A community-based evaluation of selected malaria health education printed materials in northern KwaZulu-Natal

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Abstract

Introduction: Malaria is one of the leading causes of morbidity and mortality in developing countries, with sub-Saharan Africa carrying the highest per capita burden of this disease in the world. In line with the World Health Organisation's Global Strategy for Malaria Control, which emphasises the empowerment of local communities in health decision making and positive health seeking behaviour, the KwaZulu-Natal Department of Health developed two malaria health education materials. These health education materials have since never been systematically evaluated in terms of their content, the target groups reached, and the appropriateness of the health education messages provided. The aim of this project was thus to evaluate these existing malaria health education printed materials, including their efficacy in communicating appropriate, understandable and relevant messages at community level in the malarias region of Jozini in northern KwaZulu-Natal.

Methods: The study entailed an evaluation of two specific printed materials (i.e. a poster and a pamphlet) that are currently being used for malarial health education in northern KwaZulu-Natal. A qualitative research design based on the interpretive paradigm was used for this study. This comprised the use of focus group discussions and interviews with local stakeholders. Only adult members of the community were purposely recruited for focus group discussions, as the selected malaria education materials have been designed for adults who form the integral part of decision-making (directly or indirectly) at household level. In addition, interviews were conducted with a saturation sample of officials from the Department of Health at Jozini who were

responsible for the design and implementation of these media materials. Data was collected using audiotapes and transcribed *verbatim* in IsiZulu. These transcriptions were translated in English and back translated into IsiZulu to ensure validity of data gathered. Open Code Version 2.1 of 2001, a qualitative data analysis software package was used to code participants' responses. Coded transcriptions were then analysed thematically in order to identify commonalities and variances among the responses of participants. The results of the study were interpreted through the lens of three theoretical models, viz. the Communication-Behaviour Change Model, the Elaboration Likelihood Model and the Health Belief Model

Results: A total of three key informant interviews and six focus group discussions were conducted, comprising adult male and female groups of mixed levels of literacy. The health education materials were evaluated according to their accessibility, participants' reflections on graphical messages, participants' reflections on the textual messages, the font, colour, size and language and emerging interpretation and meaning of the materials to the participants. The poster was well-known, with participants having seen it locally. However, the language and illustrations used sowed confusion about their purpose, and it was clear that this poster is inappropriate for local community consumption. Contrary to the assertions of the departmental officials, the community indicated that they had never seen the pamphlet before. Notwithstanding this, participants felt that the pamphlet was more attractive and more relevant since it was in the local language and used local people and real pictures in illustrations. The pamphlet also provided a progressive series of events categorized according to prevention, health seeking

and treatment. A clear link between the conceptual framework and the pamphlet was evident.

Conclusion: The poster was not suitable for the local community in the study area since it created confusion and was written in a language that was not understandable to a majority of the local participants. The pamphlet was highly successful despite the fact that the local community reportedly saw it for the first time. Heavy reliance on colour graphical illustrations and simple textual messages made it simple and easily accessible. Careful consideration should be taken when developing malaria health education messages, given the financial, behavioural and health implications involved. Extensive consultation should be undertaken during the development phase of health education printed materials in order to assure successful implementation. Several theoretically driven and empirically derived recommendations are offered for improving the design and use of malaria health education materials, especially for the rural contexts in which they are most required.

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Acronyms

ASA	Auxiliary Services Assistant
ARI	Acute Respiratory Infection
DDT	DichloroDiphenylTrichloroethane
EHPs	Environmental Health Practitioners
ELM	Elaboration Likelihood Model
FGDs	Focus Group Discussions
HBM	Health Belief Model
HIV	Human Immunodeficiency Virus
IEC	Information, Education and Communication
KZNDoH	KwaZulu-Natal Department of Health
MCP	Malaria Control Programme
MIS	Malaria Information Systems
NEPAD	New Partnership for Africa's Development
WHO	World Health Organisation

Chapter One

INTRODUCTION

Background and rationale

Malaria is one of the leading causes of morbidity and mortality in developing countries. Sub-Saharan Africa carries the highest per capita burden of disease in the world, of which malaria is the single most important cause. Ninety percent (90%) of the 300 - 500 million global clinical cases occur in this region annually. About three million deaths are related to malaria every year, of which the greatest proportion occurs in Africa. The World Bank and World Health Organization (WHO) rank malaria as the first cause of lost disability-adjusted life-years in Africa and calculated an annual loss of 35 million future life-years due to premature mortality and to disability (World Bank, 1993).

The WHO developed a Global Strategy for Malaria Control in 1992. This strategy was aimed at stimulating renewed malaria control efforts worldwide. The four basic elements of this global strategy were to:

a) provide early diagnosis and prompt treatment;
b) implement selective and sustainable preventive measures including vector control;
c) detect early, contain and prevent epidemics and;
d) foster regular assessment of affected countries' malaria situation, especially the ecological, social, and economic determinants of the

disease, by strengthening local capacities in basic and applied research (WHO, 1993).

These core elements concur with one of the objectives of the New Partnerships for Africa's Development (NEPAD), which is 'to empower the people of Africa to act to improve their own health and to achieve health literacy' (NEPAD document, October 2001). It should be noted that the promotion of health literacy is a crucial platform for the realisation of these elements.

Agyepong, Aryee, Dzikunu & Manderson (1995) acknowledged the need for applied research in exploring local understandings of illness, including disease recognition, treatment, and the reception of interventions. Since there are also concerns that socio-economic factors influence the reception of interventions, it is crucial that health related knowledge of communities is understood in order to inform community-based health promotion interventions.

Various studies have been undertaken in KwaZulu-Natal, which involved assessment of community based knowledge, attitudes and practices with regard to malaria prevention and control. While these studies indicated that there is a considerable level of knowledge of malaria and malaria control interventions (Mnzava *et al.*, 1998; Dladla, 2000 & Dlamini, 2002), they were never intended to evaluate the content, level of exposure and appropriateness of specific malaria-related health education messages disseminated at community level.

Hubley (1993) explains that: 'although our understanding of health and disease is improving, many fieldworkers are still using out-of-date and inaccurate information in their health education...as knowledge improves, you should continually expect changes in the future.' Printed materials like posters and pamphlets form a crucial part of mass health education campaigns. They have the potential of reminding recipients about the various health issues long after those mass campaigns were held. Printed materials should, therefore, contain appropriate, self-explanatory and unambiguous health messages tailored to community needs.

Rationale for this study: a personal perspective

Information, Education and Communication (IEC) messages in health promotion are all too often developed without proper consultation with target audiences. Quite often IEC products, like printed materials, are based on the assumption that the community for which the materials were intended will easily understand and correctly interpret them in the way they were intended. This leads to misinformation and misunderstanding of the intended message, and the fallacious conclusion that people do not want to listen or have a poor level of comprehension (McGuire, 1989).

Message designers often formulate predetermined messages and transcribe it to either pictures or words, without sufficient attention to alternative meanings of this message at community level. Thus, a lack of consultation with the intended users of the messages often produces unintended outcomes and endeavours that are not cost-effective.

Thus the broad aim of this study was to evaluate existing print-media messages about malaria in terms of their understanding and impact at community level.

Problem statement

The Malaria Control Programme (MCP) of the KwaZulu-Natal Department of Health (KZNDoH) in Jozini has been responsible for the dissemination of health education messages in its working area for decades. An IEC unit specifically focusing on malaria was developed in 2003. Although there has been a marked improvement in malaria health literacy in the community (Mnzava *et al.* 1998; Dladla, 2000 & Dlamini, 2002), no systematic evaluation has been carried out on the content of the malaria health education materials disseminated, the target groups reached and also on the appropriateness of those health education messages. The aim of this project was thus to evaluate existing malaria health education printed materials, including its efficacy in communicating appropriate, understandable and relevant messages at community level in Jozini, northern KwaZulu-Natal.

Importance of this study

Following on the Alma Ata Declaration of 1978 (WHO, 1978) and the renewed efforts of the Bangkok Charter of 2006 (WHO, 2006), high priority has been placed on encouraging people to take ownership of their health related decisions. This citizen empowerment is the intended foundation for disease prevention and, in this project, malaria control. It has been indicated elsewhere

that peoples' own contribution towards the success of control measures (Agyepong *et al.*, 1995) is crucial. Thus, health education forms an integral part of conscientizing people about pertinent issues concerning their role at various stages (primary and secondary prevention levels) of malaria control. It is for these reasons that this evaluation of health education has been conducted, so that the current malaria health education materials may be tailored to the local context to ensure optimal impact of knowledge and behaviour change.

Aim of the study

The aim of this study was to evaluate the appropriateness of two existing printed materials (viz. a poster and a pamphlet), in delivering effective malaria health education messages at community level in the malarias uMkhanyakude Health District of northern KwaZulu-Natal.

Objectives of the study

The specific objectives of this study were to:

- gain insight into the development of the two printed materials, including in particular the intended messages and dissemination strategies, from the perspective of health officials from the KZN Department of Health
- develop a theoretically informed perspective of the impact and effectiveness of these two educational materials, at community level, against their intended purpose
- make specific recommendations, based on the outcomes of this study, for the improvement of these printed materials

Chapter Two

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

Malaria in South Africa

Most of the South African areas bordering neighbouring international countries are affected by malaria on a varied scale. Districts bordering with Mozambique in the KwaZulu-Natal and Mpumalanga provinces and those bordering with Botswana and Zimbabwe in Limpopo Province have a comparatively high risk of malaria (Malaria Information Systems data, 2002). This study focuses on a high-risk area in northern KwaZulu-Natal.

Malaria epidemics have historically been one of the most problematic causes of morbidity and mortality in northern KwaZulu-Natal since 1928 (le Sueur *et al.*, 1993). In 1929 there was a severe outbreak of the epidemic. This outbreak had a severe economic impact as sugar plantations and sugar mill workers were affected and the working schedule was severely disrupted. In May 1929 the Amatikulu Hospital records showed that out of 44 hospital cases, 40 were malaria cases. A more severe outbreak followed in 1932, resulting in 22 000 deaths in KwaZulu-Natal (le Sueur *et al.*, 1993). Similarly, another outbreak in 1996 resulted in 29 106 malaria cases and 158 deaths (Ministry of Health – unpublished data). Most recently, the malaria epidemic in 1999 resulted in 51 535 malaria cases and 402 reported deaths (Department of Health, Jozini – unpublished data).

Control measures that were taken to curb these epidemics involved residual insecticide house spraying, larviciding and chemotherapy (de Meillon, 1938; Sharp *et al.*, 1988 & 1996, le Sueur et al., 1993 and Visagie & Sieling, 1985) and later the addition of mosquito nets (Mnzava *et al.*, 2000 and Mnzava *et al.*, 2001). However, health education is hardly mentioned as one of the interventions in malaria control, even by the people themselves (Mnzava *et al.*, 1998). This might be largely due to of the vertical approach adopted by the KZNDoH's MCP, with a strong focus on biomedical top-down interventions focusing primarily on treatment.

Health Education and its importance

The World Health Organisation defines health as 'a state of physical, mental and social well-being and not merely the absence of disease or infirmity' (WHO, 1946). Health Promotion on the other hand focuses on people and their actions aimed at promoting health. In general, its aims are to persuade people to adopt and sustain healthy life practices, to use judiciously the health services available to them, and to take their own decisions, both individually and collectively, to improve their health status and environment (WHO, 1969). Moreover, the WHO Policy Statement on Health Promotion states that:

> *Information and education provide an informed base for making choices. They are necessary and core components of health promotion, which aims at increasing knowledge and disseminating information related to health. This should include: the public's perceptions and experiences of health and how it might be sought; knowledge from epidemiology, social and other*

sciences on the patterns of health and disease and factors affecting them; and descriptions of the 'total' environment in which health and health choices are shaped.

Many people treat health education as equivalent to health promotion and continue to believe that education alone can prevent illness (Coulson *et al.*, 1998). The Bangkok Charter on Health Promotion (2006) positions health as a basic human right that is central to economic development. Given the devastation inflicted by repeated malaria epidemics, it is clear that interventions aimed at promoting sound health are essential for economic development as well as children's performance in schools (Sachs & Malaney, 2002). In this regard it is essential that basic knowledge and skills in terms of health literacy in relation to malaria be understood and adopted by the community.

Health education can be divided into three categories. The first category is *primary prevention*, which focuses on prevention of the occurrence of ill health or infection and is aimed at individual and community-level behaviour change. The second category is *secondary prevention*, which is aimed at minimising the risks to the health of an individual through early diagnosis and treatment, in an attempt to limit the course of illness and minimising its recurrence, in line with the WHO's Global Strategy for Malaria Control (1992). The final category is *tertiary prevention*, which is aimed at ensuring the treatment of hospitalised or sick patients and keeping them free from complications (Coulson *et al.*, 1998). In the case of malaria, the first and second categories are essential components of malaria management at a community level.

The Global strategy for Malaria Control implies a great need for communities to be informed about issues pertaining to prevention and control (WHO, 1993), which can be accomplished through information, education and communication at the household and community levels.

It is important to note that health education is one of the most crucial components of health promotion, as outlined in the WHO policy statement quoted above. It involves a combination of interventions, viz. motivating people to adopt health promoting behaviours, helping them to make decisions about their health and acquire the necessary confidence and skills to put their decisions into practice (Hubley, 1993). As human behaviour plays an essential role in the prevention, control, treatment and rehabilitation processes of most health problems, health education should:

- take into account the underlying influences on health
- contain relevant information
- promote realistic changes
- be directed to the right people and
- use appropriate methods (Hubley, 1993).

It has been noted that some key influences on human behaviour may be outside people's control, i.e. at family, community, district, national and international level (Hubley, 1993). South Africa has a very rich cultural fabric that influences the knowledge, attitudes and practices or behaviour of its varied communities. Some of these beliefs and cultural practices contribute to or hinder malaria control in various ways. An appropriate example would be traditional healers' practices based on cultural information passed on from

generation to generation. Their messages and behaviour could have hindered malaria control, as they believed that some signs and symptoms of malaria were due to various sorts of witchcraft (Dladla, 2000). Although this belief system and attitude still exists, especially in more rural communities like Jozini, health education has been instrumental in KwaZulu-Natal in correcting these practices and has been successful in re-shaping people's perceptions and knowledge about malaria. For example, more recent evidence indicates that when people notice certain signs and symptoms (e.g. headache and shivers), they first consult clinics or malaria control personnel (rather than traditional healers) to check whether they have malaria or not (Dlamini, 2002).

Health education and behaviour change

Influenced by the biomedical model, health workers often understand health problems as being a direct outcome of the behaviours of their patients (Coulson *et al.*, 1998). However, health is a product of the wider socio-economic milieu. Health education has often been criticised for being victim blaming, since health educators focus on individuals for the cause of a problem (*Ibid.*). This makes it difficult for patients to talk to health workers, given their perception that health workers blame them for their problems.

There are three main social cognitive factors influencing behaviour, namely beliefs, attitudes and values. Firstly, beliefs can be judged by someone else to be false, yet the holder believes it to be true. Social and medical anthropology have contributed enormously to health promoters gaining valuable insight into how particular health beliefs form part of a wider system of religious beliefs

and traditional medicine (Coulson *et al.*, 1998). Makemba *et al.* (1996) warn that the need to seek early diagnosis and treatment may not be realized if the manifestation of malaria is not perceived as belonging in the realms of modern western treatment. Tanner and Vlassoff (1998) have found that it is mainly women folk who promptly recognize malaria signs and symptoms in households. Thus, health education should aim at using specific information from social science research to develop health messages that incorporate contextual belief systems of local communities in order for it to be appropriate, with women being important targets of health education programmes.

Secondly, attitudes are defined as a stable set of "feelings" towards particular issues (Coulson *et al.*, 1998). Attitudes may be understood as comprising two parts: the cognitive component (a person's knowledge and information) and the affective component (a person's strength of feeling). While attitudes are relatively stable and enduring, they are susceptible to change through health education (Coulson *et al.*, 1998). With respect to malaria, attitudes towards any intervention may highly affect any attempt to control the disease, as indicated in northern KwaZulu-Natal where the community immediately re-plastered their walls after spraying since they did not like DDT (Mnzava *et al.*, 1998).

Thirdly, values have a strong influence on the feelings, attitudes and behaviours of individuals over extended periods of time (Coulson *et al.*, 1998). Individual values need to be understood within the context of a collective set of values at a community level. Health promotion interventions should be based

on encouraging self-awareness, where individuals may examine or review their values within their own socially constructed cultural context.

Although health education is considered a crucial component of health promotion, it has been criticised for placing the responsibility for behaviour change upon patients or the community at large, with very limited support or intervention in maintaining appropriate behaviour. Health promotion goes a step further in ensuring that the intended behaviour is operationalized. It is increasingly being used to draw attention to the need for both educational and practical actions to influence health (Hubley, 1993).

