

**A MODEL TO FACILITATE SOCIO-CULTURAL CONGRUENT MALARIA CARE  
THE TRAINING OF HEALTH EXTENSION WORKERS IN OHANGWENA REGION,  
NAMIBIA**

**A THESIS SUBMITTED IN FULFILMENT OF THE REQUIREMENTS FOR THE  
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DOCTOR OF PHILOSOPHY IN PUBLIC HEALTH**

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**BY**

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## **DECLARATION**

I, Selma Ingandipewa Uushona, hereby declare that the content reflect in this book is the true work of research study. The references from other study sources were acknowledged throughout the content of this thesis. This piece of work is new and have never been submitted for degree in higher learning institution in Namibia.

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## **ABSTRACT**

The purpose of this study is to explore and describe the socio-cultural factors that influence Malaria prevention and control, conceptualise the study findings by developing the socio-culturally congruent training model, describe and evaluate it in order to assist trainers to incorporate social and cultural information during their theoretical and practical training of HEWs, to improve their competency. The study is descriptive and exploratory in nature, used convergent parallel design in which both quantitative and qualitative carried equal weight and data are collected at the same time from inception to completion of the study. Approximately 220,683 individuals were impacted by this study . Findings were generated from survey using only one questionnaire which was administered to 402 participants, 8 focus group discussions, and 20 in-depth individual interviews, supported by observations from 20 households and respondents who were 18 years or older. Data obtained from the structured questionnaire and checklist were analysed using the statistical package for social sciences (SPSS), and descriptive statistical analysis was applied to summarize quantitative data into easily identifiable relationships and data interpretation.

Qualitative data from interviews were analysed with ATLAS. ti software. Thematic analysis was applied using a coding operation aimed at shortening the diversity of memos, quotation groups, and links into fewer content categories. The result of the study indicated that traditional and cultural methods of Malaria prevention is widely available but not applied. Mosquito nets generally available but not used due to the following reasons: 68.7 percent of the respondents felt that nets were expensive, 12.70% indicated not comfortable with using net just to mention a few. The results also revealed important among the other findings that participants perceived traditional and cultural methods of Malaria prevention is widely

available but not applied, tumble weed is widely referenced as a herb for Malaria prevention, participants perceived low economic status influence negatively prevention of malaria and access to care, and nets generally available but not affordable and used.

The outcome of the study is a Model developed and its operationalization guidelines were established. It is recommended to start training of trainers to facilitate empowerment of Health Extension Workers through collaboration and consultation with relevant authorities to enact integrated curriculum for inclusion of socio-cultural congruent prevention strategy and make it available to donors/NGOs.

In addition, the government and funded donor organization to ensure balance in sustain of indigenous knowledge in limited resource setting. Advocate for research collaboration on local traditional practices with social science and western modern care practices by identify local resource used in Malaria prevention.

## **DEDICATION**

This dissertation is dedicated to my husband Teya and our siblings, Inekeela Tangi, Ombili Ogame and Shishani TwahafifwaTukwatha, because of you I know joy and tolerance, I am grateful for your support and it has been amazing to be on this journey with you.

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## **LIST OF ACRONYMS**

FGD	Focus Group Discussion
GDP	Gross Domestic Product
GRN	Government of the Republic of Namibia
HEW	Health Extension Worker
IRS	Indoor Residual Spraying
ITN	Insecticide Treated Net
KAP	Knowledge Attitude and Practice
LLIN	Long lasting insecticidal net
MDG	Millennium Development Goal
MoHSS	Ministry of Health and Social Services
NSA	Namibia Statistics Agency
NVDCP	National Vector-borne Disease Control Programme
SPSS	Statistical Package for Social Sciences
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
WHO	World Health Organisation

