional manner of communicators was found to be problematic. Radio for Development further states that the language of blame prescriptions of good behaviour proved unhelpful. Therefore, conveying messages, for example, about

ITNs – how they must be hung properly, treated at regular intervals and emphasizing that the most vulnerable groups, who are children and pregnant women, be given priority – requires the communication of information in a manner that can be understood at the grassroots. The way in which technical information is disseminated is critical to the up-take of the messages.

- Right social science skills: IRIN (2009) quotes Chris of the African Medical and Research Foundation (AMREF) as saying “there is a shortage of people with the right social science skills, people who know enough about communication techniques...It’s time for more participatory approach.” This approach should focus on local input in the design of culturally appropriate programmes, participation by members of communities in both education and diagnosis and treatment provision as well as on the element of familiar languages and means of communication.

Most researchers and activists are of the view that unless communication and education strategies uniformly emphasize participation, malaria will remain a silent killer. This silence can only be broken by engaging those living in the most affected areas, the most vulnerable, in a manner that will make the nature and severity of malaria more widely known so that it can be effectively eliminated.

4.4 Malaria in Zambia

Research shows that malaria is a big problem in Zambia. It accounts for nearly four million clinically diagnosed cases and fifty thousand deaths per year. It is responsible for 36% of hospitalizations and 20% of maternal mortality. Consequently, the fight against

malaria is a national health priority in Zambia. Through the National Malaria Strategic Plan 2006-2010, Government of Zambia is committed to increase coverage of key malaria control interventions. A six-year national strategic plan has been implemented by the Zambian Ministry of Health (MoH) to reduce malaria incidence by 75% by 2012. It intends to achieve this through nationwide coverage of the core malaria interventions. The four core interventions are:

- Use of ITNs.
- Indoor residual spraying (IRS).
- Prompt effective case management.
- Intermittent preventive treatment during pregnancy (IPTp).

The Zambia Demographic and Health Survey (2001-2002) show that Zambia has already achieved national targets for IRS and RBM Abuja targets for IPTp of halving the malaria burden by 2010.

4.4.1 Malaria Indicator Survey

Zambia conducted a Malaria Indicator Survey (MIS) in May and June 2006. This survey showed that significant progress had been made with regard to national malaria programme coverage goals. It also identified actions considered critical to achieving impact.

4.4.2 Methodology

The MIS, developed by RBM Monitoring and Evaluation Reference Group provided standardized household survey methods, questionnaires and materials. Three thousand randomly selected households were surveyed in all the provinces. Field teams used standardized questionnaires already programmed on to hand-held personal digital assistants to facilitate the entry, extraction and analysis of data. Survey subjects were made to answer questions and they were also tested for malaria parasites and anaemia.

4.4.3 Findings

The MIS indicated that the coverage rate for ITNs was 44%. It was found that the use of ITNs or IRS had a positive impact especially on children. Children in households with ITNs had approximately 38% less fever illness, 51% less malaria infection and 56% less severe anaemia than those in households without ITNs or IRS. However, the study showed that ITN usage rates were still low. Among households with at least one ITN in 2006, less than 50% of children under the age of six years slept under the ITN the night preceding the survey.

The MIS also showed that more than 60% of pregnant women in Zambia were already receiving at least two doses of IPTp. However, only 34% of targeted households were sprayed, with some areas reaching 77%. The survey further indicated that about 58% of febrile children were treated with an antimalarial drug and 13% received ACT within 24 hours of onset of illness in 2006.

One of the most significant lessons from the 2006 MIS is that ITN coverage does not guarantee use. The MIS (2006) states, “Behaviour change communication is an intense area of focus. Educating mothers, engaging community leaders, and accompanying net distribution campaigns with public information are central to ensuring that those most vulnerable to malaria are protected.” This has not yet been achieved as many studies show that there is lack of awareness about the nature and severity of malaria in Zambia. For example, Hamwaka (2007), in his study of the communication strategies used by National Aids Council (NAC) to combat HIV and AIDS, found that malaria was among the problems that were considered to be of less concern in the communities. Therefore, there is need for concerted efforts to eradicate malaria in Zambia through effective communication strategies.

CHAPTER FIVE: DATA ANALYSIS AND PRESENTATION OF FINDINGS

5.0 Introduction

This chapter deals with the analysis and presentation findings obtained from the study which was conducted in Luangwa District. The sample consisted of ninety four (94) respondents. Of these respondents, 48.9 percent were male while 51.1 percent were female. Their educational characteristics were as follows: 59.6 percent had attained primary education, 26.6 percent had attained junior secondary education, 7.4 percent had attained senior secondary education while 6.4 percent said they had never been to formal school. The two tables below summarise the sex and education composition of the sample respectively.