The role of malaria health education

The community of northern KwaZulu-Natal lives under unfavourable circumstances in terms of social, economic as well as environmental conditions. This community is categorised as poor according to the national population census of 1996. They are a community in which traditional methods of living and traditional belief systems are relatively strong and relatively intact. Most of the people in this community live in remote areas with inaccessible roads, more so during the rainy season (personal observation).

With this in view, health messages that includes encouraging women to build safe traditional huts, with doors that are not detachable and the encouragement of indoor cooking (Dladla, 2000), seem inappropriate. There are various limitations and consequences to this recommendation since these communities

are poor. If it is implemented at all, it may also increase the possibility of Acute Respiratory Infection (ARI) as experienced in children in Butajira in Ethiopia (Persson & Wall, 2002). Most of the messages previously used for health education in these communities have also concurred with the thinking that communities should, for example, build houses with proper eaves, door and window structures (Mnzava *et al.*, 1998). These health messages are not suitable for this community considering their socio-economic status. It is therefore important to know the content of the health messages disseminated to the community presently and to determine its relevance. Answers to these questions can help to elucidate issues pertaining to the overall health education dissemination, its quality and its appropriateness. These answers will thereby assist in the improvement of these health messages by tailoring them to the local context.

Approach of malaria health education

Some communities in rural areas of northern KwaZulu-Natal have been marginalized in terms of access to various types of information dissemination, partly due to their literacy level. However, malaria health education seems to have reached some communities as shown by several studies mentioned above (Mnzava *et al.*, 1998; Dladla, 2000 & Dlamini, 2002). Hubley (1993) distinguishes two approaches that are popularly used in health education. These are:

1. Persuasion approach, where the health educator deliberately attempts to influence people to do what he or she wants them to do

2. Informed decision-making approach, where people are equipped with information, problem-solving and decision-making skills and are encouraged to make their own choices.

He further states that with groups who have been disadvantaged and oppressed, the latter approach is concerned with promoting awareness and consciousness, whereby people have the confidence and power to make decisions and take control of their lives through their own empowerment. In northern KwaZulu-Natal, one of the primary methods used for disseminating health education (in addition to mass IEC campaigns) is the use of printed materials. This project will accordingly assess the extent to which material design and dissemination adopts the persuasive approach and/or the informed decision-making approach.

Target groups for health education

People's behaviour is a product of varied social influences. Particularly with patriarchal communities, decisions concerning general issues are a prerogative of homestead heads. Hubley (1993) suggests that communications should be directed at the persons who make the key decisions in the family and community, what he calls "the gate keepers". A common finding, accordingly to Hubley, is that male gate keepers often know little about the health status of the occupants of their household and that they often play a secondary role as far as malaria health actions are concerned, with women taking a more active role.

It is important to decide on the best point to reach a person in his or her life (Hubley, 1993). This forms a very crucial point in terms of utilisation of resources and ensuring that respective communities critically and actively assimilate the information. In northern KwaZulu-Natal, the illiteracy rate is between 60% and 80% (Bot *et al.*, 2000). Alles *et al.* (1998) point out that knowledge and practices regarding the management of non-severe and severe or complicated malaria were significantly associated with literacy levels in their project. They recommend improving literacy to at least primary school level, coupled with health awareness campaigns in order to improve mothers' ability to recognise childhood malaria-related morbidity and thus reduce mortality. Despite the low literacy rate in the community in the proposed study area, there is convincing evidence, from previously mentioned studies (Mnzava *et al.*, 1998; Dladla, 2000 & Dlamini, 2002), that health education disseminated reaches the community. What is not known though is whether it is appropriate, relevant and properly utilised. To this end, the qualitative method of inquiry used on this study would be particularly useful.

Levels of intervention

Hubley (1993) states that health education interventions can operate at a range of levels, viz. individual, family, community, district, regional, national and international. He points out that the choice of a level depends on the problems faced, the special advantages to be gained from each level and the resources and opportunities that are available to the health educator.

Since malaria is localised in KwaZulu-Natal around areas bordering international countries (MIS data), it seems appropriate to focus attention on these areas. However, these areas also happen to be major tourist attraction sites. This project aims to determine appropriate methods of information dissemination and also to establish the coverage of health education.

Impact of channels, methods used and timing in reaching the audience

A primary consideration in information dissemination is reaching the audience. The health educator should be aware of the best times of the day to reach the audience. Hubley (1993) points out that the intended audience, for example adult men, should be reached through workplaces and children through schools and a decision needs to be made whether there is a need for celebrities to pass the message across. Also the health education planners should take into consideration suitable times for implementing their programme. These issues will also be investigated in this study.

Theoretical framework for this project

A number of theories are applicable to this project. Fitting a theoretical framework to a project proves to be a difficult task, requiring a careful consideration of appropriate theoretical frameworks. The communication-behaviour change model, as outlined by McGuire (1989), forms the basis for understanding the transmission and receipt of these printed materials. This theory is concerned with the source (or the sender), the message, the channel, the receiver and the outcome. This will be complimented by the use of the

Elaboration Likelihood Model (ELM), which unpacks the impact of communication materials in persuading people to undertake appropriate health behaviours. Finally, the Health Belief Model (HBM) will be used to understand the participants' beliefs and perceptual frame of reference regarding the consequences of malaria infection. All these models are discussed in detail below.

Conceptualisation of communication

The study of communication draws from a wide range of theoretical premises from different cognate disciplines in the social sciences, namely anthropology, sociology, psychology, economics, philosophy and political sciences (Halloran, 1998:43). This diversity makes communication a complex field of study. Communication is defined as the sending and receiving of messages from one person to another through some medium (Steinberg, 1999). Therefore, communication should facilitate the process of creating meaning between the source and the receiver (Tubbs & Moss, 2000:8).

Gerbner (1985) defines communication as the production and exchange of information and meaning by the use of signs and symbols. The Oxford English Dictionary explains that communication comes from a Latin word which means to make common to many or to give to another as a partaker. It is said to incorporate three concepts – the first concept is the conveyance or exchange of intangible elements such as information, ideas and meaning; the second is a union or relationship implying mutual revelation, discovery and effects and

lastly a recognition that these processes occur at all levels of human experience.

Communication may occur in verbal and non-verbal modes. The verbal communication mode involves the relay of information between individuals and /or a group or a large number of people. In this case the message is sent from the source and received on the other end by the receiver/s, to whom the communication is directed.

The non-verbal form of communication can involve the use of printed media from where the receiver has to decipher meaning. In the absence of direct verbal interaction, the non-verbal communication mode has to be unambiguous and clear in order to relay the intended message.

The Communication-Behaviour Change Model

The most important components of the communication-behaviour change model are the inputs and outputs that influence attitudes and behaviour (Nutbeam & Harris, 1999). The five main components described by McGuire are the sender, the message (content), the channel, the receiver and the outcome. It is therefore crucial to unpack these components.

The simplest way of understanding this process is by asking, "Who Says What In What Channel To Whom With What Effect?" (Lasswell, 1948). "Who" refers to the source, "says what" – the content or the message, "in what channel" – the channel, "to whom" – the receiver and "with what effect" – the

outcome. This process forms the basis of the communication theory used in this project.

The sender (communicator or source):

The sender or the communicator or the source transmits the message. The source can influence the credibility, clarity and relevance of a message (Nutbeam & Harris, 1999:46).

The message (content):

The message or content refers to the thought, idea or meaning conveyed by the sender. It is what is said and how it is said. The content and form of a message can be influential in shaping audience feedback. Practical considerations such as length of a message, form of language and tone of voice are also included in the content (Nutbeam & Harris, 1999:46).

The channel:

The channel refers to the medium through which a message is delivered, for example verbal, printed materials, radio and so on. Important considerations include the appropriateness of the channel in reaching the desired target groups, in relaying the messages intended and the cost implications (Nutbeam & Harris, 1999:47).

The receiver:

The receiver is mainly the person or groups of people for whom the message was intended or those who consume and make meaning of those messages transmitted by the sender through a specified channel. In designing messages,

it is crucial to take account of a range of receiver characteristics, including for instance the age, gender, religion, culture, etc. of the receiving group (Nutbeam & Harris, 1999:47).

The destination (outcome):

The destination refers to the desired outcome of the communicated messages. The outcome includes aspects like the impact on attitudes, beliefs and behaviour as a result of the message (Nutbeam & Harris, 1999:47).

In the case of this project, the *sender (source)* is the KZNDoH, whose messages are related to malaria. The *messages* are that malaria is a deadly disease that can be prevented and/or treated only at health facilities provided the person has recognized the symptoms, confirmed the presence of the parasite and taken treatment adherently. This point is linked to the WHO's Global Strategy alluded to earlier on. The consequences are that you can be seriously ill and eventually die if you do not take action as quickly as possible. The *channel* refers to the printed materials that include a poster and a pamphlet used in this study. The *receiver* is the community of northern KwaZulu-Natal, in particular those residing in the malaria risk area of Jozini. The desired *outcome* is that community members take personal ownership of the prevention and treatment of the disease by taking appropriate measures to prevent infection and ensure prompt treatment seeking in case of suspicion of infection with malaria.

Elaboration Likelihood Model (ELM)

The second communication theory that is relevant to this project is the ELM. The ELM offers a framework for assessing the impact of a specific media communication on the target attitudes and behaviours. ELM uses two routes of persuasion, i.e. the central route and the peripheral route. The central route uses message elaboration, and can produce significant positive attitude change. The peripheral route uses six different message irrelevant cues to illicit a quick response with minor shifts in attitude (Honors Capstone, 2001). These six cues are reciprocation, consistency, social proof, liking, authority and scarcity.

In the context of this project, the central route would focus on the message elaboration. Here ideas presented in the printed materials must be scrutinized to determine whether they successfully pass on the intended messages to the audience, including their possible consequences in terms of behavioural change. It should be noted that the latter is often difficult to determine in instances where multiple channels are used (as is the case in this study), and given also the inherent difficulties involved in controlling all other extraneous influences on the target behaviour/s.

The peripheral cues involved in the ELM (all being message irrelevant), include the following:

- ⇨ On reciprocation: The KZNDoH expects/wishes that people would abide by its preventive and treatment advice, as communicated through its media materials, and consequently change their behaviour. The

underlying principle of reciprocation is that since the KZNDoH is offering a service, the community should meet them halfway by ensuring appropriate behaviours. Thus, while the KZNDoH is accountable for the health of people in the community, this can only be achieved by reciprocation involving specific prevention and treatment actions at a personal level. The key issue for assessment therefore is the extent to which such reciprocation is evident in the attitudes and behaviours of the audience that receives these materials.

- ⇨ On consistency: Included in KZNDoH's printed materials is a call for consistency in attitude and behaviour of both agents (i.e. the community and the KZNDoH) to ensure the successful prevention and treatment of malaria. An example of consistency is that people should go to the clinic to get tested for malaria and be given treatment by KZNDoH if they are malaria positive.
- ⇨ On social proof: A key criterion for the successful impact of KZNDoH's printed materials is to establish message credibility by providing complimentary social proof. For instance, local familiar faces were used in the KZNDoH's media materials, thus providing social proof to community members

about their plight with regard to malaria infection. Thus, these local people are depicted as individuals who know their symptoms, understand that a reaction to malaria may be delayed, that cerebral malaria is irreversible and deadly, and they immediately seek care. These characters initially interpreted the confusion and hallucinations associated with cerebral malaria as witchcraft, but now understand these symptoms might be linked to malaria. The use of local people to convey these complex messages in the printed materials provide the social proof that is vital to success in the uptake of these messages by the target audience, and in the attitude and behaviour change that is required.

- ⇨ On liking: The principle underlying the liking cue is that since you like the source of the information, you are likely to like the ideas that they convey. It is therefore important to assess whether the participants in this study "like" the local characters used in the printed materials.
- ⇨ On authority: Authority is a cue that is most commonly used in media messaging. In this case, the KZNDoH expects the community to heed the messages they portray in the printed materials because of their perceived moral and medical legitimacy. Often this takes the form of "I tell you and you should listen

because I know more" approach, in this case supported by the use of their official emblem, which further asserts their position of authority.

⇨ On scarcity: One of the print media messages used in this project shows an annual once-off service, i.e. an annual spraying program for malaria prevention at household level. This serves the dual purpose of reinforcing both scarcity and reciprocation cues.

The Health Belief Model (HBM)

The HBM has been one of the most widely used conceptual frameworks in health behaviour. It has been used both to explain maintenance and change of health-related behaviours and as a guiding framework for health behaviour interventions (Janz, Champion & Strecher 2002:45). In this project, the researcher used this model in the analysis to critique the design of the messages for the printed materials of interest. In addition, the researcher used this model as a way of understanding and explaining the community's interpretation of these printed materials. The explanation of the components of the HBM was done in relation to its applicability to the materials researched. This project referred to the latest version of the HBM as explained by Nutbeam & Harris (1999:19 – 23).

Following Coulson *et al.* (1998), the Health Belief Model (developed in the mid 1960's and modified in the mid 1970's) identifies four key triggers for health behaviour change. These are:

- one's perceived susceptibility to the illness;
- the perceived seriousness of the illness;
- the perceived benefits of the preventive action; and
- the perceived barriers to taking the preventive action.

HBM predicts that individuals are likely to take action to prevent illness, and protect and promote their health in view of potentially serious consequences of the unwanted behaviour (Nutbeam & Harris, 1999:19). Nutbeam and Harris refer to the motivation to take this action as a result of a perceived threat. In the case of malaria, the *perceived threat* is that of developing severe malaria, which could be deadly (this is the message conveyed in the printed materials designed by KZNDoH).

The printed materials aim to show that everyone is *susceptible* to malaria and that the actions taken by the characters are aimed at minimizing their chances of being infected. In essence the aim of the printed materials is to help the community understand that their action to prevent malaria infection and/or seek prompt treatment if infected is of undoubted *benefit*.

Of course *barriers* exist in terms of access to health facilities in some locations. There are areas that are so remote and practically inaccessible during bad weather conditions. Even during favourable weather conditions, access to health care facilities is limited by vehicles leaving in the morning and coming

back in the afternoon. One of these areas is situated next to the Mozambican border and the other is about 200 kilometres from the same border towards Jozini.

The other *barrier* is the change in policy of dispensing treatment at health facilities (Department of Health, 2000). Before 2000, malaria treatment was available from the Auxiliary Services Officers (ASO's) and Auxiliary Services Assistants (ASA's). This policy was changed after 2000 so that only hospitals and community health centres were allowed to dispense medication to patients. Coupling accessibility issues with the unavailability of treatment locally serves as a barrier to the community.

The KZNDoH provides services that are enabling to these communities. The enabling factors are free treatment to malaria patients after a positive test. In addition, there are malaria camps where people can go for rapid testing and referral to appropriate clinics or hospitals since treatment is not dispensed in these camps. These camps focus on screening for malaria, and provide readily accessible facilities to the community for malaria testing and treatment referral. There is also active surveillance, where an Auxiliary Services Assistant (ASA) visits each household once a month (Goodman *et al.*, 1999) for testing, follow-up of cases and for the updating of demographic information.

The later version of HBM incorporates issues around personal characteristics and social circumstances, the impact of *cues for action* (media publicity or personal experiences) as well as *self-efficacy* (Nutbeam & Harris, 1999:20).

In the case of malaria and behaviour change, individuals need to:

- be convinced that they are at risk of malaria infection;
- be aware of the symptoms of malaria;
- believe that there are immediate serious consequences of not seeking treatment immediately the symptoms are recognised (in line with the WHO Global Strategy);
- be encouraged through health education and persuasion to immediately seek treatment from health facilities;
- be aware of risk minimization strategies, particularly ensuring proper environmental sanitation to avoid mosquito breeding sites within their premises;
- believe that there are benefits to seeking treatment as early as possible to avoid progression to severe malaria as a result of a delayed action irrespective of existing barriers such as money to travel to the clinic and the distance in some instances; and,
- believe that they are able to prevent malaria and consequently reduce morbidity and mortality with regard to themselves and their families.

Nutbeam and Harris (1999:22) point out that the HBM provides a useful reference point in the development of messages to improve knowledge and change beliefs, especially messages designed for use in the print media. One of the important points that Janz *et al.* (2002:50) refer to is the *cues to action*, which includes factors that could be 'as fleeting as a sneeze or the barely conscious perception of a poster'. They also point out that these cues are difficult to study quantitatively. The relevance of the cues to action is to be seen in one of the printed materials used for this project, where mosquito nets

are presented as a viable mechanism by which to protect people from mosquito bites and hence prevent malaria infection.

Chapter Three

METHODOLOGY

Study Design

This study entailed an evaluation of two forms of printed materials (i.e. a poster and a pamphlet) currently being used for malaria health education in northern KwaZulu-Natal. A qualitative research design, based on the interpretive paradigm, was used for this study. This comprised the use of focus group discussions and interviews with local stakeholders, as described and justified below.