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## CHAPTER ONE

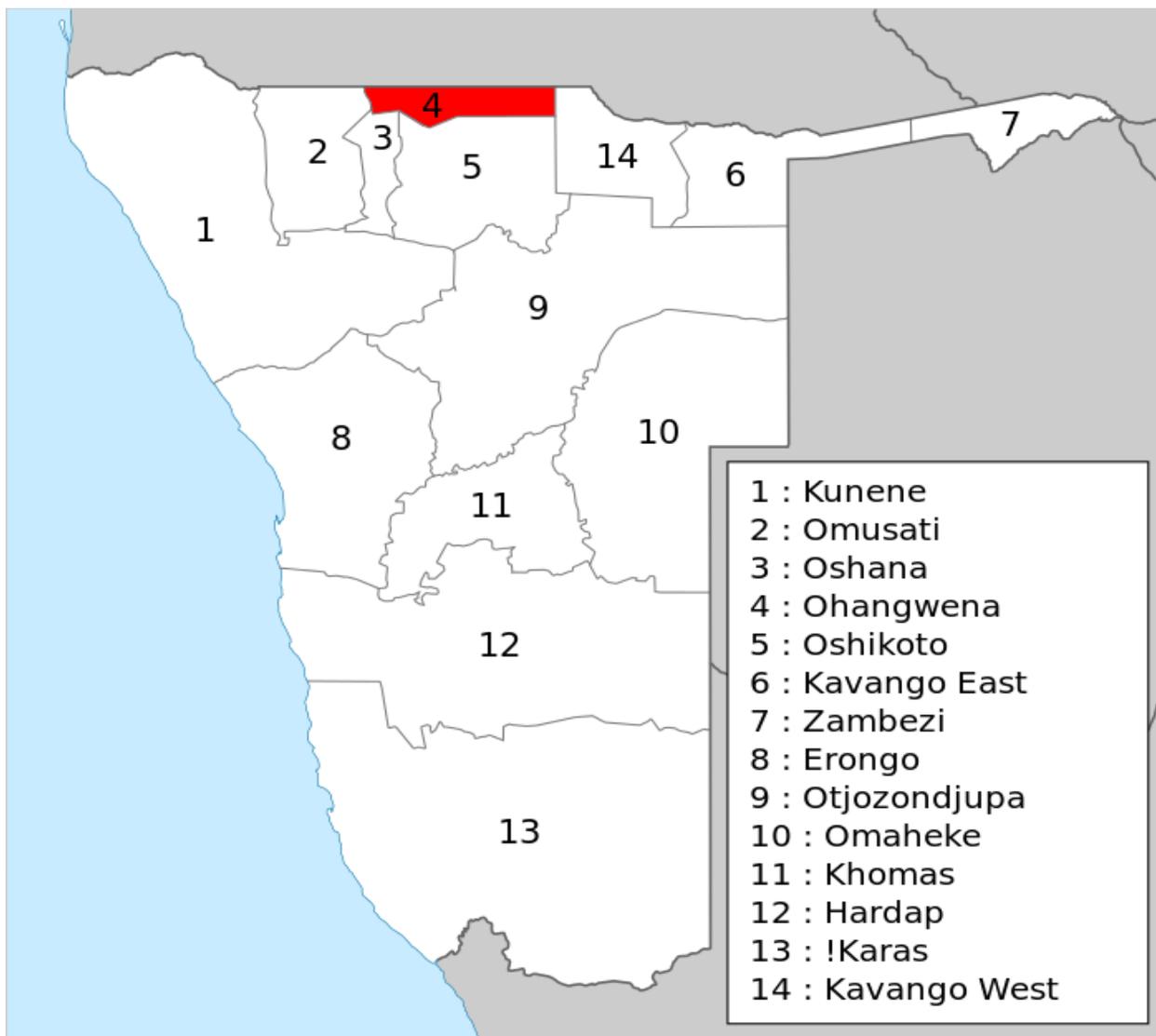
### INTRODUCTION AND BACKGROUND TO THE STUDY