Table 1: Sex

Sex	Frequency	Percent	Valid Percent	Cumulative Percent
male	46	48.9	48.9	48.9
female	48	51.1	51.1	100.0
Total	94	100.0	100.0	

Table 2: Highest education level attained

Highest education level attained	Frequency	Percent	Valid Percent	Cumulative Percent
primary	56	59.6	59.6	59.6
junior secondary	25	26.6	26.6	86.2
senior secondary	7	7.4	7.4	93.6

Never been to formal school	6	6.4	6.4	100.0
Total	94	100.0	100.0	

5.1 Source of information about malaria

The respondents were asked about their sources of information about malaria in order to ascertain that the research was actually conducted within the SFH catchment area. 29.8 percent said from the clinic, 56.4 percent said from SFH, 1.1 percent said from DHMT, 1.1 percent said from Primary Health Unit, 2.1 percent said from neighbours, 1.1 percent said from Child Fund while 8.5 percent did not give any source.

Table 3: Where do you get information about the disease?

Source of information	Frequency	Percent	Valid Percent	Cumulative Percent
Clinic	28	29.8	29.8	29.8
SFH	53	56.4	56.4	86.2
DHMT	1	1.1	1.1	87.2
Primary Health Unit	1	1.1	1.1	88.3
Neighbours	2	2.1	2.1	90.4
Child Fund	1	1.1	1.1	91.5
No where	8	8.5	8.5	100.0
Total	94	100.0	100.0	

5.2 Knowledge level

Respondents were asked what caused malaria. Of all of asked, 92.6 percent said it was a mosquito, 2.1 percent said it was rain, 1.1 percent said it was due to a yard that was not slashed, 1.1 percent said it was weather while 3.2 percent said they did not know. This information is summarised in the following table.

Table 4: What causes malaria?

Perceived cause of malaria	Frequency	Percent	Valid Percent	Cumulative Percent
Mosquito	87	92.6	92.6	92.6
rain	2	2.1	2.1	94.7
When the yard is not slashed	1	1.1	1.1	95.7
Weather	1	1.1	1.1	96.8
I do not know	3	3.2	3.2	100.0
Total	94	100.0	100.0	

When
asked
during
which

season one is most likely to suffer from malaria, 11.7 percent chose the cold season, 4.3 percent chose the dry season, 77.7 percent chose the wet season, 2.1 percent chose the cold season while 4.3 percent said it was all year round.

Table 5: In Zambia, during which season is one most likely to suffer from malaria?

Season	Frequency	Percent	Valid Percent	Cumulative Percent
Cold season	11	11.7	11.7	11.7
Dry season	4	4.3	4.3	16.0
Wet season	73	77.7	77.7	93.6
Cold and wet season	2	2.1	2.1	95.7
All year round	4	4.3	4.3	100.0
Total	94	100.0	100.0	

Asked why one is likely to suffer from malaria in the season, 2.1 percent chose the cold season because it is very cold, 1.1 percent chose the cold season because there are plenty of mosquitoes, 5.3 percent chose the cold season because of bad weather, 5.3 percent chose the dry season because it is very hot, 25.5 percent chose the wet season because there is plenty of stagnant water which provides a breeding ground for mosquitoes, 1.1 percent chose the wet season because of stagnant water and mud which

promote mosquito breeding, 8.5 chose the wet season because of stagnant water and grass which promote mosquito breeding, 4.3 percent chose the wet season because mosquitoes are found in water, 30.9 percent chose the season because that is when there are a lot of mosquitoes, 1.1 percent chose the wet season because of drinking stagnant water, 3.2 percent chose the wet season because of drinking dirt water, 1.1 percent chose the wet season because of flies that sit on uncovered food, 1.1 percent chose the wet season because of mud, 1.1 percent chose the wet season because it is very cold, 1.1 percent chose the wet season because that is when mosquitoes become active, 1.1 percent chose the wet and cold seasons because of exposure to mosquitoes, 4.3 percent did not know the reason why one is most likely to suffer from malaria in the season they had chosen while 2.1 percent said that malaria was brought by God. Table 3 is a summary of this information.

Table 6: Why is one likely to suffer from the disease the season that you have chosen?

Season and justification	Frequency	Percent	Valid Percent	Cumulative Percent
Cold season - it is very cold.	2	2.1	2.1	2.1
Cold season - bad weather	5	5.3	5.3	7.4
Dry season - it is very hot	5	5.3	5.3	12.8
Wet season - stagnant water promotes mosquito breeding.	24	25.5	25.5	38.3
Wet season - water and mud promote mosquito breeding	1	1.1	1.1	39.4
Wet season - stagnant water/grass promote mosquito breeding.	8	8.5	8.5	47.9

Wet season - mosquitoes are found in water.	4	4.3	4.3	52.1
Wet season - there are a lot of mosquitoes.	29	30.9	30.9	83.0
Reason not known.	4	4.3	4.3	87.2
Wet season - drinking stagnant water	1	1.1	1.1	88.3
Wet season - drinking dirt water	3	3.2	3.2	91.5
It is brought by God	2	2.1	2.1	93.6
Wet season - flies that sit on uncovered food	1	1.1	1.1	94.7
Cold and wet season - exposure to mosquitoes	1	1.1	1.1	95.7
Cold season- there are a lot of mosquitoes	1	1.1	1.1	96.8
Wet season- there is mud	1	1.1	1.1	97.9
Wet season - it is cold	1	1.1	1.1	98.9
Wet season - mosquitoes become active	1	1.1	1.1	100.0
Total	94	100.0	100.0	

Respondents were also asked about what could be done to prevent malaria and the answers were as summarized in table 4. 77.7 percent of the respondents said by sleeping under a mosquito net, 4.3 percent said by burying pools of water, 1.1 percent said by sensitizing people on malaria prevention, 4.3 said by Cleaning surroundings, sleeping under a mosquito net and spraying people's homes, 1.1 said by keeping a clean yard and not eating dirty food, another 1.1 percent said by covering themselves properly when sleeping, 2.1 percent said by going to the clinic, 1.1 percent said by avoiding mosquito bites while 7.4 percent did not know how malaria could be prevented.