Study population and sampling procedure

The study population is the community of uMkhanyakude district (Jozini), a high malaria risk area in northern KwaZulu-Natal, with a population of about 600 000 people (Census data 2001). The study area has households with easy access to a health care facility and for those who live in more remote areas, mobile clinic facilities are provided at specific periods of time. These fixed health care facilities provide suitable places on the walls to post the posters for community consumption, with selected pamphlets and posters also being distributed from these health facilities during mass IEC campaigns. Only adult members of the community were purposively recruited for focus group discussions, as the selected malaria education materials have been designed for

adults who form the integral part of decision-making (directly or indirectly) at household level. In addition, interviews were conducted with a saturation sample of officials from the Department of Health at Jozini who were responsible for the design and implementation of these media materials.

Data collection strategy

A qualitative approach was chosen because of its strength in bringing forth the richness and holism in meanings and interpretations that people place on things and issues around them (Miles & Huberman, 1994:10). The qualitative approach has a strong potential for revealing complexity in reality and such data provide "thick descriptions" that are vivid, nested in a real context, and have a ring of truth that has strong impact on the reader. Qualitative data provides a source of well-grounded, rich descriptions and explanations of processes in identifiable local contexts (Miles & Huberman, 1994:1).

The interpretive paradigm used in this study is classified according to its ontological, epistemological and methodological dimensions. The ontological dimension refers to the nature of the reality that is to be studied and what can be known about it; the epistemological dimension refers to the nature of the relationship between the researcher and what can be known and finally the methodological dimension refers to way the researcher will study what needs to be known (Terre Blanche & Durrheim, 1999:6).

The ontological dimension of this project

The KZNDoH has developed a number of printed materials for malaria health education for the target community, of which the two mostly widely and recently used were selected for this evaluation. In developing these media materials, the designers chose the health messages, translated them into words and pictures, and finally designed the materials (du Plooy, 2001: 30). The community has had no part whatsoever in the development of these materials, except consuming the information selected by the KZNDoH. The Department, in this case, is in the position of authority.

According to the modernists (the ontological dimension that existed between the 1940s and 1970s), knowledge could be acquired by discovering reality through the eyes of people who experience it (du Plooy, 2001: 30). This ontological approach forms the basis of this project since the community's interpretation of the printed materials provides the focal point to review their impact and inform the development of printed materials in the future. Du Plooy (2001: 30) also discusses the period after the 1970s where communication researchers were interested in the constructed reality of knowledge and truth (du Plooy, 2001: 30), which became known as the Constructionist Paradigm.

The Constructionist Paradigm refers to the "research paradigm premised on the idea that social and psychological phenomena do not have a pre-given reality, but are socially constructed and can be understood through 'deconstructing' the elements that go into making them appear meaningful" (Terre Blanche &

Durrheim, 1999: 476). The Constructionist Paradigm takes language seriously and bases reality on the social meanings encoded in language (Terre Blanche & Durrheim, 1999:149 - 151). For example, children are commonly socialised into the mythology of the tooth fairy as the provider of a new tooth, with an associated ritual of behaviours to request the tooth. This gives meaning and reality to the child who desperately wants his/her tooth replaced. It rarely occurs to the child that the process of growing a tooth is quite natural. Thus, communities uphold a range of stories and legends as part of their constructed reality, which makes their lives simple and acceptable. Often, these upheld realities are constructed to enforce certain behaviours that avoid exposure to danger and risk, and that enhance behaviours that are conducive to healthy personal and communal lifestyles.

The epistemological dimension of this project

"If we regard communication as a process by which meaning is shared in different social contexts, then a quantitative approach is not adequate to research the symbol systems by means of which we communicate" (du Plooy, 2001:32). The community might have different interpretations of the messages they see from the printed materials. The researcher in this project explored these interpretations with a view of unravelling hidden meanings the community might have given to these materials. These interpretations are contrasted with the intention of the DoH officials who designed the materials.

The methodological dimension of this project

As outlined above a qualitative research method was adopted for this study. In the first instance, the researcher conducted interviews with officials from the Department of Health at Jozini, who were instrumentally involved in malaria health education and promotion, to determine the intended messages of their current printed materials and the communication process adopted (see Appendix 1 for the semi-structured interview schedule). A total of three individual interviews were conducted with these officials.

In addition, a series of focus group discussions (FGDs) were held with adults from the community of uMkhanyakude district (see Appendix 2 for the semi-structured focus group interview schedule). In this context it was difficult to clearly define 'adults' due to the fact that some young women and young men cohabit and/ or have children at very early ages. For this reason, adults in this project would refer to both males and females who are managing their own households' and/ or are above 15 years of age. They should also have influence in the household's decision-making process.

These FGDs (with a maximum of 12 people per group) were conducted in two relatively high-risk areas (Bhekabantu and Ndumo) and two relatively low risk areas (Tetapan and Mamfene). The high-risk areas are situated near the Mozambican border and have a high prevalence of malaria cases, while the lower risk areas are located further south in the uMkhanyakude district. Two further FGDs were planned for the high-risk area of Shemula, but due to practical difficulties encountered, these groups were not conducted.

The FGDs were designed so as to recruit both literate and illiterate individuals as participants. Literate refers to those people who can read or write in any language, irrespective of their highest level of education, whereas illiterate refers to those who cannot read or write. While the intention was to separate illiterate from literate groups to ensure ease and flow of communication within each group, this was difficult to implement practically. The result was that five groups comprised a mixture of literate and illiterate participants, with only one group (in Mamfene) comprising illiterate participants only.

Given the cultural context of gendered power relations that pertain in traditional rural communities (Petersen, et. al., 2004), it was deemed important to also stratify the groups by gender so as to ensure that culturally mediated power differentials did not restrict women's participation in the FGDs. Again, while the intention was to conduct separate men and women's groups in each selected area, this proved difficult to implement practically. Thus, separate men's and women's groups were only possible in Ndumo and Mamfene, with mixed groups being run in Tetapan (low risk area) and Bhekabantu (high risk area).

In keeping with the epistemological underpinnings of the interpretive paradigm, the intention in stratifying the FGDs by gender and literacy was not to mimic the traditional quantitative paradigm in creating two new independent variables, but rather to ensure that appropriate methodological spaces were created for the voices of more marginal groups in the community to be heard.

A four point snowball effect method was used to recruit participants for the different FGDs according to gender and literacy levels. In this method, I

identified a person from one point in the area and asked the person to bring two other people sharing the same characteristics. For example, a female person who has never been to a formal school and is functionally illiterate was recruited at point 'A'. She was asked to bring along two additional people from her neighbourhood who are female and illiterate. Another female who is illiterate was asked to do the same at point 'B', which was at least between 1 and 2 kilometres away from point 'A' to facilitate the spread of participants. It is important to note that the other two participants brought by the selected person, were not affected by the distance condition. The same was done for points 'C' and 'D'. All female illiterate people recruited from points 'A', 'B', 'C' and 'D' congregated at one venue, thus making up a female illiterate FGD that was reasonably well-spread geographically. The same procedure was followed for illiterate male groups, as well as for respective groups of literate males and females. Despite the care taken in implementing this rigorous procedure, however, for most of the sessions anywhere from ten to fifty participants had heard about the study and arrived at the venue, at different times, making this procedure difficult to implement on the ground. An iterative process was followed, with FGDs being terminated once saturation of information had been achieved in the opinion of the researcher.

In summary, a total of six FGDs were conducted, with the researcher being satisfied that the criterion of saturation had been reached. This comprised one mixed gender FGD in Tetapan, one mixed gender FGD in Bhekabantu, one men's and one women's FGD in Ndumo and one men's and one women's FGD in Mamfene. These FGDs were held in central community venues where

participants felt comfortable to convene, with centrality of venue being the key consideration.

Some of the variables assessed using these focus groups included:

- previous exposure of participants to the two printed materials
- the impact of the font, colour and layout of the poster and pamphlet on participants
- the impact of the graphical and textual messages on participants

Data analysis

The audiotapes of the FGDs were transcribed *verbatim* in IsiZulu using Microsoft® Office Word 2003. These transcriptions were then translated in English and back-translated into IsiZulu, in order to ensure validity of data gathered. Open Code Version 2.1 of 2001, a qualitative data analysis software package that was developed by Umeå University, was used to code participants' responses. The coded transcriptions were then analysed thematically in order to identify commonalties and variances among the responses of participants.

According to Boyatzis (1998), thematic analysis is a way of seeing, by making observations and coming to insights 'intuitively'. Thematic analysis allows one to see something that had not been evident to others, and this is done by perceiving a pattern or theme in seemingly random information. The perception of this pattern allows one to proceed to the next step, which involves classifying or encoding the pattern by giving it a label or definition or

description. Thereafter, the third major step involves interpreting the pattern (Boyatzis, 1998). As a process of encoding qualitative information, thematic analysis facilitates the location of themes found in information that at minimum describes and organises the possible observations and at maximum interprets aspects of the phenomenon (Boyatzis, 1998). A theme may be identified at the manifest level (directly observable in the information) or at the latent level (underlying the phenomenon).

By using a data driven approach, which is constructed inductively from raw information, information appreciation is enhanced and with a complete view of the information available, the researcher can appreciate gross (i.e. easily evident) and intricate (i.e. difficult to discern) aspects of the information (Boyatzis, 1998). However the approach of developing a code on the basis of prior research places the researcher approximately in the middle of the continuum. The theory driven approach is one of the more highly popular approaches, and in this approach the researcher begins with the theory of what occurs and then formulates the signals, or indicators, of evidence that would support the theory. The wording of the themes emerges from the theorist's construction of the meaning and style of communication or expression of the elements of the theory (Boyatzis, 1998).

By combining this approach with the prior data driven approach, the researcher was able to draw on a broad knowledge base when developing themes that were investigated, and such preliminary investigations of existing phenomena increases interrater reliability.

Ethical Considerations

Formal approval to conduct this study was granted by the Higher Degrees Committee of the University of KwaZulu-Natal (see Appendix 3 for proof of Ethical Clearance) and by the Malaria Control Programme of the KZN Department of Health (see Appendix 4 for proof of permission to conduct this research study). In addition, local traditional authorities were consulted for consent for the FGDs to be conducted with the community. This process, though time-consuming and costly, was considered crucial not only from an ethical standpoint, but also to ensure stakeholder buy-in for the results of the study and for the implementation of the recommendations arising. All prospective study participants were briefed fully on all aspects of the project and informed consent for their participation in the study was obtained (see Appendix 5 for the Informed Consent Form). Proper confidentiality requirements were followed in the reporting of results, with no personal identification of participants. Feedback was given to all stakeholders concerned, including a verbal report to traditional local authorities and a presentation backed by a written report to the Department of Health in Jozini (these reporting dimensions, and the negotiation of actions arising, fall outside the scope of reporting for this dissertation).

Dissemination of findings

As stated, the primary stakeholders targeted for dissemination of the study findings are the traditional local authorities and the Department of Health in

Jozini. A further report, with outcomes and recommendations, will be presented to the KZNDoH.

In terms of external stakeholders, this study is being reported in the form of this Masters dissertation, and it is anticipated that the results will be published and presented in appropriate scientific journals and meetings locally and internationally.

Chapter Four

RESULTS

Foreshadowed Issues: The researcher's preconceived views of the printed materials

True to the epistemological dimension of the interpretive paradigm that informed this study, it is important to acknowledge at the outset that I as the researcher did not go into the field without any preconceived ideas about the materials that I was evaluating. In accepting the influence of my own subjectivity, I embraced my own perceptions and viewpoints as an integral part of this research process.

Thus, before commencing with the interviews and FGDs, I traveled out to a range of health centers in northern KwaZulu-Natal and was pleased to find that a majority of these health facilities (clinics and hospitals) posted the selected materials on their walls. I noted also that the large majority of patients frequenting these facilities are illiterate, and I wondered what they made of the written components of these materials. In addition, some facilities had these posters crowded out by other materials on these notice boards (posters on HIV/AIDS, STI's, TB, family planning, etc.), thus potentially compromising the impact of these malaria messages.

The Poster

Description of the poster

The first printed material of interest was the poster that is found on the walls of most of the facilities in northern KwaZulu-Natal (Figure 1). This A1 poster is pink in colour, is written in English, and has plenty of writing in it, complimented by a map depicting the high malaria risk areas and four graphics (one large mosquito, one small mosquito under a magnifying glass, one of a patient in a hospital bed, and one of a young rural child standing alone). Finally, there is a logo of the KZNDoH at the bottom right hand corner of the poster.

Messages contained in the poster

Transmission of malaria:

- By the bite of an infected *Anopheles* mosquito which is the usual method by which man acquires the infection

Prevention of mosquito bites:

- Preventing mosquito bites is the most important and effective way of preventing malaria. Measures to prevent mosquito bites should always be taken in a malaria risk area, whether or not antimalarial drugs are taken.

Symptoms of malaria:

- The symptoms of malaria are very similar to flu e.g. headaches, fever, muscular and joint pains, sweating, rigors (shivering), nausea, diarrhea and fatigue. Symptoms can still occur up to six months after leaving the malaria risk area.

Clinical features of malaria:

- Malaria is an acute disease, which usually presents clinically with chills, fever, and profuse sweating. The clinical features of malaria vary from nothing to mild to severe, according to the species of parasite present, the patient's state of immunity, the intensity of the infection, and the presence of accompanying conditions such as malnutrition, anaemia or other diseases. Malaria tends to be particularly severe in infants, children and pregnant women. Fever may persist for several days, accompanied by headache, aching joints, and general discomfort. The classic presentation of malaria with chills, shivering, high fiver, and sweating may occur. The onset of malaria can resemble an influenza-like illness. In infants the symptoms of malaria can be subtle and quite variable and may be limited to poor appetite, restlessness, and loss of normal interest in the surroundings.

Treatment and diagnosis:

- Malaria can still be contracted in spite of taking preventative measures, since no precautionary measures are 100% effective. Any person resident in or returning from a malaria risk area, who develops fever and flu-like symptoms should immediately consult his/her doctor and mention that he/she has been in a malaria risk area. The patient should be tested for malaria. In the majority of cases, examination of blood smears will reveal malaria parasites. If not found initially, further specimens should be examined by an experienced laboratory before the infection is excluded, as false negatives may be found on initial examination. Presently a rapid

diagnostic test can be used to confirm positivity. Appropriate treatment should then be given immediately.

Critical review of the poster

Without having consulted the designers of the poster, I critically evaluated it, my own subjective assumptions, perceptions and biasness notwithstanding. My first thought was that there appeared to be a lack of consideration of the target audience in the development of the poster. Specifically, the poster is rather dense in terms of the written word, which would require the recipient of the health messages to read in some detail in order to make sense of what is being communicated. Further, the poster is written in English, which would render the poster inaccessible to an even larger proportion of the community, given that there are probably community members in the target area who would be able to read isiZulu but not English. Considering the level of literacy in the community, therefore, I felt that the majority would not understand the content and would interpret the message/s primarily on the basis of their interpretations of the pictures and graphics, especially the two pictures of mosquitoes and the logo of the Department of Health.