#### 1.1 Introduction to the Study

Malaria remains a major cause of morbidity and mortality globally and more specifically in Africa (1). Its prevention, specifically in Namibia, is influenced by many factors, among others the social and cultural factors. Culture underlies healthcare delivery at client, provider, and system levels because it is the foundation for expectations, actions, interactions, and meanings of care. As communities grapple with the realities of human morbidity and mortality, issues of culture come into focus in ways that heighten the relevance of cultural practices at each of these experiences. In its accelerated efforts towards the elimination of malaria, the Ministry of Health and Social Services (MoHSS) introduced the training and deployment of Health Extension Workers (HEW) in various regions with the aim of improving access to prevention resources and information for malaria, Tuberculosis (TB) and HIV/AIDS(2). However, in general, the training of HEW omits the socio-cultural aspect in equipping the HEW with the required knowledge and skills which, if added, could contribute to and enhance the results of the HEW programme and Namibia's overarching goal of eliminating Malaria by 2020(3) The malaria prevention and control strategies in Namibia are guided by the National Malaria Strategic Plan 2010-2016(3). The strategic plan was designed to guide the country's reorientation of the National Vector-borne Disease Control Programme (NVDCP) towards a Malaria free Namibia by 2020. With this overarching goal, there is continual attention of the NVDCP to the cause and effect relationship between Malaria prevention and control strategies and their outcomes(4).

Malaria incidences are mainly confined in the northern parts of Namibia(5) and the continued persistence of the disease appears to be largely due to socio-cultural factors(6) which are at variance with the standard prevention and control strategies. Improving disease prevention and enhancing community health outcomes requires a good understanding of cultural contexts for those who provide care and those who receive it. As such, the central theme of this study was the contribution socio-culture practices make to the overall health outcomes for people in general under a variety of contexts, conditions, settings, and situations.

To strengthen the outcomes of the standard malaria prevention and control strategies being implemented by the NVDCP(7), sustained efforts are needed to focus on intensified and targeted interventions which address the socio-cultural settings and challenges of rural communities. This approach needs to be incorporated into the current methodology, which overly focuses on the epidemiological transmission of malaria to design interventions(7,8)



*Figure 1: The map of Ohangwena region (adapted from The Ministry of Urban and Rural Development - Namibia)*

This study was focused on the development of a socio-cultural congruent training model for HEW for inclusion in their training methodology and curriculum to enhance the knowledge and skills they acquire for their role in accelerating access to prevention resources and information of malaria. As Namibia seeks to eliminate local transmission of malaria through a strengthened malaria control programme, the focus has steadily shifted towards steady coverage of quality indoor residual spraying, the introduction and use of long lasting insecticide-treated nets, increased

access to rapid malaria diagnosis and the introduction of the new and effective Artemisinin-based combination treatment(9). The rollout of the health extension workers programme, in which the Government of the Republic of Namibia (GRN) has deployed 188 Health Extension Workers (HEWs) as public service employees. But the estimated number for HEWs for the region is 434 which adjusted to 478 numbers(9), is a vital support component of the overall strategy of malaria elimination as it serves to extend healthcare and social welfare services from health facilities into the communities:

Previous studies have addressed the contributions of the standard malaria prevention and control strategies and the potential impact of the health extension programme on the overall goal of eliminating the local transmission of malaria in the country. However, this study goes beyond these parameters to investigate and bring to the fore the socio-cultural factors that influence the prevention and control of malaria among rural communities in Ohangwena region. This is in view of the fact that malaria prevalence cannot be adequately explained from medical and modern points of view alone. It is essential to consider other factors such as demographic information (age, gender, race, marital status, income, and employment status), religious beliefs, education, economic and socio-cultural conditions of people, and particularly rural communities such as those in Ohangwena region.

In rural communities for example, there is an abundance of herbal medicine and treatment of a variety of illnesses using single or combined prescriptions is common place. However, there are salient concerns about the safety and potency of these herbal medicines considering how they are prepared, the general hygiene during preparation and packaging(10). Nonetheless, many rural communities patronise them due to a variety of reasons including financial constraints, lack of

healthcare facilities as well as religious and cultural beliefs. Moreover, rural communities are at a greater risk of malaria infection than their upscale counterparts (urban communities) due to the abundance of mosquito breeding areas in these communities.