Table 7: What do you think can be done to prevent malaria?

How to prevent malaria	Frequency	Percent	Valid Percent	Cumulative Percent
Sleeping under a mosquito net	73	77.7	77.7	77.7
Burying pools of water	4	4.3	4.3	81.9
Through sensitisation on malaria prevention	1	1.1	1.1	83.0
Cleaning surroundings, sleeping under a mosquito net and spraying people's homes	4	4.3	4.3	87.2
Keeping a clean yard and not eating dirt food	1	1.1	1.1	88.3
Covering ourselves properly when sleeping	1	1.1	1.1	89.4
Going to the clinic	2	2.1	2.1	91.5
8.00 I do not know	7	7.4	7.4	98.9
Avoiding mosquito bites	1	1.1	1.1	100.0
Total	94	100.0	100.0	

Respondents were further asked whether they believed that slashing around their homes and burying pools of water could help to reduce the malaria incidence, 96.8 percent said yes while 3.2 percent said no.

5.3 Attitude level

With regard to malaria prevention, 96.8 percent believed that slashing around their homes and burying pools of water could help to reduce the malaria incidence while 3.2 percent did not believe that these two measures could reduce the malaria incidence.

Table 8: Do you believe that slashing around your homes and burying pools of water can help to reduce the malaria incidence?

Do you believe	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	91	96.8	96.8	96.8
No	3	3.2	3.2	100.0
Total	94	100.0	100.0	

When asked which disease was the most serious (in terms of the number of people it kills in Zambia) among HIV and AIDS, malaria and Tuberculosis, 8.5 percent chose HIV and AIDS, 39.4 percent chose malaria while 2.1 percent chose Tuberculosis.

Table 9: Of the three diseases listed below, which one do you consider most serious in terms of the number of people it kills in Zambia?

Diseases	Frequency	Percent	Valid Percent	Cumulative Percent
HIV and AIDS	55	58.5	58.5	58.5
Malaria	37	39.4	39.4	97.9
Tuberculosis	2	2.1	2.1	100.0
Total	94	100.0	100.0	

5.4 Practice level

Regarding participation of people at the grassroot level in the fight against malaria, the responses were as follows: 31.9 percent said they had participated by slashing their yards and burying pools of water in their surroundings, 13.8 percent said they had participated by teaching others about the dangers of malaria and encouraging them to sleep under a mosquito net, 3.2 percent said they had participated by keeping a clean environment while 51.1 percent had not participated in any way.

Table 10: How have you participated in the fight against malaria?

Participation	Frequency	Percent	Valid Percent	Cumulative Percent
By slashing around the yard and burying pools of water.	30	31.9	31.9	31.9
By teaching others about the dangers of malaria...	13	13.8	13.8	45.7
Keeping a clean environment	3	3.2	3.2	48.9
Not participated in any way.	48	51.1	51.1	100.0
Total	94	100.0	100.0	

With regard to sleeping under a mosquito net, 92.6 percent said they slept under a mosquito net while 7.4 percent said they did not. Asked how often they slept under a mosquito net, 1.1 percent said five nights a week, 91. percent said every night (seven days a week) while 7.4 percent said the did not sleep under a mosquito net at all.

Table 11: At least how many nights in a week do you sleep under a mosquito net?

Number of nights in a week	Frequency	Percent	Valid Percent	Cumulative Percent
Five nights	1	1.1	1.1	1.1
Every night	86	91.5	91.5	92.6
Never	7	7.4	7.4	100.0
Total	94	100.0	100.0	

Respondents were further asked whether they had slept under a mosquito net the night before the survey, 84 percent said they had while 16 percent said they had not.

Table 12: Did you sleep under an insecticide treated net last night?

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	79	84.0	84.0	84.0
No	15	16.0	16.0	100.0
Total	94	100.0	100.0	

5.5 Media

With regard to the media through which respondents received information about malaria, 30.9 percent mentioned radio, 5.3 percent said through television, 1.1 percent said through newspaper, 48.9 percent said they received information about malaria by word of mouth, 1.1 percent said both through brochures and word of mouth, 1.1 percent said through posters, 1.1 percent said through brochures, 1.1 percent said through booklets while 9.6 percent did not cite any media.

Table 13: From which media do you get information about malaria?