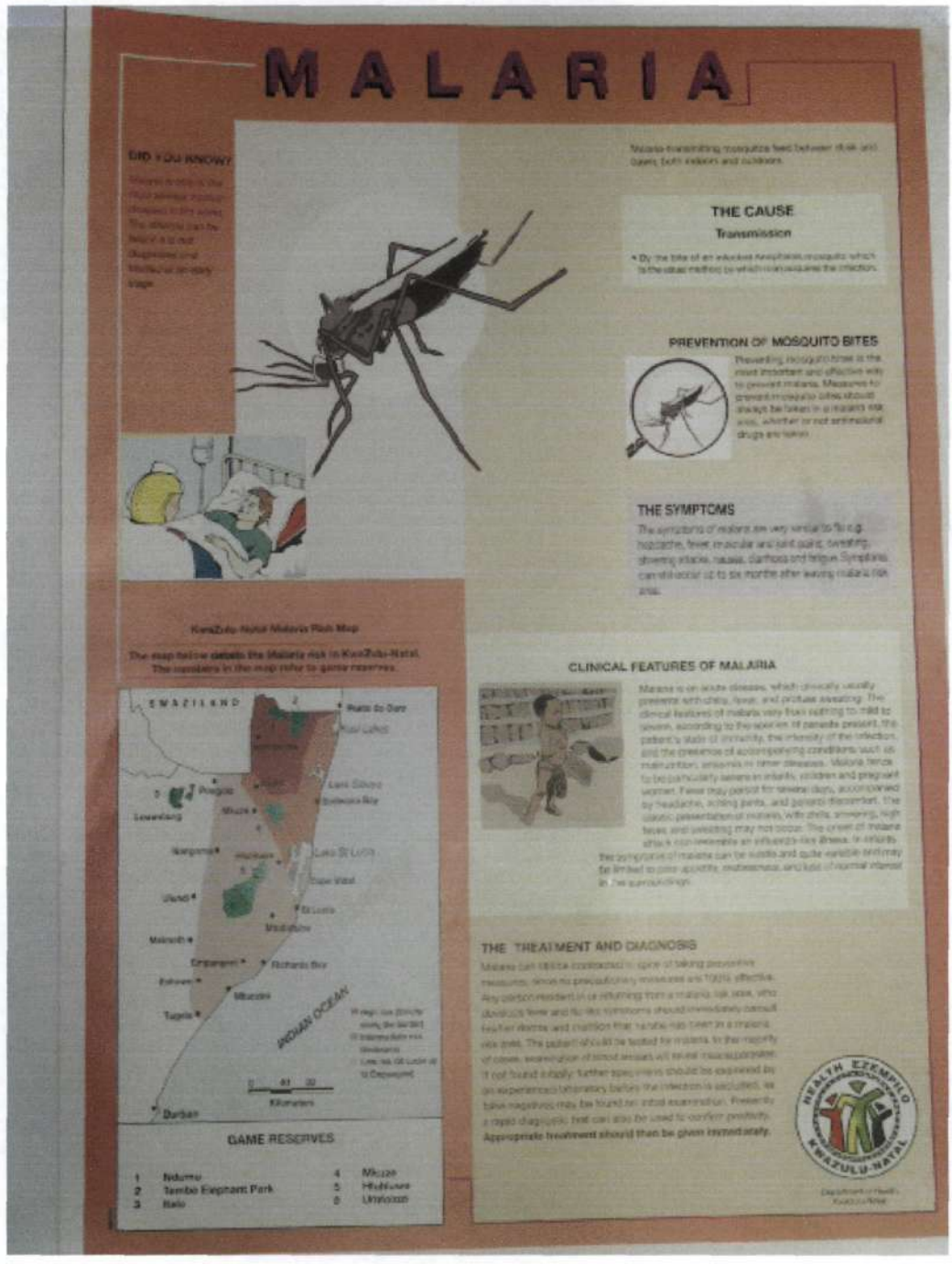

Figure 1: Poster used by the KZNDoH and evaluated during the FGDs

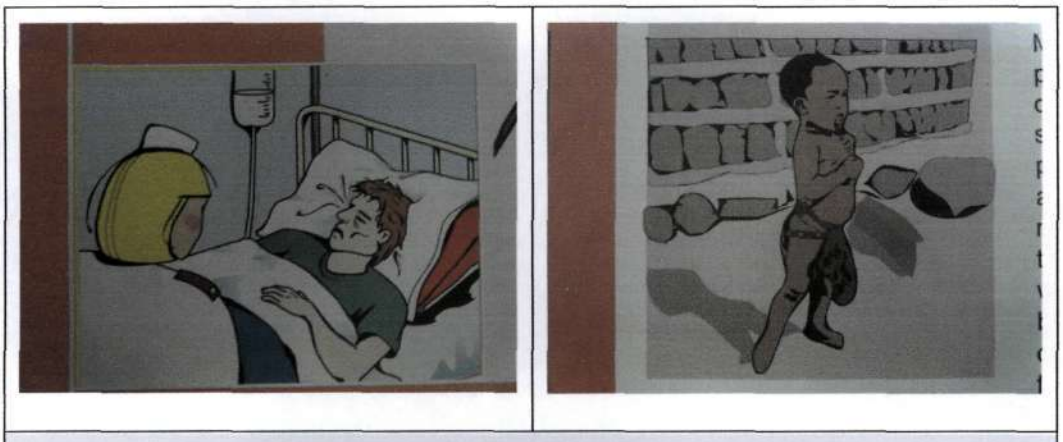

Figure 2: Two of the illustrations that appear on the poster

In addition to the fact that words dominate over pictures in the poster, I could not find a clear link between the pictures or graphics shown on the poster and the intended prevention and health-seeking messages they ought to convey and/or reinforce. It appeared in fact that the pictures had been inserted from a list of clip art graphics (Figure 2). Again, considering the literacy level, I would think that more effort at should have been made to carefully select or design appropriate pictures that would tell the story and assist comprehension. I started to wonder whether the community really comprehended the messages that were contained in the poster, given this apparent double insult of literacy and inappropriate graphics.

The map showing the high-risk malaria areas in KwaZulu-Natal is probably of little direct relevance to the local community. Map reading would undoubtedly require a fair level of literacy, geographical knowledge and past experience. The presence of the map indicated to me that the designer intended to impart information of where malaria occurs and the fact that those entering these specific areas should take the necessary preventative measures. From my

perspective, the local community probably do not need maps to sensitise them to the presence of malaria in their own area. The relevance of this map to the local community is therefore difficult to justify, especially given the limited choice of messages that could and should be contained in a single poster.

The Pamphlet

Description of the pamphlet

The pamphlet is a folded A3 page containing back-to-back pictures and writing in the local language (IsiZulu) (Figure 3). The first page shows a traditional cowhide and a spear in colour print with the caption, written in the local language, translated to read "the Malaria Control Team". The second page has a danger sign, a mosquito and a warning. The third page has a number of pictures showing people simulating malaria symptoms and treatment given out by a nurse. The last page has pictures of prevention measures like the annual residual insecticide spraying, the mosquito nets and the repellents.

Messages contained in the pamphlet

The translated text messages contained in the first and fourth pages of the pamphlet are as follows (Figure 3):

The first page (right):

- To fight Malaria Fever (written in yellow).
- A team fighting malaria (written around the shield).

The fourth page (left):

- Prevention of malaria (written in red)
- To protect yourself from malaria, avoid being bitten by a mosquito in the following ways (written in small black font):

- All the houses must be sprayed in collaboration with the Department of Health (inside a yellow box)
- Spray with an insecticide before you go to sleep
- Burn a mosquito coil or use a repellent on your body
- Sleep under a mosquito net

o If you need more information see the health workers near you

Figure 3: From left to right: the back and front pages of the pamphlet respectively

The translated text messages contained in the second and third pages of the pamphlet are as follows (Figure 4):

The second page (left)

o Malaria kills (inside a triangle with a skull and cross bone)

- Malaria is caused/ or is transmitted by being bitten by an infected mosquito

The third page (right):

- Signs and symptoms of malaria
    - Headache (*depicted by a picture of a woman holding her head*)
    - Shivering and sweating (*depicted by a picture of a person under A blue blanket*)
    - Painful body, unable to stand or work (*depicted by a picture of a woman sleeping next to a wall*)
- What do you need to if you feel sick?
    - If you feel sick with these signs and symptoms visit your nearest clinic or doctor as soon as possible *(text inside a box with a picture of a health worker handing out treatment)*

Figure 4: The inside pages of the pamphlet respectively

Critical review of the pamphlet

The pamphlet is apparently well designed, with an indication that there was better consideration of the target audience than pertained with the poster. This is evident in the use of isiZulu as the written language and the use of short sentences to compliment pictures rather than the other way round. Overall, pictures were clearly favoured to the written word, with these pictures depicting local people that community members might be more readily able to identify with. These factors are indicative of a more inclusive and considered approach in the development of this pamphlet as compared to the poster.

The pamphlet tells what appears to be a comprehensive story, with clear message content. There is an ***introduction*** of the responsible team at the front page, which is the Malaria Control Team. The second page shows the ***dangerous vector*** together with the danger sign, as well as the corresponding text. The two pictures (that is the blood fed mosquito and the danger sign) appear to send a clear message to the reader that does not need much interpretation. Immediately, the reader gets a message that invokes fear when the blood fed mosquito and the danger sign are paired (whether these fear messages have the appropriate impact is an interesting issue to be investigated in the FGDs). The third page shows ***signs and symptoms*** that should be recognised by people at a community level. The presentation of these signs is aimed at encouraging recipients to seek treatment immediately they manifest. While some of these signs and symptoms appear difficult to connect to the graphical presentation (e.g. the woman sleeping on the ground next to the wall and the person asleep on the bed covered in a blanket and towel), the presence of the corresponding text addresses this shortcoming. The last page shows

prevention strategies aimed at promoting awareness amongst recipients of how to protect themselves from being bitten by mosquitoes.

Although the pamphlet is comparatively much better than the poster, certain shortcomings are also obvious. The first relates to the fact that the cover page does little to help the recipient identify the pamphlet as an information aid on malaria. If one looks at the picture on the front page without reading, it gives a sense that it might in fact be linked to Arts and Cultural issues. The insertion of a picture of a mosquito on the cover page, for instance, might have helped allay this shortcoming.

A second consideration relates to the use of a range of characters in the picture to show signs and symptoms of malaria. It is possible that better learning outcomes might be realised if the same characters were used to demonstrate the various signs and symptoms of malaria, and importantly, the stages of disease progression. Third, in its current form, a number of unintended interpretations may be drawn from the pictures that might not necessarily be linked to the intended message/s. For example, in the picture showing a nurse dispensing treatment, it is noted that the lady in this picture is carrying a child on her back and that the background shows posters of family planning and nutrition. It is possible, therefore, that the picture might be interpreted as having little to do with malaria and possibly more to do with maternal and child health and/or family planning.

Key informant interviews

Interviews with three key informants were conducted. The participants were all KZNDoH government employees who were involved in the development and/or dissemination of the printed materials. Two of these key informants are based in uMkhanyakude District and the third is based in the uThungulu District. This latter participant was instrumental in the design of the pamphlet.

The first key informant had been with the KZNDoH for a long time and was involved in various community-based activities for a number of years. Although he was unsure as to who developed the poster, he indicated that normally the National Department of Health produces and disseminates such material. With regards to the pamphlet, he indicated that two senior officials from the Department developed it. His responses were as follows:

> *Posters and pamphlets were developed by the Department of Health with the aim of disseminating information about malaria to the community, increasing awareness of the signs and symptoms of malaria, how to prevent malaria and how to treat malaria.*

He indicated that community members' knowledge of signs and symptoms, prevention measures and health-seeking behaviours were identified as the gap that needed to be filled by the introduction of these printed materials.

On the point of who decided on the medium to use, he pointed out that according to his knowledge:

> *It is a well known thing that posters and pamphlets are a very good tool to make people aware of anything you want them to know.*

For the pamphlet to look appropriate, he stated that local people had been used and the colour photographs that had been included would attract the attention of recipients.

They used local materials to develop these posters and pamphlets i.e. a local person showing signs and symptoms of malaria, a local nurse and so on.

.....the poster used drawings of people in the hospital, the mosquito and a child probably playing outside. The map is one of the additional things that showed the location of the areas most affected by malaria.

He reported that the team who developed the pamphlet were the same people who collected and collated the information that was used in its development. It was not clear, however, who developed the poster as it seemed that it was imported and translated from one of the other areas affected by malaria in South Africa.

The key informant pointed out the places where the posters and pamphlets are found in the community:

*These posters and pamphlets are found in schools, clinics and hospitals. EHPs (*meaning Environmental Health Practitioners*) and Malaria Team Leaders are the ones who see to it that the posters and pamphlets are available in health facilities and in schools. These posters and pamphlets are available every day, for the whole day, for everybody who can read.*

He explained that the EHP's monitor the dissemination of these posters and pamphlets and was positive that the pamphlet had been widely disseminated at community level. When asked what he thought about the pamphlet, the key informant mentioned that:

> *It is a very good tool to empower our community with knowledge of malaria control and the things that needed to be done by the community itself to prevent malaria infection.*

Regarding the message that the printed materials convey to recipients, he mentioned that:

> *It makes the community aware of what is expected from them when they feel the signs and symptoms of malaria and it will help people know how to protect themselves from mosquito bites*

He stated that the intended message in the printed materials was to make people aware of malaria and to ensure they take the necessary steps when they suspect malaria infection. The idea was to ensure that their suspicions were appropriately aroused by noting the signs and symptoms and knowing that they should consult the nearest health care provider in order to confirm malaria infection. He also stated that they encourage and expect the community to improve their health-seeking behaviours by going to health facilities as soon as possible if they suspect malaria and adhere to treatment as prescribed by a professional nurse or a Doctor.

The informant indicated that there had been an improvement in health promoting behaviours as a result of the influence of the printed material on the

community. He stated that the health seeking behaviour of the community has improved for the better. He indicated, however, that the deaths that are currently seen are largely due to the fact that some community members get infected and leave the area. The disease would progress significantly when they are away and they would often not get proper treatment wherever they were. When they came back, the condition would have worsened and they would eventually die. This situation is compounded by HIV infection; when immuno-compromised people are infected with malaria, the malaria progresses at a much faster rate, resulting in treatment failure and eventual mortality.

The informant felt that significant improvements can be made with regard to the form of these messages. He also added that there should be constant evaluation of the printed materials in order to update them from time to time.

There is always a room for improvement in every thing, what I will love to see happening to our posters and pamphlets is to see a group of experts analyzing and testing them and making them user friendly and understandable to every one who come across it and it becomes eye catching.

He pointed out the difficulties involved in measuring the impact of the poster and pamphlet on the community:

It is difficult to tell the exact impact of the posters and the pamphlets on the community until such time as we conduct scientific research, but there are people who use these posters in different ways. School children use it when writing their school assignments, nurses use it when educating their patients before they start their normal daily duties and now we are giving it

to traditional healers to teach their clients coming from malaria- free areas. Traditional healers are already receiving training on malaria control. The noticeable change to the community is that they report to health facilities early, before they get worse, for treatment, and the co-operation between the community and malaria control staff when conducting house spraying is very high. Our IEC team is facilitating this change by encouraging the community to read the posters and pamphlets and explaining what is in the posters and pamphlets to the community and school children. To explore the impact on male and female adults and children is not easy until such time as we conduct a scientific research study about this.

In terms of the colour, size, layout and font for both printed materials, the informant volunteered the following views:

I would say I like the idea of using pamphlets and posters to educate the general public, though some blacks do not want to read, they want to be told (the IEC sorts that part out). I think colour and size are ok, but I am subject to correction by an expert, the only thing which I am not happy about is the way they write words, they put in too much information and the font size in the poster is very small, a poster should be self explaining without having to read words.

The second key informant is an Environmental Health Practitioner (EHP). She has been with the Department of Health for about four years and is responsible for the IEC. The following is a report on her interview and her responses pertaining to the poster and the pamphlet.

The EHP indicated that two senior officials from the Department developed the pamphlet and they adopted the poster from Swaziland. The idea was generated when a SiSwati poster was seen which was not good for an IsiZulu speaking person, it was seen as being somehow incomplete. These two officials' experiential exposure inspired them to develop such an illustrative poster. The poster was then modified to suit the needs of local South African communities. They wanted to convey an illustrative educational message to the community by using pictures, to enable even a person who neither reads nor writes to understand the message. The informants pointed out that the drive to develop the poster and the pamphlet emanated from the relatively late reporting of sick members of the community at the health care facilities for malaria treatment.

The choice of these media materials was based on the fact that they were perceived as the appropriate media to disseminate the information to the community and reach a higher number of people more personally, as opposed to mass communication strategies. She pointed out, however, that both these media have their own unique shortcomings as they might have long messages that might bore people and make them unattractive.

The EHP pointed to the use of symbolism in the pamphlet in particular, for example the shield, which symbolised protection and defence. She elaborated that the spear symbolised the attack on the vector through larviciding, while by the defence, she meant the case management. The intention was to use the parallels depicted in this symbolism to enable the control of malaria.

The informant pointed out that the two senior officials within the Malaria Control Program who had developed the poster and the pamphlet had also collated the required information. The community members were used as central characters to illustrate the extent of their understanding of malaria issues. Although the poster is in English, the informant felt that it reached the community and that anyway, the message was clearly depicted in the illustrations used.

The informant pointed out that the posters and pamphlets are found in clinics, schools and community centres and that community members sometimes use them to decorate their homesteads. The EHP indicated that the malaria management team is responsible for the development and design of printed materials and the field staff were responsible for the dissemination thereof. The pamphlet and the poster are said to be available throughout the year. The intended consumers of the poster and the pamphlet are communities at large, especially in rural areas as they can relate to the pictures.

The informant pointed out that the poster, as well as the pamphlet, indicated that malaria is a dangerous disease and both media materials address how to fight it through the suggested measures. These measures included the use of protective measures for primary prevention and timeous visits to the health care facilities for early diagnosis and treatment.

The EHP pointed out that the messages portrayed in the poster and the pamphlet was generally concerned with the signs and symptoms of malaria, preventatives measures and health-seeking behaviour. It was also intended to

make the community aware that malaria is dangerous and to alert them about the need for them to be proactive in combating this disease.

When asked about possible improvements that could be made to the poster and/or pamphlet, the EHP replied that:

> *Yes, in the picture depicting a nurse, she should rather be taking a blood sample from a patient instead of the glass/tablets that shows in the picture. Taking a blood sample will make the communities aware that the only way to confirm malaria is through a blood test and that is the first thing the health professional will do before giving treatment. The background should also have malaria information.*

The EHP pointed out that she had no comments with regard to the question of the impact of the poster and the pamphlet on behavioural change. When asked about the colour, she pointed out that the colours are good and bright enough and the font is appropriate.