## **1.2 Background to the Problem**

Although malaria is preventable and curable, it remains a major cause of death among children less than five years of age, pregnant women and elderly people above the age of 60(9). The Ohangwena regional epidemiological data of 2015 indicated that 1,109 local malaria cases were recorded in that year while non-local cases stood at 546(11) This is particularly because the transmission of the disease is either perennial or seasonal, peaking in the rainy seasons which also double as planting and harvesting periods with the greatest need for agricultural activities in the region. In addition, the overall malaria morbidity among adults was 1,419 accounting for 86% in the adult people, while for children below the age of 5 years it was 123 representing 14% of Malaria confirmed cases among children. Twelve malaria deaths were recorded in the same year(11). Malaria continues to be a major obstacle to the economic development of rural populations(12) with its economic impact revolving around three key areas namely:

- (i) The direct cost for the treatment and prevention of the disease incurred by the individual;
- (ii) The indirect cost that results from economic losses at individual level; and
- (iii) The unquantifiable negative impact on the quality of life of individuals and families.

The standard malaria prevention and control strategies in Namibia include diagnosis and treatment of clinical cases, indoor residual spraying and the promotion and use of insecticide-treated nets (ITNs)(9). Over the years, these strategies have contributed to the overall decline in malaria cases from 448,265 in 2000 to 3118 outpatient cases in 2012(3). On the other hand, inpatient cases have

declined from 29,521 in 2000 to only 57 admissions in 2012(7). Better still, malaria related deaths decreased from 679 in 2000 to only 4 in 2012(7). There is a general positive reflection of Namibia's achievements in the fight against malaria. For instance, the malaria targets which were benchmarked by the Millennium Development Goals (MDGs), such as halving mortality by 2015, were exceeded. These overall achievements made against malaria have landed Namibia at a critical junction in view of the future in as far as its fight against malaria is concerned (13). For example, even when so much progress has been made, malaria incidence

varies significantly from region to region(7), and Ohangwena region shares a disproportionate burden. This presents an opportunity for new thoughts into what could sustain and further propel added value to the overall malaria elimination plan.

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

It is important to acknowledge the progress Namibia has made in the fight against malaria, which calls for sustainability and fresh thinking as the country enters the final lap towards the elimination of the disease. Namibia is among the four countries of the elimination 8 regional initiative aim to eliminate Malaria by 2015(14). However the country reported increases in the number of confirmed Malaria cases with 15914 in 2014 compared to the 4911 in 2013(15). The Ohangwena region was experienced outbreak of malaria in 2017 with confirmed cases of 50 to 100 per 1000 population(8). In 2018 the minister of Health and social Services reported 14 percent of deaths in Ohangwena region from Malaria cases(16). The training and deployment of HEWs provides an extended opportunity for communities to access information and resources for continued malaria prevention. However, their training and skills development, which excludes a consistent focus on the impact socio-cultural factors have on malaria prevention, needs to be addressed.

The Ohangwena regional epidemiological data of 2015 indicated that 1,109 local malaria cases were recorded in that year while non-local cases stood at 546(11). The overall malaria morbidity among adults was 1,419 accounting for 86% while for children below the age of 5 years it was 123 representing 14%. Twelve (12) malaria deaths were recorded in the same year(11) .

The lack of a component of culture in the training program deprives HEWs from acquiring relevant cultural knowledge that assists in convincing the community to accept the value of utilising both

standard and traditional malaria prevention strategies in complimentary and compatible ways, lifestyles, beliefs and values(17) . Incorporating cultural and social structural material in the training of HEWs would add value and enhance the impact of the HEWs programme on the communities where they are deployed. It is assumed by the researcher that HEWs need to acquire holistic knowledge and cultural competence, with its accompanying sensitivity for rendering of a comprehensive, socio-cultural congruent package of care.

A similar study was conducted in Ethiopia. However, no specific study is known to have investigated the socio-cultural factors that influence malaria prevention and control in rural communities of Namibia, let alone Ohangwena region. There is a national campaign for the provision of free treated mosquito nets to communities in malaria prone areas, but the degree to which the overall standard malaria prevention is harmonised with socio-cultural methods is in question. The distribution of free treated mosquito nets strengthens malaria prevention at individual and household levels in areas prone to malaria transmission. However, the degree to which those who receive mosquito nets benefit and/or achieve the intended benefits of the mosquito nets is disputed because several additional uses have been invented outside of the original purpose. Many community members use the nets for fishing, drying food crops and for collecting harvest from their gardens.