Type of media	Frequency	Percent	Valid Percent	Cumulative Percent
Radio	29	30.9	30.9	30.9
Television	5	5.3	5.3	36.2
Newspaper	1	1.1	1.1	37.2
Word of mouth	46	48.9	48.9	86.2
Brochure and word of mouth	1	1.1	1.1	90.4
Posters	1	1.1	1.1	87.2
Brochures	1	1.1	1.1	88.3
Booklets	1	1.1	1.1	89.4
Not applicable	9	9.6	9.6	100.0
Total	94	100.0	100.0	

5.6 Strategies and techniques used and people's participation in SFH malaria control intervention in Luangwa District

From the in-depth interviews as well as the review of reports (cal summary forms) written by community health workers, it was revealed that Society for Family Health used the following strategies and techniques in fighting malaria in Luangwa: door to door sensitization, health talks, drama shows and special events. SFH employed outreach workers, drama groups and mobile video units to sensitize populations regarding its products and services. Drama groups were used to inform and educate people on malaria transmission, prevention and use of ITNs. Drama and giving of prizes for right answers was reported to have had a impact on people in the catchment area thereby leading to behaviour change. For instance, it was observed that people, who previously did not know how to hang ITNs in their homes, were now able to do it on their own.

Further more, people at the grassroot level were said have been involved in SFH malaria control programmes. The whole district had only one coordinator employed by SFH. Since the district is big, the coordinator divided it into zones which were a combination of a number of villages. Forty nine community health workers (CHW) from these zones were contracted to work hand in hand and under the supervision of the SFH malaria coordinator. These workers were further assisted by health committees comprising ten (10) members. That way, the coordinator could communicate easily and in a short period of time to all community members by giving information to community health workers who in turn would pass it on to their fellow

community members in their respective zones and villages. These CHWs were trained to educate people on malaria transmission and prevention and promote the use of ITNs in their localities.

The involvement community members in malaria control programmes was explained in terms of participation in events such as bicycle races and cross country activities organized as a way of fighting malaria at the end of which successful participants were awarded. However, it was noted that people's participation was limited. Their participation was only evident at the implementation stage. For example, CHWs participated by conducting door to door sensitization on malaria prevention and treatment, distributing ITNs obtained from the Malaria Coordinator's office and teaching their fellow community members how to mend broken nets.

The local people were not involved, for example, in making malaria messages and producing communication media for the campaign against malaria. Even the print media that were used to disseminate messages about malaria were imported from SFH headquarters in Lusaka. It was further revealed that at the beginning of the project, these imported materials were in fact written in English. However, cards written in *Nyanja* were later used following peoples' feedback that the ones written in English were difficult to understand. The interviews also revealed that the *Nyanja* version was a product of a pilot study conducted in Nyimba. Even so, the data used to make malaria messages was said to have been obtained from the local people.

CHAPTER SIX: INTERPRETATION OF DATA

6.1 Strengths in the SFH Luangwa malaria control programme

6.1.1 Knowledge about malaria was successfully increased

The SFH malaria control programme Luangwa District has done very well in increasing people's knowledge about malaria in terms of its causes and prevention. For example, 93 percent of the respondents knew that malaria is caused by a mosquito. Furthermore, about 87 percent mentioned at least one way of preventing malaria such as sleeping under a mosquito net, cleaning surroundings and burying pools of water. This is a good indicator that we are on the path to malaria eradication.

6.1.2 Preventive measures were effectively communicated

The programme also managed to make people believe that slashing around their homes and burying pools of water can help to reduce the malaria incidence as shown by the findings in which about 97 percent believed that the two abovementioned actions can help to reduce the malaria incidence.

6.1.3 Both channels were used

Another strength in the use of communication strategies to fight malaria in Luangwa District is that both interpersonal and mass communication channels were used. Regarding mass media channels, the radio particularly stood out as the channel which was used frequently to increase people's knowledge about malaria. When asked from

which media respondents got information about malaria, 30.9 percent cited radio. The radio is an appropriate channel of communication in a community where there is no electricity because it can easily be maintained by cells. The research, however, did not establish whether the radio programmes on malaria were aired at appropriate times.

Among other channels of communication, word - of - mouth communication was effectively used as an interpersonal channel of communication. About 49 percent of the respondents said they had received information about malaria by word-of-mouth communication. This was done by employing community health workers who then conducted door-to-door sensitization on malaria prevention. Word-of-mouth communication is undoubtedly effective in persuasion as it provides for two-way interaction and feedback. About 97 percent of respondents believed that slashing their yards and burying pools of water could help to reduce malaria incidence. This figure can be attributed to the effective use of interpersonal channels of communication.

6.1.4 Most of the people were actually sleeping under ITNs

On the level of practice, the Luangwa malaria intervention had done extremely well in getting people to sleep under ITNs. For example, about 92 percent said they slept under a mosquito net every night and 84 percent said they had actually slept under a mosquito net the night before the interview. This is an indication that people are actually engaging in practices that help prevent malaria, a step which is critical to the fight against malaria.

It is expected that not all people can begin using ITNs at the same time. According to Rodgers (1983), a social system comprises many adopter categories which include innovators, early adopters, early majority, late majority and laggards. Each of these categories adopts innovations at varied intervals with innovators being the first to adopt and the laggards being the last. The Luangwa District community can also be looked at as a social system composed of five adopter categories in which some have already adopted while others have not yet done so. The important thing to do is continuous communication of the innovation (ITN) so that even those who are slow at adopting it will one day realize the importance of using this innovation to kick out malaria from the community.