The third interview was with the one of the senior officials who developed the poster and the pamphlet. With regard to the pamphlet, he indicated that:

> *The management of the MCP identified the need for IEC material that would be effective in the rural communities where literacy levels were very low. This was during the period when KZN DoH experienced a significant increase in the number of malaria cases. "Work for Water", a NGO responsible for clearing of alien plants in the area, requested that the MCP assist them to inform their labour force on malaria and*

the prevention thereof. It was also indicated that they had funds available for the development of IEC material.

Discussions were held with malaria field staff for their inputs and it was agreed that pictures/images should be used to portray the message with limited text. With limiting the text it was assumed that children will be able to read and understand the message which they will be able to explain to their parents, if needed. The pictures/images should also be able to portray the message effectively.

To appoint a graphic designer would have been too expensive and it was decided to use photographs taken of actual people in the area. This would have had the added advantage of enabling local communities to identify closely with the material. The pictures were taken in the field and show the symptoms, the need to report to the clinic and preventative action.

An agent was then appointed to assist with the design of the pamphlet, colour, layout, etc. The design of the front page was done keeping in mind the Zulu culture where the shield is used to protect warriors and is associated with fighting, in this instance the fight against malaria. A draft of the final product was circulated amongst staff and comments were invited from our Health Promotion section.

Regarding the dissemination of the media materials, the informant reported as follows:

Pamphlets are found at household level. The material is distributed during Health Promotion campaigns and is also available at clinics. During the spraying season the pamphlets are handed out at the homesteads that are visited. The community at large in malaria areas is targeted. People with elementary reading skills should be able to understand the pamphlet.

The informant indicated that he could not comment on the following issues since he facilitated the development process:

- When you see this poster/pamphlet, what do you think of it?
- What message does it pass on to you?
- What do you think is the intended message?
- Do you think that there is anything that can be done in order to improve this poster/pamphlet?

In response to the question of impact of the pamphlet, he indicated that:

I do not think that the impact of the pamphlet can be evaluated in isolation; improving awareness depends upon many different approaches using different media interventions.

On the assessment of the poster, the informant indicated that the Health Promotion (HP) unit of the KZNDoH approached the MCP with a request to identify the need for additional IEC material. Management identified the need for a poster that will give more detailed information on malaria. The target population was for people visiting malaria areas (tourists) to highlight the risk areas and to emphasize symptoms and treatment. The MCP staff and the HP

unit jointly did the planning of the poster. MCP staff provided the text (contents) and HP was responsible for the layout and design. He indicated that the poster was distributed to schools, doctor consulting rooms and pharmacies.

The informant indicated that the poster was later withdrawn as it was felt that it was "too busy" (contained too much text) and that it was not fulfilling its purpose, as people did not really read it.

Reflections on fieldwork and logistics for the FGDs

Tetepan

A few problems were encountered during data collection that included the weather and the organisation of venues for the discussions. On the first day of fieldwork, it started pouring with rain just as the first group was about to be conducted. An alternative venue had to be urgently negotiated, so the local Induna (headman) asked the local school to accommodate the community for the discussions, which was quickly prepared and utilized for the FGDs.

The result was one relatively large group of approximately 20 people who had assembled in one venue, which had not been the plan, and it was really difficult to divide people into their respective groups. The group was asked whether they would be comfortable to be mixed according to gender to which they did not object. In addition, there seemed not be any fear or shyness from the female group to express themselves in the presence of their male counterparts.

Bhekabantu

Due to the problem of terrain and the rain, we arrived later than expected. The group of people was large and we found them waiting for us. We were given a hall next to the clinic where we were going to have our discussion. I encountered the same problem with this group, i.e. that they were mixed in terms of gender and it was difficult for me to separate them. I again proceeded with the discussion with this mixed group.

Ndumo

When I arrived at Ndumo, accompanied by officials from the KZNDoH, I found more than 50 people awaiting our arrival, with more community members streaming into the school where the discussions were to be held. Given the unexpected size of the gathering, we separated the group, with the Department of Health officials conducting a health education session on malaria (focusing on prevention, early diagnosis, disease progression and treatment), while I successfully enlisted a group of 6 men and 6 women to participate in the FGDs. Each of these two groups was conducted separately. The community was consulted and informed about the decision to separate these groups, to which they responded favourably.

Mamfene

Two sets of groups were organised for the 9th of September 2005. These were to be held at Mamfene, an area close to Jozini town. Unfortunately the first set of groups did not materialize because of a funeral at the local Induna's homestead. It was therefore cancelled.

The second set of groups was set at a locality eight kilometres away from the cancelled one. As pertained with the Ndumo FGDs, a relatively large number of people gathered progressively at the community hall. With the community's consent, two manageable groups of six people each, comprising separate groups of women and men, were formed. The sixth group that is reported on here is of women in the Mamfene group followed by the last group of men in the same area.

Shemula

These two planned FGDs were not successful because of a severe storm that broke out on the day fieldwork was scheduled. The only suitable time when the researcher was available was not convenient for the community because it coincided with their pension day. Given resource constraints, these two groups were subsequently cancelled.

Thematic Analysis of Focus Group Discussions (FGDs)

A total of six FGDs were conducted, comprising adult male and female groups of mixed levels of literacy. The results of the thematic analysis of data are presented below.

THE POSTER

Accessibility

The poster was the most familiar printed material in all but one area where the discussions were held. The participants stated that they had seen the poster at

the clinics, hospitals and the offices of the MCP staff. At Mamfene, both the male and female groups indicated that they had never seen the poster before. It is not clear why these groups had not seen the poster, as it was the oldest printed material and has always been available in most parts of the district. It should be noted though that Mamfene is one of the low risk areas among the chosen areas for the study.

Participants' reflections on the graphical messages

The community members offered varied interpretations of the poster and the graphics presented therein. Focus group members indicated that they were somewhat confused by the size of the mosquito depicted in the poster. Thus, the larger than life sized mosquito roused confusion among the participants. This magnification resulted in the distortion of facts and interpretation by focus group members, the majority of whom were illiterate. One participant from Tetepan said:

> *We have never seen that mosquito before.*
>
> *Like me, I usually see this one in the urban areas (meaning where he works as a migrant labourer) ... this big one (pointing to the mosquito on the picture) usually sits next to the door ... it does not get inside the house.*
>
> *... but the one I usually see is the small one ...*

The participant was confused by the big insect that "looks like a mosquito but does not bite". Similarly, another participant had difficulty in making a link between the picture he saw with what he knows and understands about malaria and mosquitoes:

... maybe this mosquito is not like the other mosquitoes. Maybe this one that carried the parasite is different from the other ones. This one is different from the other ones.

At Mamfene where they indicated that they had never seen the poster before, one of the participants indicated that:

...if I were to come across a mosquito this big, I would get sick.

During the discussion it became evident that the participant was alluding to the fright that would engulf her if she were to see such a "monster" mosquito. The response was a figurative reference to the visual perception of a big mosquito. This interpretation was still indicative of the distortion and loss of meaning that is created in people's minds when they see a mosquito that is out of proportion to reality. In another light, it could have the unintended effect of desensitizing people towards the very real danger posed by mosquitoes, by implying that the 'smaller' mosquitoes are not dangerous. It is fortunate that the community has received extensive health education that would hopefully mitigate against these perceptual distortions.

The fact that a magnifying glass was added to demonstrate that the illustration was magnified was understood by a few people, as one young man from Ndumo stated:

I think that this one tries to tell us that the mosquito that causes malaria is very small.

We understand that the malaria mosquito is small and the big one is just a drawing.

Despite the distortions brought about by the illustration, a clear message of susceptibility to malaria was evident in the discussions. The participants indicated that the poster relayed a warning:

> *What I can say is that when you look there that insect is big and that person seems to be in hospital. So what I can see is that the picture shows us that this is dangerous, you end up there in hospital.*

From the above quote it is evident that the participant was pointing to the causal link between being bitten by a mosquito and ending up in hospital. The participants were able to associate what they saw on the poster with malaria.

> *First thing is the mosquito, is a well-known insect that carries the malaria parasite. Even the youngest kids now know that when you talk about mosquitoes, you are talking about an insect that carries malaria.*

Participants' reflections on the textual messages

One of the major shortcomings of the poster is that the text is written in English. The majority of the community members were barely literate or illiterate and had difficulty relating to the language used in the poster. It became apparent that the community was acutely aware of this language barrier, with one participant simply indicating that:

> *.... the poster is in English and not understandable to most of us...*

The font, colour, size and language of the poster

The font and colour somewhat surprisingly elicited little spontaneous response from the participants. The participants did not pay much attention to it even when probed directly by the researcher. However, some participants in the

Women's group at Ndumo indicated that the colour was not attractive enough whereas the Men's group at Ndumo indicated that the colour would attract you from the distance.

> *You can get attracted to it [the poster] even if it is posted far away, you can just see it and wish to get closer to it because of these colours.*

Similarly, the participants did not appear to pay much attention to font size, with direct probes eliciting the following response:

> *The font is right (fine). But it should be available in the acceptable language.*

The size of the poster was also not something that the participants were spontaneously interested in. Some felt that it was the right size whereas others felt that it should be bigger. It was therefore not considered as an aspect that the participants felt important to them.

As stated above, the language was of importance to the participants, especially those who could read. The participants felt that the poster was not appropriate for their local community:

> *This [the poster] is not supposed to be used for the local community because you will find that I cannot speak English but if it was written in IsiZulu, I would be able to read what is there. I think it should not be supplied to the community if it is written in English.*

<u>Emerging interpretation and meaning of the poster to the participants</u>

The group discussions indicated that the community perceived the poster as a "thought provoking" medium. This conclusion emerged from the responses

that linked the poster to the general health education messages that were quite often regurgitated during the discussions. One of the responses was that:

> *Firstly, we are told that we should have environmental cleanliness in our homes. We shouldn't have open pits that can contain water. We also should ensure cleanliness everywhere.*

The above response indicated the impact of the general health education messages implemented by the KZNDoH MCP, outside of these IEC materials. Another interesting response indicated the accessibility of information to the community, with one participant stating that:

> *First thing is the mosquito, is a well-known insect that carries the malaria parasite. Even the youngest kids now know that when you talk about mosquitoes, you are talking about an insect that carries malaria.*

The level of empowerment using information as a tool was evident when one of the participants described details of the vector, namely the mosquito:

> *There is this parasite that is carried by a female mosquito. That is why they say it is a female mosquito because a female mosquito lays the eggs, which is why you end up having malaria.*

The latter response was outside of the messages contained in the poster and pamphlet, and indicated a relatively sophisticated knowledge base enjoyed by some participants.

The emerging perception regarding the poster is that this IEC initiative succeeds in imparting its basic messages through its graphics rather than through the inappropriate language used. Poor use of scale in the picture of the mosquito had a potentially contrary effect and overall, participants clearly drew

on their knowledge base of malaria outside of this medium to make sense of its messages.

THE PAMPHLET

Accessibility

Unlike the poster, the pamphlet was the completely unfamiliar to participants in all the areas covered in this study. All groups indicated that they had never seen the pamphlet before. However, this was taken as an opportunity to use a new form of printed material for evaluation to determine its accessibility in terms of relaying clear messages in the community in general.

Participants' reflections on the graphical messages

Unlike the poster, the pamphlet privileges the transmission of messages through pictures, with limited use of accompanying text. The picture of a shield and a spear (Figure 3) shown in the pamphlet had a symbolic meaning intended by those who developed it. This symbolic meaning was clearly picked up by all participants in the FGDs. One of the senior officials within the MCP indicated that:

> *The design of the front page was done keeping in mind the Zulu culture where the shield is used to protect warriors and is associated with fighting, in this instance the fight against malaria.*

The participants' responses coincided with the intended message:

> *As far as I'm concerned ... I think that the shield and the spear are our weapons. Here they try to show that there is a war with malaria.*

I can see a battle (war) immediately...

It shows us that we should fight against malaria.

... there is a war here ... a war against malaria ... it means that there is a fight (war) because there is a shield and a spear. You must protect yourself ... you are stabbing on one side and shielding yourself on the other side.

Page two of the pamphlet shows a picture of a blood-fed mosquito and a danger sign with a skeleton (figure 4). This evoked reactions of fear, a sense of danger and a sense of susceptibility from the participants. For instance, when one of the participants at Ndumo saw the picture of a blood-fed mosquito, he was startled:

*Ey!!! (*In a frightened high voice as if seeing something very scary*).* *Here there is a malaria which hits you immediately, you see a mosquito...*

Most participants felt that the blood-fed mosquito was showing danger that was lurking and warned them of the consequences of being bitten by a mosquito. In essence, they felt that it was a personal communication to them that they should protect themselves and prevent any mosquito bites that could lead to them contracting malaria.

You see the danger sign clearly shows that one can die here, and then they would see the insect (mosquito) and they would know that it is the mosquito and that it carries malaria.

Page three contains pictures showing signs and symptoms of malaria. The main important signs and symptoms of malaria include headache, chills, shivering, sweats, fever, loss of energy, loss of appetite and aching joints. The signs and symptoms may present in varied and peculiar ways and may include diarrhoea. When the participants evaluated the pamphlet, they noted that the woman holding her head was suffering from a headache. However, this was not without exception, with some illustrations causing a degree of confusion. For instance, in the illustration of the woman with the headache, a bead bracelet was shown on her wrist. Such a bead bracelet is often worn by people in the local area to signify a recent consultation with local traditional healers. The interpretation of some participants therefore, was that the woman had been to a traditional healer before consulting a clinic, which is contrary to the treatment seeking behaviour being promoted.

The participants also noted that the person sleeping on the bed was feeling cold and suffering from a fever. They made this interpretation on the basis of the fact that the person was covered by a towel and a blanket in the picture shown on the pamphlet.

> *We can tell by the blanket the boy has and the towel on top of him that he is feeling cold and also sweating and wiped by the towel.*

The other signs and symptoms that were noted included the woman sleeping next to the wall. The participants noted that the person was sleeping because she had lost her energy. Most participants could see that she was suffering from malaria.

The pamphlet pictorially depicted a series of events that led from signs and symptoms through to treatment seeking at a health facility. Thus, after illustration of the signs and symptoms, there is a picture of a nurse and a patient. The intention was to show that when a patient experiences the signs and symptoms of malaria, s/he should consult a health facility to get a diagnosis (rapid blood test) and treatment. In the line-listing of a malaria case investigation, the patient who presents with malaria signs and symptoms should be tested before he or she receives treatment. Given that the pictorial series skips from signs and symptoms to the nurse and patient, the diagnostic and treatment steps in case management have been blurred. Given the participants' exposure to the health facility procedures, they picked up on this discrepancy in interpreting this picture, and spontaneously indicated that:

There is something missing in the picture.

Some participants referred to diagnostics steps, for example:

The nurse is checking malaria from the patient.

That shows that the person is going to check the parasite,

while other participants thought that treatment was being given, viz.:

Those are the pills.

In fact those were really the pills and participants agreed that the nurse was in fact giving out tablets to the female with a baby at her back. In addition, in the background to the picture showing the nurse and a patient, family planning pictures were shown. However, this background was not significant to the participants as no one mentioned it as one of the shortcomings of the pamphlet.

The back of the pamphlet shows preventative measures. It shows the annual insecticide residual spraying provided by the MCP, the use of a mosquito net, the use of aerosol sprays for killing mosquitoes, the use of repellents that are smeared on the body and the use of mosquito coils. These were noted and understood by the participants, including in particular the annual residual spraying as a preventative measure.

The most important feature of the pamphlet is that the graphics needed no explanation. Even those people who were illiterate were able to immediately pick up the message intended. As one participant succinctly retorted:

...even a person who can't read is put in the picture immediately.

Participants' reflections on the textual messages

The strength of the pamphlet is that the graphics paint a clear picture of the message intended. The text found in the pamphlet seemed understandable to the participants as it is written in IsiZulu. Those who could read were able to immediately link the graphics with the text quite easily.

The font, colour, size and language of the pamphlet

The participants felt that the font was fine. Those who could read indicated that the font was readable and they thought it was acceptable. The real colours used to depict people and health promotion messages also appeared to work well. The language was also acceptable as the local language was used and participants felt that the short sentences that were used were easy to understand. While the size of the pamphlet was acceptable to participants, it

was particularly interesting to note that a number of participants in three of the groups felt that a poster in this form would work well.

Emerging interpretation and meaning of the pamphlet to the participants

The thematic analysis of the pamphlet revealed a relatively high degree of resonance between the intended messages contained in the pamphlet and the participants' response to these messages, save for some degree of confusion regarding diagnostic procedures and actual treatment. Despite the fact that it was the first time they were exposed to the pamphlet, participants engaged themselves quite enthusiastically with the material.

Chapter Five

INTEGRATION OF FINDINGS AND DISCUSSION

Poster

The poster was well-known by participants of all groups, except those residing in Mamfene. While the majority of participants stated that they had seen the poster before either at a health care centre or the Malaria Control Offices, no one reported seeing it at the community centres like shops, community halls and tribal authority offices, where they had been posted as well.

Two main issues emerged from the review of the poster during the focus group discussions. These included the language used and the confusion about the purpose of a few illustrations or drawings.