To the knowledge of the researcher, no specific study is known to have investigated the potential contributions of socio-cultural factors that influence malaria prevention and control in rural communities of Namibia, let alone Ohangwena region. It is this gap that the researcher seeks to fill.

In this ground breaking study in Ohangwena region, the researcher obtained empirical data to answer the key research question: What could be done to complement the existing training of the HEWs to become socio-culturally congruent with rural communities in Ohangwena region? In answering this question, the researcher investigated the factors which may include socio-cultural conditions that influence malaria prevention and control practices among rural communities of the Ohangwena region.

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

The overall purpose of this study was to develop and describe a model that would facilitate the integration of socio- culturally-congruent care, as well as to assist trainers of HEWs in incorporating social and cultural information during their theoretical and practical training methodology. This was intended to provide a platform that would positively influence the overall health outcomes of rural communities through the improved competence of HEWs who would positively influence traditional practices for malaria prevention and control in Ohangwena region.

#### **1.5 Objectives of the study**

In order to accomplish these objectives, the study was conducted in four phases and the objectives were to:

1. investigate and describe the socio-cultural malaria prevention and control practices among rural communities of Ohangwena region;
2. assess the Knowledge, Attitudes and Practices (KAP) of rural communities on malaria prevention;

3. explore and describe the perceptions of rural communities in Ohangwena region about the standard malaria prevention versus socio-cultural traditional practices (Phase one).
4. develop a conceptual framework as a basis for the development of the guidelines regarding the socio-cultural congruent training model; (Phase Two)
5. develop a socio-cultural congruent model for malaria prevention and control;(Phase Three)
6. evaluate the effectiveness of the socio-cultural congruent model in communicating malaria prevention and control messages among rural communities in Ohangwena region (Phase four).

## **1.6 Significance of the Study**

The focal point for this study was to provide guidance on how to bridge the knowledge gap on social and cultural matters in the training curriculum of HEWs in malaria prevention and control. Filling this gap would result in a sustainable process that supports the national strategy towards the elimination of the local transmission of malaria. In general, the following groups were found to benefit directly from the results of this study:

### **1.6.1 Benefit to the Health Extension Workers**

The study investigated socio-cultural practices for malaria prevention and control and provided a description of their influence in the prevention of the disease for rural communities as follows:

- The envisaged socio-cultural congruent model will assist HEWs in their quest to support rural communities achieve the goal of malaria prevention and control at household level;

- The development of the socio-cultural congruent model empowers the HEWs in their duties, which include assisting rural community members in improving local malaria prevention practices and potentially result in local malaria elimination;
- The integration of the socio-cultural congruent model in the training of HEWs improves and enriches the understanding of HEWs of what rural communities perceive and believe they can use to prevent and take ownership of malaria control using locally available and compatible resources.

### **1.6.2 Benefits to the Rural Community**

The benefits to the community generated by this study are:

- Through this study, the rural communities will be provided with a researched source of information to address ways of modification, maintain and retain local methods of malaria prevention with reference to awareness and personal protection, accommodate needs for individuals, families, households and general rural communities, sensitive to their unique social and cultural settings and circumstances.
- In addition, members of the community will be equipped with knowledge and skills that make them accountable for malaria prevention, control and potential elimination at community level.

### **1.6.3 Benefits to Students from Various Institutions**

The results of this study provide a base of evidence for scholars which is scientifically proven.

Among other benefits include the following:

- Students from various institutions and research houses will have a proven reference material for their on-going research initiatives. The results of this study are primarily hosted at the University of Namibia's repository of reference material.
- The results of this study will provide guidance and a source of knowledge for the adoption and incorporation of socio-cultural factors in disease prevention and control for rural communities.