6.2 Drawbacks in the Luangwa malaria control programme

6.2.1 There were still signs of lack of knowledge among some people

Some people still do not know what the cause of malaria is despite the fact that this disease has been around for a very long time. For example, about 7 percent did not know what causes malaria and about 30 percent did not know how to understand why one is most likely to suffer from malaria in the wet season. Worse still, others did not even know that cases of malaria increase in the wet season. Some people associated malaria with conditions such as coldness, bad weather, hotness, drinking dirt water, eating dirt food and even God. In addition to lack of knowledge about the cause of malaria, research revealed that about 11 percent did not know what could be done to prevent malaria.

Such lack of information is unacceptable in an area which is badly affected by malaria and in which sensitization had been going on for about five years. It should be realized that one's perceived susceptibility to and seriousness of a disease is influenced by information. So, if some people remain ignorant about malaria, their perception of the severity of malaria will remain low and this may have a negative impact on their adoption of preventive measures. As long as some people remain ignorant about the causes of this killer disease, we shall not succeed in eradicating it.

6.2.2 Most people wrongly perceived the severity of malaria

Despite efforts to fight malaria in Luangwa District, the findings clearly indicate that the majority do not consider malaria to be a very serious disease in terms of the number of people it kills. About 59 percent still consider HIV and AIDS to be the most serious disease in Zambia and only about 39 percent consider malaria to be the most serious disease. This could be one of the reasons why malaria continues to be a serious problem despite the attention that it receives.

The interpretation of these results is that the communication strategies and techniques used have concentrated on raising knowledge levels about the cause of malaria and its prevention and persuading people to use ITNs. The social marketing strategy has been used effectively to create demand among the target adopters in order to ensure that ITNs are adopted. One could say that the communication strategies and techniques used have been successful only at the level of knowledge and practice. However, communication to change people's attitude towards this silent killer had not been very successful and the

true nature of the seriousness of malaria in Zambia has not successfully been communicated.

This is a serious problem because as long as the majority considers malaria not to be very serious, this disease will not be fought with the aggressiveness that it deserves. People can have knowledge of what causes malaria, how it can be prevented and even engage in preventive acts due to other external cues but as long as they look at it as just one of the many diseases that people must endure, eradication of the disease may never be achieved. Campaigns that do not succeed in making people believe that malaria is the most serious disease in Zambia will not be effective and will not achieve sustainability in ITN use.

Wrong perception of the true severity of malaria in a community where ITNs are given free of charge is a drawback. There is doubt that people will actually buy new nets when those nets that they were given have worn out and the free distributors have pulled out of the area.

Concerning people's perception of the severity of malaria, there is a lot that needs to be done. There is need to interrogate people's ideas and beliefs and create a dissonance in the minds of those who do not regard malaria as a very serious disease. The dissonance can be created by giving the figures of people who die of malaria in Zambia. When evidence is provided about the seriousness of malaria, it may force individuals to begin interrogating their individual ideas and beliefs about malaria. The dissonance created in their minds will push them to solve the cognitive inconsistency by changing their beliefs

and adapting them to new evidence. Eventually they will come to believe that malaria is in fact the most serious disease in Zambia.

Hochbaum's Health Belief model holds the view that the likelihood that a person will follow a preventive behaviour is influenced by their subjective weighing of the costs and benefits of the action. As the findings show that most of the people do not perceive malaria to be very serious, they might not pay attention to its severity, that is, its clinical consequences which include disability, pain or death, its impact on their life style which include their working ability, social relationships and other factors. Consequently, their use of ITNs, which have been given to them freely, may not be sustained once the change agents (SFH) pull out.

6.2.3 The malaria control programme was mostly carried out on a non-participatory basis

For example, findings have shown that the potential adopters did not participate in making understandable messages were disseminated in Luangwa District. Instead, the messages used to educate people on the dangers of malaria were brought into the social system from outside. This could partly account for the reasons why most people said they did not participate in any way in the fight against malaria. As a result, the campaign created dependence and this may not sustain beneficial action. Because according to Rahim in White *et al* (1994), as the individual and groups become more informed and involved in development, their consciousness about their distinctive roles and rights, and the stakes of change sharpens. For as target adopters are not

involved in important activities such as message making, they will remain ignorant about their distinctive roles in fighting this killer disease.

6.2.4 Some of the messages used were too difficult to be understood

As a consequence of lack of the target adopter participation in making malaria messages, target adopters found some messages too difficult to understand. Instead of using small, simple, common, everyday used words, English literature found its way into a community which was mainly composed of people whose education background made it very difficult to understand English. This was evident in some of the reports where people complained about the material being written in English and hence being difficult to understand. Even when the Nyanja literature was introduced into the system, some of the words used were not the common, everyday used words in the Luangwa District community especially the villages. For example, the noun *udzuzu* was consistently used to mean a mosquito. On the other hand, Luangwa has a good number of Nsengas and Chikundas in which a mosquito is called *imbu* and *mbudu* respectively. Such omissions can compromise the quality of communication in malaria campaign programmes.