The language used for the poster is English. It was evident that the majority of participants could not read English, thus making the poster inaccessible and undermining the clarity and impact of the intended messages. It is difficult to understand or justify why English was used in a rural predominantly IsiZulu speaking community. Even those who claimed to understand what the poster was about tended to cite other factors that were not shown in the illustrations, for example environmental cleanliness as well as signs and symptoms of malaria. In this respect, it appeared that the sight of a mosquito, in particular, was particularly useful in triggering existing knowledge pertaining to the information received from mass communication campaigns. The language used

in the poster was therefore considered inappropriate when considering the community it was intended for.

The second issue that came up from the focus group discussions was that some of the illustrations used sowed a degree of confusion among participants. Based on the interview data, the officials claimed that the use of the illustrations was intended to make it easier for even those people who could not read to understand the message. However, it was clear that some of the illustrations had unintended consequences. For example one of the groups, the illustration of the large mosquito was interpreted quite literally, as they took it to represent a life-size mosquito, thereby undue fear and confusion. This group was from the southern area which was considered to be low risk. When comparing these responses to those from the high risk area further north, the latter participants could tell that the mosquito was magnified for illustrative purposes only. A similar problem pertained with regard to the smaller mosquito under a magnifying glass. For some participants, the purpose of the glass was unclear and indeed sowed confusion again. As a matter of fact, the officials reported that during IEC campaigns, the size of the large mosquito and the issue of magnifying glass were clarified, therefore vindicating the argument that these illustrations caused more trouble than they were worth.

In addition to the mosquito illustration, there is the illustration of the naked child standing outside what seems to be a hut. Neither the health officials nor the participants could justify or fathom the purpose of this illustration. A number of interpretations were advanced by participants, including that the child was cold, that this showed that the child had malaria, that adults and

children should be clothed as a protective measure against mosquito bites, etc. While this image did elicit an unintended positive message for some participants, other participants were confused, and overall, the illustration did not appear to be a vehicle for a carefully selected message.

The poster was imported from elsewhere and modified for the consumption of the local community. There was, however, contradiction between the responses from the informants. One informant stated that it was from the National Department of Health whilst the other indicated that it was from another country. It was evident that no one was sure where the poster came from. Be that as it may, the KZNDoH officials indicated that it was in fact designed in another language and because of the need to have local printed material, the team adopted it for use locally. In this regard, it is clear that while it was adopted, insufficient thought was given to its adaptation and suitability for the local context and audience.

Pamphlet

Despite the claims from the KZNDoH officials that the pamphlet was accessible to the community, this assertion was not borne out by the focus group discussions. In fact, not a single participant had seen these pamphlets before.

When the participants discussed the pamphlet it was evident that the intended messages were relatively clear to them. The size of the pamphlet, the colour and font used did not appear to be problematic to any discernable extent.

The most remarkable outcome of the focus group discussions was that the heavy reliance on colour graphical illustrations, backed up by simple textual messages in the local language, worked incredibly well in conveying the intended health promotion messages. It was particularly notable that the pictures used in the pamphlet were real life pictures of local community members demonstrating key messages that the participants were able to identify with in terms of their lived experience. Overall, it was apparent that the message conveyed in these pictures did not need much translation. Even though they were backed up by the written word, the pictures told a story that was understood fairly easily and clearly by the majority of participants.

In this regard, the graphical illustration of messages pertaining to preventative measures and the signs and symptoms of malaria worked particularly well. Participants' demonstrated a sound understanding of the cultural symbolism used in the spear and shield, as intended by the designers of the pamphlet. The picture of the blood-fed mosquito with the danger sign elicited a high degree of fear appraisal, which appeared to have a positive impact on participants. Similarly, the pictorial depiction of the signs and symptoms of malaria appeared to have their intended effect.

On the negative side, a degree of confusion was evident with regard to the treatment seeking messages contained in the pamphlet, brought about by the collapsing of messages pertaining to diagnostics and actual treatment. It is clear from this outcome that less is not more, i.e. that great care needs to be taken to avoid duplication of messages and that the steps in the treatment chain needed

to accurately reflect participants actual clinical experience when they present to a clinic with the signs of symptoms of malaria.

A theoretical understanding of the response to the printed materials

At this point it is essential to analyse the data from a theoretical standpoint. This is done with a view to adding explanatory power to the findings of this study, especially in terms of assessing the impact and effectiveness of the media messages with regard to malaria education and behaviour change.

The findings will accordingly be analysed from the perspective of the three theories that were detailed in chapter two, viz. the communication-behaviour change model, the Health Belief Model (HBM) and the Elaboration Likelihood model (ELM).

The Communication-Behaviour Change Model

As indicated in chapter two, the communication-behaviour change model facilitates an understanding of the development of and responses to the printed materials. Deriving from the five key elements of the model (viz. the source/ sender, the message, the channel, the receiver and the outcome) the following questions are pertinent:

i) How do the sender's image, characteristics and behaviours influence the credibility, clarity and relevance of the message?

ii) Was the message clear, understandable and relevant to the intended recipients?

iii) Was the selected channel an appropriate and optimal means of reaching the selected audience?

iv) Are the attributes of the recipients commensurate with the selected message source, content and channel viz. age, gender, religion, culture, language, etc.?

v) Has the desired outcome been achieved viz. did the media materials facilitate malaria education and clarify prevention and treatment seeking options?

i) How do the sender's image, characteristics and behaviours influence the credibility, clarity and relevance of the message?

In the first instance, the KZNDoH and the Malaria Control Programme in particular, has a track record of reaching out to the community with health education (e.g. distribution of media materials, talks to the community) and prevention interventions (e.g. provision of free mosquito nets, spraying of houses) and the provision of treatment services (through fixed and mobile clinics). Most of the participants in this study acknowledged several of these roles played by the Department, and demonstrated prior awareness of some of the messages conveyed in the poster and pamphlet. Based on the evidence at hand, there is little doubt that the Department is held in high esteem and enjoys the respect of the participants in this study. In this sense, the Department is ideally positioned, in terms of its image and services provided, as a credible source of the messages communicated to the community about malaria.

With regard to the behaviours of the sender with regard to the development and delivery of these media messages, however, several shortcomings are readily apparent. Firstly, data from both the interviews with Departmental officials and the FGDs with community members revealed that there was no consultation with the community in the development of the poster. In fact, the poster was imported from another country and imposed onto this community in a top-down fashion, with little adaptation of message content.

In contrast, the pamphlet was a local product, developed from scratch for this target community, with some evidence of local stakeholder participation. Although it is not clear to what extent the community was included in this process, the use of the local community members in the pictures contained in the pamphlet indicates some level of dialogue and participation. According to the officials, in fact, the community was informed about the development of the pamphlet in order to obtain their informed consent to partake in the depiction of signs and symptoms as well as to inform message development, particularly with regard to prevention and treatment seeking options.

With regard to implementation or roll-out of the media materials, it was apparent that the Department had failed to ensure adequate distribution and coverage to all affected communities (e.g. Mamfene). It is also important to note that while the poster was reportedly seen quite widely at the community clinics, their visibility in community halls and other public spaces was quite limited, as few participants acknowledged seeing these posters at these civil-society sites, as intended by the Department. Similarly, no participant reported receiving the pamphlet from any site at all. It was therefore apparent that the

sender did not exercise enough care in ensuring that the media materials were distributed as widely or effectively as planned.

In summary, therefore, it was evident that the source of the selected messages (the KZNDoH) was credible and appropriate for the task at hand. However, several failures by the sender in the development (lack of consultation) and implementation (failure in the planned widespread roll out in all areas using multiple distribution points) compromised the receipt of the message by the intended recipients.

ii) Was the message clear, understandable and relevant to the intended recipients?

Practical considerations such as length of a message, form of language and tone of voice are part of the content (Nutbeam & Harris, 1999: 19) and as such the content and form can be influential in shaping the audience feedback or outcome/s. The clarity of the message contained in the printed materials is one of the most important considerations.

With regard to the poster, many of the illustrations were found to be confusing (e.g. the child, the large and small mosquitoes) and/or ambiguous (e.g. the map of malaria areas in KwaZulu-Natal). Further, they were evidently poorly linked to the long messages that are supposedly connecting and/or elaborating them. The combined effect of poorly selected graphics with disconnected text severely compromised the clarity, relevance and usefulness of the intended message, thus excluding a large proportion of the target recipients.

Thus, for instance, participants saw a stand-alone mosquito, or a person with a drip in hospital, which helps to trigger their own memories and imaginations. These memory-triggering cues depend on specific histories of prior knowledge of mosquitoes, malaria and related issues. Two problems arise from this. Firstly, to a person who has no prior exposure and/or knowledge of malaria and related issues, the message transmitted in the poster might make little sense. Secondly, with cohorts with prior experience of malaria, the messages in the poster are open to a range of possible interpretations, in many cases unrelated to the intention of the message e.g. in the FGDs, participants started talking about environmental cleanliness and signs and symptoms that were not depicted in the poster (for instance, they started pointing out that the household should ensure that there are no tyres where mosquitoes can breed).

When it comes to the pamphlet, participants made a much clearer link between the text and the graphics. Secondly, regardless of variances in gender or literacy, participants demonstrated a relatively common and accurate understanding of the messages underlying the selected pictures (e.g. the symbolism underlying the use of the spear and shield was internalised by most participants who felt that they were at war with malaria). While prior knowledge still applies, here a more uniform response is possible because the cues contained in the pictures and stories are far more specific and clear. The areas covered were also relatively well-organised, so that participants were able to make clear distinctions between the dangerous vector (that is the mosquito), the signs and symptoms of malaria, appropriate treatment seeking behaviours and lastly preventative measures to be taken. Some problems regarding

message clarity did exist. For instance, some participants maintained that the first page of the pamphlet does not make the topic or subject matter covered in the pamphlet clear to readers. While the symbolism of the shield and spear was powerful and evocative, it was not clear to some what the war was actually about.

In relation to language considerations, it is obvious that the characteristics of the local community were not considered in the design of the poster. The local community predominantly speaks IsiZulu and is generally considered illiterate. The poster is written in English and is dense in terms of the use of written text. There is resounding evidence that this seriously compromised the delivery of the message to the intended participants. The pamphlet on the other hand is in IsiZulu and the pictures are far more closely linked to the story line. The symbolism used was also evidently in keeping with the local cultural context.

iii) Was the selected channel an appropriate and optimal means of reaching the selected audience?

The interviews with the KZNDoH officials indicated that their decision to use the print medium as a preferred channel was not based on scientific evidence but mainly on preferential choice. In general, though, the use of printed materials as an adjunct to other supplementary mass education interventions (like radio, face-to-face education through workshops and community theatre, etc.) would not be difficult to justify in terms of cost, impact and potential to reach wide sectors of the community quite quickly.

While the results of the FGDs demonstrated significant problems with regard to the impact of the poster in its current form, this does not preclude the use of posters in principle. Further, the evidence from the FGDs demonstrated a positive impact of the messages contained in the pamphlet. It is also notable that in their discussion of the pamphlet, some participants called for the use of posters 'similar to the pamphlet'.

On balance, it would appear that the selected channel of a poster and pamphlet did have value and positive impact in terms of their ability to provide cues that trigger learning outcomes based on participants lived experiences of malaria, with specific reference to what malaria is, how is it transmitted, how it can be prevented and appropriate health-seeking behaviours. The levels of impact of the selected channel on behaviour change, and consequently on the reduction of morbidity and mortality due to the disease, are less clear.

Thus the selected channels do appear to have the potential to transmit malaria messages as part of a considered and comprehensive mass communication strategy, provided that important revisions to these materials are made. Most significant among these, as emerging from the data in this study, is the balance of graphical versus textual messages. Evidence from the FGDs indicates that there was probably far more text than required, and that these textual messages often served to sow confusion rather than compliment a graphical message, more so with the poster than with the pamphlet. Further, the complimentary use of radio to transmit these same messages consistently should be considered.

iv) Are the attributes of the recipients commensurate with the selected message source, content and channel viz. age, gender, education, religion, culture, language, etc.?

While the source of the messages (i.e. the KZNDoH) was affirmed by the participants, several concerns have been addressed above with regard to the message content and selected channel. From the point of view of recipient characteristics, it is clear that the educational status and language abilities of the intended recipients did not appear to be taken into account in the design of the media materials, more so with the poster than with the pamphlet. Indeed, it is entirely likely that the poster might be a more effective communication medium for the tourists that frequent the area than for the local population, given that both the map of the high-risk malaria areas in KZN as well as the language used were certainly wasted on the participants and might be more accessible to educated tourists. It should be pointed out, however, that the distribution strategy does not favour access to these messages by tourists.

On the positive side, it was evident that that the pamphlet was certainly more in keeping with recipient characteristics, in that the participants understood and identified with the messages more readily than was the case with the poster, as a result of the use of accessible and contextually relevant symbolism, local characters in the pictures and local language.

Based on the data emerging from the FGDs, it appears that scant effort has been made to weave and embed the messages, through the selected channels, into the environmental context of the target audience. In terms of prevention, for instance, the use of mosquito coils, as recommended in the pamphlet,

appears to be a highly impractical intervention for a number of reasons. Firstly, mosquito coils are relatively costly, and may contra-indicate for persons with respiratory disorders, e.g. asthmatics. Second, the use of mosquito coils requires that airflow is kept relatively constant by ensuring that doors and windows remain closed. Given the soaring temperatures experienced in the area, particularly during the summer months when the risk of infection is greatest, this recommendation is not only impractical but highly unlikely to be implemented.

Similarly, the recommended use of mosquito repellents might be impractical in these hot conditions, as their preventative effect might be reduced as people wipe the perspiration off their bodies, particularly during the evening when they usually sit outside their homesteads and are at the greatest risk of infection.

The danger posed in not aligning these recommended preventative interventions with the environmental context of the target audience, lies not simply in the fact that the mosquito coils or repellents might not work optimally, but that the recipients of these messages might in fact enjoy a false sense of protection from malaria infection. In a worst-case scenario, therefore, the health outcomes of these media interventions might be an abandonment of viable preventative interventions (e.g. mosquito nets), in favour of impractical interventions like mosquito coils or repellents, resulting in higher risks of infection. Taking account of the environmental context, therefore, tailored messages that advocate fewer but workable preventative interventions (e.g. the use of treated mosquito nets) might be more advisable than those that advocate

a basket of measures that promote economically impractical and unsustainable preventative methods with dubious and unpredictable health outcomes.

Further, the interviews with the KZNDoH officials indicated that the media materials were designed for an adult population. However, younger adolescents and even children frequent the clinics and community centres that serve as distribution points for these materials. Given this reality, it is difficult to reconcile why young people were not also targeted, and in fact what impact these public communication messages might have had on them. Such an assessment, however, unfortunately lay outside the scope of this study.

In the final analysis, these apparent failures in aligning the selected message source, content and channel to the attributes of the recipients must accrue from a failure to design the materials in a scientific and participatory way.

v) Has the desired <u>outcome</u> been achieved viz. did the media materials facilitate malaria education and clarify prevention and treatment seeking options?

Notwithstanding the range of problems alluded to above, the FGDs did provide evidence of the positive impact of both media materials, more especially the pamphlet, in delivering the desired outcomes. With regard to the pamphlet specifically, the community was able to discern the meaning of a shield and a spear as depicting a message of both prevention and treatment. In their terms they indicated that it means that there is a war against malaria. They further dissected the message to indicate that the spear meant treatment and any other

method to attack malaria. The shield was perceived as symbolizing the preventative methods that were used to avoid contracting the disease. The accuracy with which the message was deciphered, despite the fact that the participants saw the medium for the first time, was impressive.

On the whole, the evidence from the FGDs suggests that the pamphlet was more effective than the poster in transmitting key malaria education messages (e.g. what is malaria, how it is transmitted, prevention options, health seeking behaviours, etc.) through a heavier reliance on colour graphics, relatively short textual messages that were in IsiZulu and were generally aligned with the graphics, culturally appropriate symbolism, the use of local characters and context, etc. The poster, on the other hand, was imported from another area and imposed on the target audience. It's impact was compromised by virtue of its favouring of text over graphics, the choice, density and technicality of language, the inappropriate scale of some of the graphics (e.g. the large mosquito), the inappropriate use of some graphics (e.g. the map), etc. Both materials, however, suffered substantially and to varying degrees from poor tailoring to the characteristics of the recipients, especially in terms of the environmental context of the local community.

Given the onslaught of a range of malaria epidemics in this area, which have produced a lived experience of high morbidity and mortality, and the considerable and ongoing efforts of the KZNDoH in malaria education, it was evident that the participants in this study had a relatively high baseline knowledge of malaria, irrespective of socio-economic status and level of education. It is therefore likely that a revised media campaign, with clear and

well-designed messages, could produce very positive impact and outcomes. Outside of improvements in knowledge of cause, transmission, prevention and health seeking options, however, the measurement of actual behaviour change produced by these materials is more difficult to assess in terms of the current purpose and design of this study.