#### **1.6.4 Benefits to the Ministry of Health and Social Services**

The results of this study will also benefit the MoHSS, particularly the NVDCP which spearheads the implementation of the strategies towards the elimination of the local transmission of malaria in Namibia by 2020. Specific benefits to the MoHSS include:

- Assisting the training institutions to expand the training programme of HEWs with additional information that incorporates the socio-cultural congruent for malaria prevention;
- Facilitating the restructuring of the existing training program on malaria prevention and control for HEWs and other health workers in general.

### **1.7 Context of the Study**

This study was limited to Ohangwena region with the purpose to explore the manner in which rural communities experience malaria prevention and how it affects their daily lives. The study was limited to the Ohangwena region, north central Namibia. Study activities focussed on exploring the manner in which rural communities experienced malaria prevention and how it affected their

daily lives. Ohangwena region is divided into three health directorates, namely Engela, Eenhana and Okongo, each with a health district. There are 24 health facilities in the region including 19 clinics, 2 health centres and the three district hospitals. The two health centres are both located in the Engela district. This study was conducted in all three health districts. The researcher conducted the study in a home environment where participants were met in their homesteads and the HEWs at their duty stations. These settings ensured the socio-cultural context for disease control which was the main focus for this study. The researcher conducted the study among rural community members, referred to as phenomenological (18), in order to obtain a description of the lived experiences of heads of households and health extension workers on the role of social and cultural practices of malaria prevention and control. The researcher was keen to understand what happened in the real lives of rural communities and to what extent traditional socio-cultural practices influenced malaria prevention and control(19). The researcher also investigated how the community members explained and attached meaning to traditional malaria preventive practices. This information facilitated the development of the socio-cultural congruent model for the HEWs. The four basic actions, bracketing, intuition, analysing and describing, explained above are a good backup system for the application and contextualization of this specific study.

Ohangwena region is divided into three health directorates, each with a district hospital, namely Engela, Eenhana and Okongo. In total, there are twenty four health facilities in the region, with an additional nineteen clinics and two health centres, both of which are in the Engela district. This study was conducted in all three health districts to cover the differences in the topography, the distances between the communities and health facilities and differences in the availability of resources. In addition, the researcher conducted this study in the home environment of the

participants and the duty stations of the HEW. In both cases, these environments were understood to be the natural settings fit for generating data relating to the socio-cultural congruent for malaria prevention and control.

## **1.8 Assumptions of the Study**

The frame of reference for this study was based on assumptions that reflect rural-community sensitive interventions built on the unique settings, beliefs, values systems, needs and circumstances(20). Assumptions is defined as “the basic principles that are accepted on the basis of faith, or assumed to be true, or as being true based on logic without proof or verification”(19). The assumptions used in this study were guiding elements for concept definitions. The assumptions used are vital directives that support the decisions made during research process(19). Additional philosophical assumptions were used in this study. Philosophy means the use of abstract ideas and beliefs that inform the research. Philosophical assumptions are typically the first ideas in developing a study. The researcher used the following types of philosophical assumptions during the course of this study.

### **1.8.1 Pragmatism World View**

The pragmatism world view was used in this study, as the rationale for adapting a multidimensional approach in this study in terms of the design and methodology. The researcher believed that multiple paradigms could help in improving the research outcome by addressing the research problem in a comprehensive way(21,22). The socio-cultural practices of malaria prevention and control are practically oriented. Therefore, to understand these factors clearly and more comprehensively, the research opted to use the mixed methods design. The researcher appreciated the strengths of each

individual design and recognized the limitations and weakness of either design in shaping the study(23). The researcher used the Convergent method where quantitative and qualitative data are merged with the aim of achieving a comprehensive analysis of the research problem. In addition, data of either design were collected and gathered simultaneously and integrated during the interpretation of the results. In order to achieve the goal of the study, the researcher used four strategies of inquiry, namely a survey using a checklist and a questionnaire in the quantitative design and observations, semi structured interviews and focus group discussions in the qualitative design. In-depth face-to-face interviews were conducted using unstructured interview schedules. All qualitative data were analysed using the thematic content analysis methodology with the aid of ATLAS.ti whereas quantitative data were analysed using the Statistical Package for Social Sciences (SPSS). Using mixed methods allows for better understanding of the research, promote accuracy and overcome the bias and weakness of each single method(20).