6.3 Conclusion

The SFH malaria control programme Luangwa District has done well in some areas and badly in others. It has managed in increasing people's knowledge about the cause and prevention of malaria. Both channels were used in educating people on malaria and persuading them to sleeping under ITNs. However, more work needs to be done to make people aware that malaria is the most serious disease in Zambia so that ensure they

develop appropriate attitudes to this killer disease and perhaps work hard to eradicate it. Additionally, there is need to ensure that malaria control programmes are conducted on a participatory basis to sustain beneficial, adapt to local circumstances and create independence among target adopters.

CHAPTER SEVEN: GENERAL CONCLUSION AND RECOMMENDATIONS

7.0 Introduction

Chapter seven is the last chapter of this report. This chapter is divided into two parts. The first part deals with the general conclusion while the second part comprises recommendations derived from the findings.

7.1 General conclusion

Seeing the severity of malaria in Zambia, as evidenced by research, governmental and non-governmental organizations have embarked on combating killer disease. In this fight, communication plays a pivotal role in ensuring people receive correct knowledge, acquire right attitudes and engage in appropriate practices to fight malaria.

Therefore, the researcher embarked on the examination the communication strategies and techniques used by Society for Family Health (SFH) in the fight against malaria in Luangwa District. The findings indicate that the SFH intervention utilised both interpersonal and mass communication channels to disseminate information about malaria and persuade people to use ITNs. The findings that there was success in raising people's knowledge about the cause and prevention of malaria. Moreover, ITNs were distributed by the organisation and people reported to be using them.

Unfortunately, some people still lack information about the cause and prevention of malaria. This was evident as some people associated malaria with conditions such as

coldness, bad weather, hotness, drinking dirt water, eating dirt food and even God. These myths paralyse effort to combat malaria because who attribute malaria to any of these conditions feel incapacitated as nothing be done to change them. For example, if malaria is caused by bad weather or God, nothing can be done about it.

Worse still, most of the people do not consider malaria to be a very serious disease. To them, malaria is just one of the many diseases that torment humanity, something that must be accepted as ‘normal’. Instead, the majority consider HIV and AIDS to kill more people than any other disease. This partly accounts for the reason why malaria continues to be a serious problem despite the efforts being made to scale it down.

Therefore, the fight against malaria should be a continuous process to ensure that more information is disseminated. An understanding of the true causes of the disease is necessary to ensure effective and sustained use of ITNs, which form the backbone of prevention tactics. This is critical to the reduction of the knowledge gap between the true causes of malaria and the false preconceptions that so people still have. Correct knowledge may slowly translate into the formation of right attitudes which will, in turn lead to consistent use of ITNs and ultimately into the eradication of this killer disease. Furthermore, the top-down, didactic and traditional manner of sending malaria messages must be replaced with participation of local people in the realization of the core strategies of malaria prevention.

7.2 RECOMMENDATIONS

Based on the findings of this report that have been presented in the previous chapters, the following recommendations deserve attention:

It is recommended that there should be continuous sensitization on the cause and prevention of malaria to achieve the 100% knowledge level. Education should include knowledge of the causal links among stagnant water or grass, mosquitoes and malaria. In this way, people will not only know that mosquitoes cause malaria but also that stagnant water and grass provide breeding grounds for these mosquitoes. Education should enable them to realize that every time they allow the presence of stagnant water and grass around their homes, they are encouraging mosquito breeding and consequently encouraging malaria transmission in their residences.

It is also recommended that communication strategies and techniques in malaria prevention programmes concentrate on changing people's attitudes towards malaria in terms of its severity. People need to be convinced that contrary to what they think, malaria is the most serious disease in Zambia and hence there is urgent need for concerted efforts to fight it. This may be achieved by giving the figures of people who die of malaria in Zambia every year. Moreover, people should be made aware of the clinical consequences of malaria such as disability, pain or death, and its impact on life style which includes reducing one's working ability, financial costs to treat a child, wife or husband suffering from malaria and other factors. The believability and

persuasiveness of these messages may be increased by using health personnel such as doctors, clinical assistants and nurses.

Another recommendation is that malaria control agents should ensure that people at the grassroots participate fully in the fight against malaria. Their participation should begin from message making, dissemination right through to evaluation of the impact of these messages. This will sharpen their distinctive roles in fighting this killer disease, increase in them a feeling of ownership of malaria control programmes, reduce dependence and sustain beneficial action.

It is also recommended that the messages used in malaria control programmes should be readily intelligible to the target audience. Intelligibility can be achieved by using small, simple, common, everyday used words and this applies to any language in which the messages are written. To achieve this, there is need to acquire full knowledge of the target audience and then segment it so that appropriate messages are sent to appropriate segments. When making malaria messages, attention should be given to the linguistic characteristics of the target audience in order to put these messages in a language that they will easily understand. It is important to realize that education levels in Zambia are still very low and so English is usually not the best language to use. Even when it is used, it should be as simple as possible.