The Elaboration Likelihood Model

As detailed in Chapter Two, the ELM offers a framework for assessing the impact of a specific media communication on targeted knowledge, attitudes and/or behaviours. ELM posits two routes of persuasion, i.e. the central route and the peripheral route. The central route is concerned with message elaboration, while the peripheral route considers the impact of six different message cues on intended outcomes. These six cues are reciprocation, consistency, social proof, liking, authority and scarcity (Honors Capstone, 2001). Although the model has been used extensively in informing and evaluating public speaking and persuasion, it provides a useful heuristic framework for the analysis of the printed materials that were evaluated in this study.

One of the ways to motivating people to take the central route is to make the message personally relevant to them. The evidence from the FGDs suggests that message elaboration in the poster failed to achieve this criterion of personal relevance for a number of reasons, including, inter-alia, the use of an alien language, dense textual information, graphics that were seemingly unrelated to the local context and audience, and disconnectivity between the

graphic and the textual elaboration of the message. The pamphlet, in contrast, appeared to evoke a higher level of personal relevance for the focus group participants. In its use of a local setting, local actors, local language, contextually relevant symbolism, and heavier reliance on graphics than pictures, the pamphlet seemed to evoke higher levels of personal identification with the messages contained. This was evident not only in the content of the focus group discussions with participants, but also in their degree of engagement with the materials and with one another in reflecting on the pamphlet. For these reasons, it is likely that message elaboration in the pamphlet was relatively deep, thereby successfully encouraging participants to choose the central route in uptake of the intended message/s to the audience.

In contrast to the central route, the peripheral route is concerned with the use of indirect methods of persuasion that provide a quick accept or reject decision of the message without deep reflection. Following is a consideration of the impact of the six peripheral cues on message elaboration, as pertained in this study.

Reciprocation: As stated in chapter two, the KZNDoH provides all malaria related health services to the community, and in reciprocation, the Department expects the community to adhere to its prescribed preventive and treatment options, including the messages contained in the media materials under review. The significant turnout of community participants for the FGDs (many of whom walked many kilometres to the advertised venues, at the word-of-mouth invitation disseminated by the KZNDoH), provides the first evidence of reciprocation by the community. Reciprocation was also evident from the focus group discussions, where the participants felt obliged to comply and adhere to

the health education messages that were disseminated to them either verbally or from printed materials.

Other possible instances of reciprocation included the increase in the number of people presenting at the health facilities over the last five years, and the report from focus group participants of their increased interest and compliance in the annual spraying campaign of the Department after receiving health education delivered by the Department.

Consistency: the uptake of treatment services and recommended prevention actions, in keeping with the messages communicated by the KZNDoH, are examples of consistency between the source and the recipient. However, it is not possible to directly apportion this consistency of actions with the messages contained in the printed materials, especially given the fact that many participants had not seen the materials, particularly the pamphlet, before the FGDs. The exact influence of the printed materials under study on behaviour change should therefore be the subject of a follow-up study.

On social proof: A key criterion for the successful impact of KZNDoH's printed materials is to establish message credibility by providing complimentary social proof. For instance, local familiar faces were used in the KZNDoH's media materials, thus providing social proof to community members about their plight with regard to malaria infection. Thus, these local people were depicted as individuals who knew their symptoms, understand that a reaction to malaria may be delayed, that cerebral malaria is irreversible and deadly, and their action is to immediately seek care. These characters initially

interpreted the confusion and hallucinations associated with cerebral malaria as witchcraft, but now understand that these symptoms might be linked to malaria.

The use of local people to convey these complex messages in the printed materials provide the social proof that is vital to success in the uptake of these messages by the target audience, and in the attitude and behaviour change that is required. This was complimented by the use of culturally relevant symbolism (e.g. the shield and spear) and the use of the local language.

The evidence from the FGDs suggests that the community identified with the local characters, local symbolism and local languages used in the pamphlet, with this social proof serving as a key peripheral route for their conviction that the disease is real and that behaviour should be modified, in line with the prevention and treatment messages contained in the materials. By the same token, it is equally clear that the poster failed to satisfy the criterion of social proof, by virtue of its use of socially distant characters and graphics and an alien language, in particular.

On liking: the liking criterion is closely related to the issue of social proof, but is concerned specifically with the extent to which the participants liked, and hence identified with, the characters used in the media messages. As discussed above, it was evident that the participants in the FGDs liked the local characters depicted in the pamphlet and that this accordingly served as a key route for message elaboration and uptake. Again, this was unfortunately not the case with regard to the poster.

On authority: A sense of appreciation of the efforts of the KZNDoH was palpable during the discussions. There were a number of references, in discussions concerning both the pamphlet and poster, to the view that the Department takes care of the well being of the community and that they knew best what needed to be done. This communication of the authority of the KZNDoH was supported by the use of its official emblem on the media materials, an observation made by a number of FGD participants. The moral and medical legitimacy of the KZNDoH was therefore well established, to the extent that some older participants of one FGD indicated that the KZNDoH knew best how to design the media materials, and that their opinions were not really important. It is difficult to determine, overall, whether the perceived authority of the KZNDoH reflected a mere dependency on the Department's symbolic authority, or whether it was based on a considered and reflective respect for the Department and its efforts. Whatever the case, the results of the FGDs indicate that the peripheral route of authority worked well as a means of message elaboration with regard to both printed materials that were presented.

On scarcity: The KZNDoH officials who were interviewed expressed an expectation that the community should allow the Department to spray their homes annually. They indicated that the community had in fact called for household spraying in response to their exposure to the printed materials that were disseminated. In terms of the FGD data, the participants stated that they were willing to have their homes sprayed annually since they believe this was done for their benefit, as discussed in the reciprocation cue. They also acknowledged their understanding of spraying as a scarce resource, suggesting that the scarcity cue appeared to work effectively in message elaboration and

uptake. However, this might have resulted in a long term dependency on the services of the Department.

The Health Belief Model (HBM)

In terms of the HBM, individuals are likely to take action to prevent, protect and promote health in view of potentially serious consequences of the unwanted behaviour (Nutbeam & Harris, 1999:19). When people realize that there is a potential threat to their well being, they are likely to take action to safeguard themselves from it.

Drawing on the data emerging from the FGDs, following is a discussion of key aspects of the HBM, namely perceived threat, perceived susceptibility, benefits, barriers, cues for action and self-efficacy.

Perceived threat

Despite the lack of a direct link between the illustrations and the accompanying messages in the poster, participants drew on their past experience and preconceived ideas about malaria in their interpretations of the illustrations of the mosquito and the person in hospital. As indicated in chapter four, the highlight of the poster was a magnified illustration of a mosquito and ending up in hospital. This illustration evoked fear in the participants of being bitten by an infected mosquito, with one participant declaring that even the hospitals are not safe from malaria. Participants also indicated that malaria is dangerous because it kills if not treated immediately, with participants seeing themselves as being defenceless against the disease. Clearly, therefore, participants

internalised a perceived threat of malaria that was evident to them from the illustrations in the poster, which in terms of the HBM is a necessary precondition for remedial action.

Similarly, with regard to the pamphlet, the illustration of the skull and cross bones, together with the blood-fed mosquito, evoked shock and fear from the participants. This indicated that the message of a threat of the illness was self-evident to participants.

Perceived susceptibility

In responding to the poster, participants frequently included words like "I", "us", "we" and "our", which indicated their sense of personal susceptibility to malaria infection. The inclusion of pictures of local people in the pamphlet, depicting signs and symptoms, prevention measures and treatment seeking behaviour, undoubtedly personalised the messages for participants, with some participants even calling these characters by name. In terms of susceptibility, therefore, the participants indicated that no one is safe from malaria.

Participants' responded to this sense of personal susceptibility by proclaiming the urgency to take initiatives to improve environmental sanitation, self-diagnosis and prompt treatment seeking. Some participants raised the issue of advising other members of the community of any suspicious signs and symptoms of malaria. Clearly therefore, the levels of both perceived threat as well as personal susceptibility, as induced through the illustrations in the poster and pamphlet, were relatively high.

Perceived benefit

Perceived benefit is concerned with whether participants appreciate the advantages of taking action with regard to malaria prevention and treatment. As indicated earlier, the KZNDoH conducts the annual insecticide spraying of homesteads. When this process was initiated, it met with resistance from the community, for example re-plastering immediately after spraying (Mnzava *et al.* 1998) and community members leaving their homesteads when it is spraying time.

One of the stated objectives of the development of the pamphlet was to instil in people a commitment to collaborate with the annual residual insecticide-spraying program. The intention in including the illustration of household spraying and the accompanying message was to persuade people to realize the benefit of the intervention. The MCP staff who were interviewed were convinced that the substantial increase in people allowing them into their houses to spray could be attributed directly to these positive messages contained in the media materials under study, an assertion that was difficult to verify, given the range of other variables influencing community behaviour, other than these media interventions. In addition all focus group discussants indicated they had never seen a pamphlet that contained an illustration of a person spraying a hut.

Empirical evidence shows that the mosquito nets, depicted in the pamphlet as a preventative measure, was perceived by the community to be beneficial (Dlamini, 2002) and a superior intervention as compared to the spraying of homesteads (Mnzava *et al.* 2000 and Mnzava *et* al., 2001). The participants of

the FGDs confirmed this view, but considered the costs of the mosquito nets to be a barrier to its use at community level.

Perceived barriers

The participants of the FGDs reported difficulty in affording the mosquito coils and other repellents suggested in the pamphlet. The participants in this study thus perceived the affordability of these preventative measures as a barrier to their use.

In addition, several factors mitigate against the successful use of both the mosquito coils and the repellents, as discussed earlier in this discussion, including cost, exacerbation of pre-existing respiratory conditions, ineffectiveness in hot conditions, etc. These factors constitute significant barriers to the successful use of these prescribed preventative interventions.

Another potential barrier is the accessibility and availability of treatment medication at some Primary Health Care facilities. For people who are closer to hospitals and other Primary Health Care facilities that provide treatment, this barrier is not a problem at all as treatment is offered free of charge. However, for those community members who have to travel large distances to clinics, and in the case of unavailability of the required medication at some facilities, these barriers to treatment are significant. While neither of these barriers were mentioned directly by participants of the focus groups, they are noted because of their potential to impact negatively on the intended outcomes of the media interventions.

Cues for action

A number of cues for action are provided in both the pamphlet and the poster. The presence of a mosquito is one of the major cues for action that reminded the participants of the danger of the vector and, by association, of the need for prevention actions and treatment seeking.

The pamphlet depicted various signs and symptoms of malaria that were designed as cues for the community to consult the nearest health facility. According to the KZNDoH officials who were interviewed, this was one of the primary objectives informing the development of these printed materials. From the responses of the participants, it was clear that these cues to action were recognised, and the objective in this respect had been met.

Self-efficacy

Self-efficacy, as it applies to the printed materials, refers to participants' belief that they can take action to prevent malaria and to seek treatment. This belief was evident in a range of comments made by participants in the FGDs, where they referred to prevention and health-seeking behaviour, for instance, that they would like to have mosquito nets in addition to the residual insecticide spraying in their home. They felt that they would be able to set up, use and maintain their mosquito nets as their contribution to personal protection from malaria infection.

Chapter Six

CONCLUSIONS AND RECOMMENDATIONS

The aim of this study was to evaluate the appropriateness of two existing printed materials (viz. a poster and a pamphlet), in delivering effective malaria health education messages at community level in the malarias uMkhanyakude Health District of northern KwaZulu-Natal. To this end key informant interviews were conducted with three KZNDoH government employees who were involved in the development and/or dissemination of the printed materials; in addition, six focus group discussions were conducted with adult male and female members of the community of uMkhanyakude. The findings of the study were interpreted through the lens of the Communication-Behaviour Change Model; the Elaboration Likelihood Model; and the Health Belief Model. In addition to presenting the main conclusions of the study, recommendations are presented hereunder detailing a number of considerations that need to be taken into account for future development of these printed materials. Finally, some limitations that constrain the study findings are also presented for consideration.

Conclusions

- The poster was simply not suitable for the local community in the study area. It caused a lot of confusion and was written in a language that was not understandable to a majority of the local participants. The poster was also dense in text, a factor that made it unattractive and unappealing.

- The pamphlet was highly successful despite the fact that the local community reportedly saw it for the first time. The heavy reliance on colour graphical illustrations and simple textual messages made it simple and easily accessible.
- Careful consideration should be taken when developing malaria health education messages. This conclusion is in line with the fact that suggestions outlined in the printed materials appeared to be impractical or ineffective and wasteful.
- The literature suggests that an iterative consultation between the sender and the recipients is vital in assuring the impact of printed materials and the effective utilization of scarce media resources. This process ensures that the selection of text, illustrations and pictures is not ambiguous, and that the link between graphical illustrations or pictures and the text is assured. This process was generally not followed in the development of these printed materials and appeared to compromise their effectiveness.
- An imported printed material does not necessarily suit all contexts. It is important to tailor-make printed materials to suit the needs of the local recipients thus ensuring maximum benefit. As a result, the development of printed materials should consider different characteristics of the recipients.
- Printed materials should be written in a language that is understandable to the recipients to ensure that it promotes a clear understanding of the imparted messages and is able to influence the desired behaviour change. The failure to make use of the local language in these printed materials compromised their effect in transmitting their essential message/s.

- It is important to monitor the distribution of printed materials to ensure a wider coverage, as this appeared not to be the case in this contextual case-study.
- The credibility of the sender is important to ensure that the recipients accept the health education messages that are disseminated.
- The intensive health education messages disseminated through IEC has had a positive impact in the interpretation of the malaria health education messages contained in these printed materials, as evidenced in this study.
- The level of education was not a major obstacle to the uptake of malaria health education messages, as prior knowledge from IEC initiatives facilitated the association of graphical illustrations with important malaria health education messages and desired action. The printed materials, in this manner, provided cues that triggered learning outcomes based on participants previous knowledge and lived experiences of malaria.
- It is clear therefore that printed materials could/should be used as an adjunct to mass communication campaigns and as reinforcers of important content and central messages contained in these campaigns.
- Although the use of symbolism was effective in the pamphlet, the importance of consulting the recipients cannot be overemphasized, as it is entirely likely that the printed material might be rejected on religious, political and other considerations, specific to context.
- The impact of the printed materials in this study was compromised by the fact that the poster was written in an alien language and the pamphlet was seen for the first time during the FGD's.

- Generally, the participants understood the potential threat of and personal susceptibility to malaria during the evaluation of the printed materials, and were able to relate these perceptions clearly during the discussions.
- In general the pamphlet is undoubtedly appropriate for the community, while the poster is not appropriate based on the considerations of language use, confusing graphic illustrations and dense text.

Recommendations

- Based on the evaluation of the printed materials, thorough ground work should be undertaken in the development of any printed material
- Characteristics of the recipients should be carefully considered when developing printed materials, as doing otherwise might lead to the waste of resources in the development and dissemination processes
- Communities for whom the printed materials are developed should be involved in the development stages. This encourages the uptake of the messages at community level and reduces ambiguity in the intended messages. It is recommended that the community be fully involved in the development of the printed materials in order to ensure relevance and appropriateness of message content, reduce confusion and ensure the fullest buy-in by the target group for the intended intervention/s.
- The choice of language used for printed materials should be carefully and thoroughly considered to ensure alignment with the intended recipients and contexts.
- It was evident that illustrations and graphics worked powerfully in assuring message transmission, suggesting that the written word should be used

economically as a carefully considered adjunct to message delivery, especially in rural contexts with low levels of literacy and education.

- Pictures and illustrations should be judiciously selected, in participatory fashion, in order to ensure that the printed material does not carry unintended connotations
- There should be systems in place to monitor the dissemination of printed materials at community level (while the poster was well accessed, the community had never seen the pamphlet). It is simply wasteful to plough resources into the development of printed health education materials without ensuring the widespread dissemination of these materials and monitoring their impact.

Limitations and Critical Reflections

- Given the role of the KZNDoH as gate-keepers on malaria issues, and their resources and entrenchment in the social fabric of the target community, I had little choice but to enlist their assistance in securing permission to conduct the study, and more importantly, in recruiting the study sample. This limitation had a huge effect on the study methodology which had to be modified to suit these circumstances. This had two consequences; viz. on the positive side, I was well received because of the positive image enjoyed by the department at community level. I noted that this could very easily have had the opposite effect on participation levels and on the study findings had their image been otherwise. Secondly, I have little doubt that, notwithstanding my efforts to the contrary, this linkage must have created an association in the minds of study participants between me as an independent researcher and the department itself, an association that has

compromised the autonomy of the study. It is difficult therefore to rule out socially desirable responses from the study participants. For my part, I have leant first-hand the difficulties of doing research in deep rural areas, and of the difficulty in this regard of matching the ideals of research methodology with local contexts. Most of all, I have had the humbling experience of recognising, confronting and accepting the limitations in my levels of control over the proceedings of my own research project.