The researcher understood that combining quantitative and qualitative designs would support the study. In the realm of the research activity, quantitative and qualitative methods are closely linked and are sometimes inseparable. It is for this reason that an argument exists stating that each method is based on the knowledge of the other. For instance, qualitative studies require expertise in order to excel in speculation and intuition search needs connectors that bridge the construct together(24,25).

The researcher used a theory development approach and deductive and inductive reasoning design was chosen. The practice oriented theory, transcultural theory and the theory of culture care diversity and universalis, guided the development of the of socio-cultural congruent care model

The convergent parallel design was deliberately chosen to ensure the practical application of research findings, thereby guaranteeing that each method cross-checks the other to compensate for the weaknesses of either methods (see figure 2). Each approach has its own limitations which can be compensated for by the use of an alternative method to minimize bias linked to each method(21). It is impossible to express qualitative perspectives, methods, perceptions and conclusions, without communications that are, at least partially, amenable to quantitative representation and quantitative analysis(21,24,26,27). The application of mixed methods provided a clear and broad explanation of the rationale for conducting this study. It was one way to assure completeness (24), provide room for utilising various tools of data collection and assist in generating a holistic response to the research question. Findings from a mixed methods study portray a detailed outlook and can be generalised easily. Mixed methods offset the weaknesses of both qualitative and quantitative designs and build on their strength. The mixed methods also provide an understanding and connect the findings together rather than divide quantitative and qualitative findings. Mixed methods are practical and entertain diversity(24), which supports the use of all methods possible to address a research problem(20,22). In addition, mixed methods offer freedom to the researcher to use multiple worldviews, for example pragmatism. When there is a need to publish, it allows scholars to manipulate the findings to generate multiple publications from a single study. Mixed methods facilitate capacity building for learning experience, while developing competencies and skills in various research methods concurrently(21,24) . However, mixed methods are not the only approach suited for a research study. Therefore, each study needs to justify the reason for choosing its research design, approach and methods.