Finally, it is recommended that NGOs involved in malaria control programmes should persuade government to incorporate malaria lessons into the school curriculum so that the dangers of this killer disease can be inculcated in people from their earliest stages of

development. This will close the malaria knowledge gap that has been created by NGO absence in some areas. Malaria, just like HIV and AIDS, should be a topic of interest from primary education through to tertiary education. this way, teachers, whose presence is guaranteed throughout the country, will play a significant role in combating this silent killer.

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APPENDICES

APPENDIX I

QUESTIONNAIRE (SFH employees)

This questionnaire is designed to gather information from Society for Family Health employees about SFH malaria prevention programmes.

PERSONAL INFORMATION

Residence:_____ Occupation_____

Sex: 1. Male [] 2. Female []

Age: 1. 10 – 19 years [] 2. 20 – 29 years [] 3. 30 – 39 years []
4. 40 – 49 years [] 5. 50 – 59 years [] 6. 60 – 69 years []
7. 70 – 79 years [] 8. 80 years and above []

Highest educational level attained:

1. Primary [] 2. Junior Secondary [] 3. Senior Secondary []
4. College [] 5. University []

Income per month

1. Below K1, 000, 000 [] 2. K1, 000, 000 – K1,999, 000 []
3. K2, 000, 000 – K2, 999, 000 [] 4. K3, 000, 000 – K3,999, 000 []
5. K4, 000, 000 – K4, 999, 000 [] 6. K5, 000, 000 and above []

(1) Being an employee of SFH, are you also involved in the fight against malaria?

1. Yes [] 2. No []

(2) How have you participated in the fight against malaria? _____

(3) At which level are you involved in malaria control programmes?

1. Programme design [] 2. Programme implementation []
3. Monitoring and evaluation [] 4. All the first three []
5. Not involved [] 6. Other []

If other, specify _____

(4) Does the carrying out of your tasks involve people at the grassroots?

1. Yes [] 2. No []

If yes, specify _____

(5) What communication strategies and techniques used by SFH in fighting malaria do you know? _____

(6) Do you know anything about participatory communication?

1. Yes [] 2. No []

If yes, what do you know about it? _____

(7) Who designs messages about malaria that are disseminated by SFH?

1. Malaria Programmes Operations Manager [] 2. Malaria Coordinator []
3. Target group members [] 4. Other []

If other, specify _____

(8) Have you personally ever been involved in designing messages about malaria prevention?

1. Yes []

2. No []

(9) Have you ever participated in the production of materials (such as brochures) that are used to disseminate information about malaria?

1. Yes []

2. No []

If yes, specify _____

***End of interviews.
Thank you for your time and cooperation.***

APPENDIX II

IN-DEPTH INTERVIEW GUIDE FOR SFH EMPLOYEES

This is an interview guide to help gather data about people's knowledge, attitudes and practices with regard to malaria prevention.

KNOWLEDGE

1. Do you know anything about malaria?
2. What causes malaria?
3. How can this disease be prevented?
4. Where do you get information about the disease?
5. From which media do you get information about malaria?
6. In Zambia, during which season is one most likely to suffer from malaria?
7. Why is one likely to suffer from the disease in the season that you have mentioned?
8. Which organisation(s) is committed to the fight against malaria in your area? How does the organisation you mentioned promote the fight against malaria in your area?

ATTITUDES

1. Which one do you think is the most serious disease in Zambia and why?
2. Do you believe that slashing around our homes and burying pools of water can help to reduce the malaria incidence?
3. There is an exercise called in-door residual spraying (IRS) in which agents from Malaria Control Board go round to spray people's homes. What do you think about it?

PRACTICES

1. Have you ever participated in SFH programmes designed to fight malaria? If yes, How? If no, do you know any person in your area who has participated in any of

these programmes?

2. What do you do personally to prevent yourself from malaria?
3. Do you sleep under a mosquito net every night? If yes, how often? If no, why?
4. When was your home last sprayed?

End of interviews.

Thank you for your time and cooperation.

APPENDIX III

QUESTIONNAIRE

This questionnaire is designed to gather information about people's knowledge, attitudes and practices with regard to malaria control in Luangwa District.

PERSONAL INFORMATION

Residence: _____ Occupation _____

Sex: 1. Male [] 2. Female []

Age: 1. 10 – 19 years [] 2. 20 – 29 years [] 3. 30 – 39 years []
4. 40 – 49 years [] 5. 50 – 59 years [] 6. 60 – 69 years []
7. 70 – 79 years [] 8. 80 years and above []

Highest educational level attained:

1. Primary [] 2. Junior Secondary [] 3. Senior Secondary []
4. College [] 5. University []

Income per month

1. Below K1, 000, 000 [] 2. K1, 000, 000 – K1, 999, 000 []
3. K2, 000, 000 – K2, 999, 000 [] 4. K3, 000, 000 – K3, 999, 000 []
5. K4, 000, 000 – K4, 999, 000 [] 6. K5, 000, 000 and above []

(1) Do you know anything about a disease called malaria?

1. Yes [] 2. No []

(2) What causes this disease?