- While the relatively small sample groups used in this study are justifiable given the objectives, scope and epistemological framework of the research, the findings do not lend themselves to extrapolation or generalisation to other contexts or sample groups.
- Focus groups generally suffer several well-established shortcomings, including in particular, socially desirable responses, the effects of groupthink and dominance of the group by more verbal and assertive members (Boyatzis, 1998). Despite my efforts to limit these effects, these shortcomings need to be taken into consideration when interpreting the qualitative findings reported in this study.
- I experienced some serious difficulty with the quality of the sound produced in noisy circumstances, which led me to discard some focus group data, again a very frustrating but not uncommon experience in qualitative research that I now know well first-hand.
- Further, in the absence of a co-facilitator, I had to guide the discussions, manage external interruptions, make notes, and operate the tape recorder all at the same time, which proved to be quite daunting. I am certain that with the support of a second facilitator, the quality of the fieldwork and data produced would undoubtedly be of a higher quality. When doing similar

research in the future, I have promised myself that I will budget for a research team.

- Other limitations included the distance I had to travel to the fieldwork site; sometimes with fieldwork falling-through because of logistical failures, and once because of pouring rain. These factors resulted in the fieldwork being far more protracted and costly than originally planned.
- Further, having had to personally enter and live in a very high-risk malaria zone, and meeting people who had lost loved ones to this deadly disease, made my research something of a personal journey in the suffering endured by our people, far away from the corridors of the academic institutions where malaria research is conceptualised, written and discussed.
- Finally, as this research study progressed, the researcher became increasingly aware of his own limitations arising from the challenges of being a novice researcher in the health promotion discipline. Salient among these was the personal challenge of conducting focus groups and interviews that truly privileged the voices of the participants rather than my own thoughts and pre-conceptions, and in applying the learned art of thematic analysis. In this sense, this dissertation should be read and understood as an account of my personal evolutionary journey in health promotion research.

REFERENCES

Agyepong, I.A., Aryee, B., Dzikunu, H., & Manderson, L. (1995). *Social and Economic Research (SER): The Malaria Manual.* Switzerland: UNDP/World Bank/WHO (TDR).

Alles, H.K., Mendes, K.N., & Carter, R. (1998). Malaria mortality rates in South Asia and in Africa: Implications for malaria control. *Parasitology Today, 14,* 369 – 376.

Bot, M., Wilson, D., & Dove, S. (2000). *The education atlas of South Africa 2000.* An Education Foundation Publication.

Boyatzis, R.E. (1998). *Transforming Qualitative Information.* London: Sage Publications.

Coulson, N., Goldstein, S., & Ntuli, A. (1998). *Promoting Health in South Africa: An Action Manual.* Sandton: Heinemannn.

De Meillon, B. (1938). A note on Anopheles gambiae Giles and Anopheles caustani var. tenebrosus Donitz from South Africa. *South African Medical Journal, 12,* 648-650.

Department of Health. (2000). Malaria Control Policy – KwaZulu-Natal.

Dladla, H. R. (2000). *Knowledge, Attitudes and Perceptions of both the community and traditional healers with regard to diagnosis and treatment of malaria in KwaZulu-Natal.* M. Soc. Sc. Thesis. Durban: University of Natal.

Dlamini, S.S. (2002). *Acceptance of insecticide treated bednets by communities of KwaZulu-Natal, South Africa.* MPH Thesis. Sweden: Umeå University.

Du Plooy, G.M. (2001). *Communication Research: Techniques, Methods and Applications.* South Africa: Juta & Co. Ltd.

Goodman, C.A., Mnzava, A.E.P., Dlamini, S.S., Sharp, B.L., Mthembu, D.J., & Gumede, J.K. (1999). Comparison of the cost and cost-effectiveness of insecticide treated bednets and residual house-spraying in KwaZulu-Natal, South Africa. *Tropical Medicine & International Health, 6 (4),* 280 – 295.

Finnegan Jnr., J.R., & Viswanath, K. (2002). Communication theory and health behaviour change. In: Glanz K., Rimer, B.K. and Lewis, F.M. *Health Behaviour and Health Education.* (3rd Ed. - pp 361 – 388). San Fransisco: Jossey-Bass Wiley imprint.

Gerbner, G. (1985). Field definitions: Communication Theory. In *1984-85 U.S. Directory of Graduate Programs*. Princeton, New Jersey: Educational Testing Services.

Halloran, J.D. (1998). Social Science, Communication Research and the Third World. *Journal of Media Development, 2,* 43 – 46.

Hargreaves, K., Koekemoer, L.L., Brooke, B.D., Hunt, R.H., Mthembu, J. & Coetzee, M. (2000). Anopheles funestus resistant to pyrethroid insecticides in South Africa. *Med. Vet. Entomol., 14 (2)*, 181-189.

Honors Capstone. (2001). Elaboration Likelihood Model, from http://www.uky.edu/~drlane/capstone/persuasion/elm.htm

Hubley, J. (1993). *Communicating Health: An action guide to health education and health promotion.* London: Macmillan Press Ltd.

Janz, N.K., Champion, V.L., & Strecher, V.J. (2002). The Health Belief Model. In Glanz, K., Rimer, B.K., & Lewis F.M. (eds.). *Health Behaviour and Health Education: Theory, Research and Practice* (3rd Edition – pp 45 - 66). San Fransisco: Jossey-Bass Wiley imprint.

Lasswell, H. D. (1948). The structure and function of communication in society. In L. Bryson (ed.), *The communication of ideas.* New York: Institute for Religious and Social Studies.

Le Sueur, D., Sharp, B., & Appleton, C. (1993). Historical perspectives in Natal with emphasis on the period of 1928 - 1932. *South African Journal of Science, 89*, 232 - 239.

Makemba, A.M., Winch, P.J., Makame, V.M., Mehl, G.L., Premji, Z., Minjas, J.N., & Shiff, C.J. (1996). Treatment practices for *dege dege*, locally recognised febrile illness and implications to decrease mortality from severe malaria in

Bagamoyo District, Tanzania. *Tropical Medicine and International Health, 1*, 305 – 313.

McGuire, W.J. (1989). Theoretical Foundations of Campaigns. In Rice, R.E. Atkins, C., editors. Public Communication Campaigns. Thousand Oaks, CA: Sage.

Miles, M.B., & Huberman, A.M. (1994). *An Expanded Sourcebook Qualitative data analysis.* (2nd Edition). U.S.: Sage Publications, Inc.

Mnzava, A., Ntuli, V., Ngxongo, S., Sharp, B., & le Sueur, D. (1998). House spraying and replastering in KwaZulu-Natal: implications for malaria vector control. *South African Journal of Public Health, 88 (8),* 1024-1028.

Mnzava A.E.P., Sharp B.L., Mthembu D.J., le Sueur D., Dlamini S.S., Gumede J.K. and Kleinschmidt I. (2001). Malaria Control - Two years' use of insecticide-treated bednets compared with insecticide house spraying in KwaZulu-Natal. S. Afr. Med. J., 91 (11): 978-983

Mnzava, A.E.P., Sharp, B.L., Mthembu, D.J., Dlamini, S.S., Gumede, J.K., & Kleinschmidt, I. (2000). Use of insecticide-treated bednets by communities reduce malaria transmission in comparison to house spraying in KwaZulu-Natal. *MRC Policy Brief.*

Nutbeam, D., & Harris, E. (1999). *Theory in a Nutshell: A guide to Health Promotion Theory.* Australia: McGraw-Hill.

Persson, L., & Wall, S. (2002). *Epidemiology for public health.* Umeå: Umeå University, Sweden.

Petersen I, Bhagwanjee AM, and Bhana A with Mzimela F. Urban Regeneration in the era of HIV/AIDS: the case of Cato Manor. In P. Robinson, J. McCarthy and C. Foster (Eds.) *Urban Reconstruction in the Developing World.* Sandown: Heinemann. 2004.

Sachs, J., & Malaney, P. (2002). The economic and social burden of malaria. *Nature, 415,* 680 – 685.

Sharp, B., Ngxongo, S., Botha, M., Ridl, F., & le Sueur, D. (1988). Analysis of 10 years of retrospective malaria data from the KwaZulu areas of Natal. *South African Journal of Sciences, 84.*

Sharp, B., & le Sueur, D. (1996). Malaria in South Africa -the past, the present and selected implications for the future. *South African Medical Journal, 86 (1),* 83 – 89.

Steinberg, S. (1999). *Communication Studies: An Introduction.* South Africa: Juta & Co.

Stuttaford, M.C. (1994). *Aspects of a Geographic Information System for Medical Geographers and Malaria Control.* M Sc. Thesis. Pietermaritzbutg: University of Natal.

Tanner, M., & Vlassof, C. (1998). Treatment seeking behaviour for malaria: a typology based on endemicity and gender. *Social Science and Medicine, 46,* 523 – 532.

Terre Blanche, M., & Durrheim, K. (1999). *Research in Practice: Applied Methods for the Social Sciences.*

Tubbs, S.L. & Moss, S. (2000). *Human Communication.* (8th Edition). UK: McGraw-Hill.

Visagie, N.J., & Sieling, W.L. (1985). Chloroquine-resistant *Plasmodium falciparum* malaria in the Natal/KwaZulu area. *South African Medical Journal, 68,* 600 – 601.

World Bank. (1993). *World Development Report 1993: investing in health.* New York: Oxford University Press.

WHO. (1946). *Constitution of First Principle.* New York: WHO

World Health Organisation Expert Committee. (1969). Planning and evaluation of Health Education services. *WHO Technical Report Series, No. 409.* Geneva: WHO.

WHO. (1993). *A global strategy for malaria control.* Geneva: WHO

WHO. (1978). Declaration of Alma-Ata. International Conference on Primary Health Care, Alma-Ata, USSR, 6-12 September 1978,

WHO. (2005). The **Bangkok Charter for Health Promotion in a Globalised World.** Sixth Global Conference on Health Promotion, Bangkok, Thailand, 11 August 2005.

Appendices

APPENDIX 1: SEMI-STRUCTURED INTERVIEW SCHEDULE FOR DOH OFFICIALS

Good day. I am a student from the University of KwaZulu-Natal. I am currently conducting research on health promotion issues important in healthy behaviour of people. I requested this meeting today to discuss issues related to malaria and in particular about the learning or information aids that are disseminated to the community. I have taken the printed materials that were developed by the Department of Health to educate the community in the malarias areas. Three printed materials are used here and these are the ones we will talk about. The first one is a poster (showing it); the second one is a pamphlet. I will record our discussion so that I can have enough time to listen to you and your views about these printed materials because writing takes time. I also would like to get more information from you, so please feel free and relaxed to talk about anything pertaining to this discussion. If you have a question about what I said, please ask as we proceed. ***The information you will give me will be kept confidential and will solely be used for the intended requirements. No names will be used.*** *Any questions so far? Now let us start.*

1. Who developed this poster/pamphlet? What led to them developing those materials? Who decided on the type of medium to be used – i.e. that the information contained in the poster should go into a poster and so on?
2. Where did they get the ideas or materials to incorporate in the development of the poster/pamphlet?
3. How was the information collated? Was it the same people who developed these materials? If not, who collated this information?
4. Where are these posters/pamphlets found in the community? Who ensures that they are available? When are they available? Who is the intended user of the poster/pamphlet? Which ages do we expect to have access and understand the messages contained in the materials in question?
5. When you see this poster/pamphlet, what do you think of it?
6. What message does it pass on to you?
7. What do you think is the intended message?
8. Do you think that there is anything that can be done in order to improve this poster/pamphlet? If there is what is it? Tell me more about your thoughts about the poster/pamphlet.
9. What has been the influence of the poster/pamphlet on the community behaviour towards malaria since they were exposed to it? What has changed? Why has it changed? Probe further as responses are given. Explore impact on adults versus children, males versus females.
10. What are your comments about this poster/pamphlet? Are the colour, the size, the layout and the font appropriate? What are your comments about the use of pictures?

We have reached the end of our discussion. Thank you very much for your responses in this discussion. Do you have any questions related to our discussion today?

APPENDIX 2: SEMI-STRUCTURED INTERVIEW SCHEDULE FOR COMMUNITY FOCUS GROUP DISCUSSIONS

Sanibona! I am a student from the University of KwaZulu-Natal. I am currently conducting research on health promotion issues important in healthy behaviour of people. I am here today to discuss issues related to malaria and in particular about the learning or information aids that are used to educate the community. I have taken the printed materials that were developed by the Department of health to educate the community in the malarias areas. Three printed materials are used here and these are the ones we will talk about. The first one is a poster (showing it) and the second one is a pamphlet. I will record our discussion so that I can have enough time to listen to you and your views about these printed materials because writing takes time. I also would like to get more information from you, so please feel free and relaxed to talk about anything pertaining to this discussion. If you have a question about what I said, please ask as we proceed. Unfortunately, I will not give answers to the content of these materials, as I am interested in finding out your understanding about them. ***The information you will give me will be kept confidential and will solely be used for the intended requirements. No names will be used.*** *Any questions so far? Now let us start.*

Knowledge about the poster/pamphlet

Have you seen this poster/pamphlet before? Where did you see it? Tell me more about the poster/pamphlet.

Perceptions about the poster/pamphlet

When you see this poster/pamphlet, what do you think of it? What message does it pass on to you? Do you think that there is anything that can be done in order to improve this poster/pamphlet? If there is what is it? Tell me more about your thoughts about the poster/pamphlet.

Influence of the poster/pamphlet

What does this poster/pamphlet teach you? In your opinion, what impact will this poster/pamphlet have on the community? Probe further as responses are given. Explore impact on adults versus children, males versus females

Comments about the poster/pamphlet

What are your comments about this poster/pamphlet? Probe for impact of colour, size, layout, font, text versus graphics, etc. if not spontaneously volunteered.

We have reached the end of our discussion. Thank you very much for your responses in this discussion. Do you have any questions related to what we discussed about today?

APPENDIX 3: PROOF OF ETHICAL CLEARANCE

RESEARCH OFFICE (GOVAN MBEKI CENTRE)
WESTVILLE CAMPUS
TELEPHONE NO.: 031 - 2603587
EMAIL : ximbap@ukzn.ac.za

UNIVERSITY OF KWAZULU-NATAL

13 MARCH 2007

MR. SS DLAMINI (200301738)
PSYCHOLOGY

Dear Mr. Dlamini

ETHICAL CLEARANCE APPROVAL NUMBER: HSS/0010/05M

I wish to confirm that ethical clearance has been granted for the following project:

"A community based evaluation of selected Malaria Health Education printed materials in northern KwaZulu-Natal"

Yours faithfully

MS. PHUMELELE XIMBA
RESEARCH OFFICE

cc. Faculty Office (Post-Graduate Studies)
cc. Supervisor (Mr. A Bhagwanjee)

Founding Campuses: Edgewood Howard College Medical School Pietermaritzburg Westville

APPENDIX 4: PROOF OF PERMISSION TO CONDUCT RESEARCH

INTER-OFFICE MEMO

Malaria Control Programme

Department of Health, P.O. Box 002, Jozini, 3969
Tel.: 035-572 1021 Fax.: 035-572 1090

To	:	**Mr. S.S. Dlamini**
Date	:	**28 April 2005**
Re	:	**Conducting research in fulfilment of Master of Health Promotion qualification requirements**

I refer to your communication regarding your request for permission to conduct a research project entitled **"A community-based evaluation of selected Malaria Health Education printed materials in northern KwaZulu-Natal"** in fulfilment of your post-graduate qualification. I have pleasure in informing you that permission to undertake the study, as requested, has been granted. I believe that the information that will be obtained from the study will not only benefit you academically, but will also be of benefit to our programme and inform our decisions in terms of the development of our printed materials.

I take this opportunity to wish you success in your endeavours.

Yours Sincerely

Mr. D.J. Mthembu
Programme Manager: Malaria Control Programme

APPENDIX 5: PARTICIPANT CONSENT FORM

Dear Participant

Research Project: A community-based evaluation of selected Malaria Health Education printed materials in northern KwaZulu-Natal

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1. I, **Sicelo S. Dlamini** from the School of Psychology at the University of KwaZulu-Natal, am conducting this study in partial fulfilment of my degree (Masters in Health Promotion) under the supervision of Mr AM Bhagwanjee
2. This study is aimed at increasing our understanding of the effectiveness of two malaria health education materials at community level.
3. If you agree to participate, you will be asked to give your views on two malaria education materials in interviews and group discussions.
4. Your participation is completely anonymous and your responses are confidential. This means that you cannot and will not be identified individually.
5. If you decide not to participate, you can withdraw at any stage of the process.
6. I understand that the interviewer has no financial obligation to my household or me as a result of my participation in this study.
7. You may ask any questions about the study. Anil Bhagwanjee is available on 031-260 7973 or 083 777 4973 to answer any queries that you may not think of now.
8. Signing your name at the bottom means that you agree to participate in this study.

I, _____, agree to participate in the study as described above. I understand that my participation is entirely voluntary and that I can withdraw at any time. If I have any questions I can call Anil Bhagwanjee on 031-260 7973 or 083 777 4973

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Participant Signature Date