1. Mosquito [] 2. Rain [] 3. Unripe sugarcane [] 4. Other []

If other, specify _____

(3) Where do you get information about the disease?

1. Luangwa district hospital [] 2. Society for Family Health []
3. Other [] If other, specify_____

(4) From which media do you get information about malaria?

1. Radio [] 2. Television []
3. Newspaper [] 4. Other []

If other specify_____

(5) What do you think can be done to prevent this disease?

(6) Of the three diseases listed below, which one do you consider most serious in terms of the number of people it kills in Zambia?

1. HIV and AIDS [] 2. Malaria [] 3. Tuberculosis []

(7) In Zambia, during which season is one most likely to suffer from malaria?

1. Cold season [] 2. Dry season [] 3. Wet season []

(8) Why is one likely to suffer from the disease in the season that you have chosen in question 6? _____

(9) Do you believe that slashing around our homes and burying pools of water can help to reduce the malaria incidence?

1. Yes [] 2. No []

(10). Name any organisation that is committed to the fight against malaria in your area: _____

(11). How does the organisation you mentioned in question 14 promote the fight against malaria in your area? _____

(12). How have you participated in the fight against malaria?

(13). There is an exercise called in-door residual spraying (IRS) in which a group of people goes round to spray people's homes. What do you think about it?

(14). When was your home last sprayed?

1. More than two years ago [] . Two years ago []

3. One year ago [] 4. This year []

5. Never []

If never, specify?

(15). At least how many nights in a week do you sleep under a mosquito net?

1. Once [] 2. Twice [] 3. Thrice []

4. Four times [] 5. Five times [] 6. Six times []

7. Every night [] 8. Never []

If never, explain _____

(16). Did you sleep under an insecticide treated net last night?

1. Yes [] 2. No []

***End of interviews.
Thank you for your time and cooperation.***

APPENDIX IV

CODING SHEET (Luangwa respondents)

Residence ?

Occupation ?

Age ?

1. 10 – 19 years	2. 20 – 29 years	3. 30 – 39 years
4. 40 – 49 years	5. 50 – 59 years	6. 60 – 69 years
7. 70 – 79 years	8. 80 years and above	

Highest educational level attained

?

1. Primary	2. Junior Secondary	3. Senior Secondary
4. College	5. University	8. No formal education

Income per month

?

1. Below K1, 000, 000	2. 000, 000 – K1, 999, 000
3. K2, 000, 000 – K2, 999, 000	4. K3, 000, 000 – K3, 999, 000
5. K4, 000, 000 – K4, 999, 000	6. K5, 000, 000 and above

Question 1. ?

1. Yes	2. No
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Question 2. ?

1. Mosquito	2. Rain	3. Unripe sugarcane
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Question 3. ?

1. Clinic	2. Society for Family Health	3. DHMT
4. Primary Health Unit	5. Neighbours	8. No where

Question 4. ?

1. Radio	2. Television	3. Newspaper
4. Word of mouth		Not applicable

Question 5. ?

1. Sleeping under a mosquito net	2. Burying pools of water
	8. I do not know

Question 6. ?

1. HIV and AIDS	2. Malaria	3. Tuberculosis
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Question 7. ?

1. Cold season	2. Dry season	3. Wet season	4. All the time
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Question 8. ?

1. One is most likely to suffer from malaria in the cold season because it is very cold

2. One is most likely to suffer from malaria in the dry season because it

becomes very hot

3. One is most likely to suffer from malaria in the wet season because there is plenty of stagnant water which provides a breeding ground for mosquitoes
4. One is most likely to suffer from malaria in the wet season because of stagnant water and mud which promote mosquito breeding
5. One is most likely to suffer from malaria in the wet season because of stagnant water and grass which promote mosquito breeding
6. One is most likely to suffer from malaria in the wet season because mosquitoes are found in water
7. One is most likely to suffer from malaria in the wet season because that is when there are a lot of mosquitoes
- 8 Reason not known as to why one is most likely to suffer from malaria in the chosen season in question 7.

Question 9. ? 1. Yes 2. No

Question 10. ? 1. Society for Family Health 2. Child Fund 3. CHAZ 4. HCP
5. Family Health Trust 6. Name of organization forgotten
7. Clinic 8. No organization known

Question 11. ? 1. Through education on malaria prevention and treatment
2. Through education on malaria prevention and treatment and distribution of mosquito nets
3. By providing bicycles to malaria control agents to mobilise people against malaria and distribute mosquito nets
4. Distribution of mosquito nets
9. Not applicable

Question 12. ? 1. Cleaning the surroundings
2. By teaching others about the dangers of malaria and encouraging them to sleep under a mosquito net
8. Not participated in any way

Question 13. ? 1. Very good exercise 2. Good exercise 3. Neutral
4. Bad exercise 5. Very bad exercise

Question 14. ? 1. More than two years ago 2. Two years ago
3. One year ago 4. Th
5. Never sprayed

Question 15. ? 1. Once 2. Twice 3. Thrice 4. Four times
5. Five times 6. Six times 7. Every night 8. Never

Question 16. ? 1. Yes 2. No