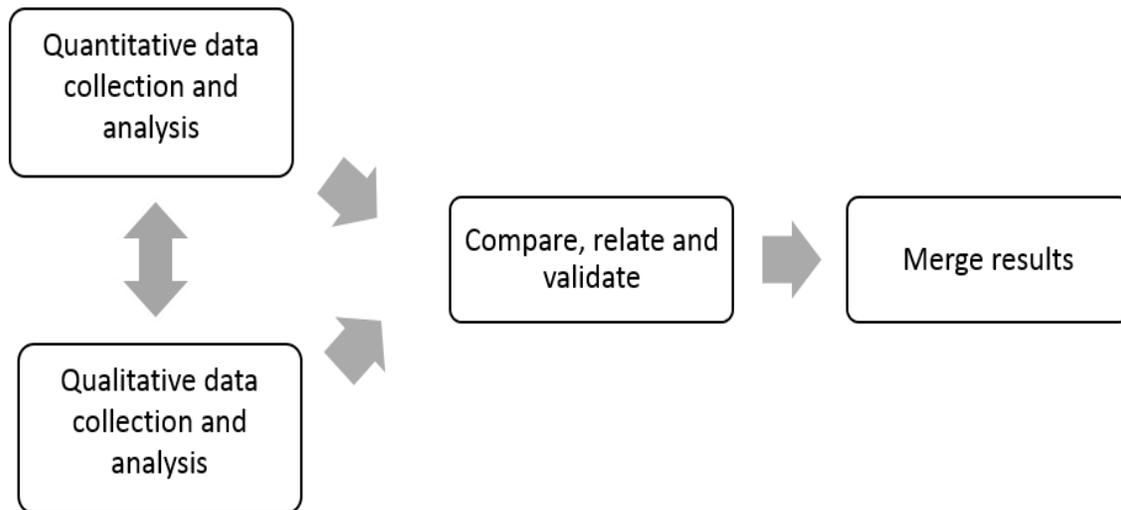


Figure 2: Mixed method convergent parallel design

### 1.8.2 Epistemology

Epistemology relates to how you know what you know(23). As such, theoretical information on traditional practices has no scientific evidence. It is therefore more prudent to devote research resources on standard modern practices (25,28). The prevention of malaria is well documented using modern standard prevention and control and practices. However, little has been documented on the influence of socio-cultural practices on malaria prevention and control, particularly among rural communities. The methods used by HEWs to impart knowledge to community members are not adequately socio-culturally sensitive. Socio-cultural issues are given little attention and many a time socio-cultural practices are undermined. The impact of socio-cultural practices on malaria prevention and control need to be proven with scientific evidence, and this was the goal of this study. Using the convergent parallel mixed methods design, data from both methods was compared and merged to form a single body of integrated findings (24). The in-depth interviews, focus group discussion, checklist and questionnaire were used to achieve completeness in the data collected

and utility in generating findings relevant to practice. This is because convergent mixed method designs accord the researcher an opportunity to compare, relate and diverge findings (22,24).

### **1.8.3 Ontology**

Ontology refers to how you view and perceive the social world, its rules as well as its structures(23). The researcher believed that the daily lived experiences of rural communities included living far away from health facilities increased exposure to the risk of malaria and limited access to timely health services. The researcher needed to focus on these lived experiences in order to discover the phenomenological ways that help to bring change in prevention and control of malaria(29). With a view to assist the community members prevent and control malaria in their daily lives, the researcher conducted the study in a way that would explore and describe what members of the rural community did to prevent and control malaria as part of an overall body of socio-cultural practices. This was intended to result in a better interpretation and the meaning of these experiences for those who hold them(19,29) .

Rural communities experience low net coverage of residual spray as some places are hard to reach. The Ohangwena region is home to cultural and socio-economically poor families, poor housing, lack of equity, access and affordability, subsistence farming and internal as well as cross border migration(30) . All these factors predispose rural communities to vulnerabilities including the risk of abandoning their own beliefs and customs(31). Climate, including seasonal changes, affects the effectiveness of malaria prevention and control practices in rural communities. There are no documented studies that focus on the perceptions and experiences pertaining to malaria prevention and control in a socio-cultural context. Despite the available standard prevention and control

strategies, malaria cases continue to rise particularly during favourable seasons such as when it is rainy.

#### **1.8.4 Methodological Assumption**

The convergent parallel design was used in the process of the study to collect, analyse and interpret data (20,22,24). The convergent parallel design was used for its flexibility and it helped to answer the research question in a comprehensive way. It is evident that socio-cultural practices that have an impact on malaria prevention and control are not researched. Combined methods were used as a salient strategy for comprehensively exploring the lived experiences of the participants and link these to the application of socio-cultural practices and the use of locally available resources for malaria prevention and control. The findings generated information needed to add new knowledge that contributes to the existing body of knowledge in this research field(25). There is no study carried on the socio-cultural practices for malaria prevention and control in Namibia, despite the fact that the country trained and deployed HEW to accelerate access to resources(2,32) for malaria prevention and control for rural communities. This study extends beyond the parameters of the academic definition of on socio-cultural practices to include direct field exposure, spending time with participants observing real life situations and documenting the social and cultural practices in their household context.

#### **1.8.5 Phenomenology**

Another assumption applied in this research was that of phenomenology. The researcher conducted the study intentionally, aiming to explore and describe the lived experiences of heads of households and health extension workers and their roles in malaria prevention, particularly

focusing on the socio-cultural congruent to support the development of this model. In order to describe the lived experiences of the rural community, the researcher was guided by four steps namely: Bracketing, Intuition, Analysing and describing. These are further described below:

#### **1.8.5.1 Bracketing**

In this process, identified personal knowledge, beliefs and opinions about the socio-cultural practices are suspended and personal experiences kept aside(19,33) for the purpose of eliminating bias during the interviews. During the research process, all preconceived ideas, prejudices, beliefs and opinions were put aside to sustain the principle of bracketing. The rationale for bracketing was to avoid personal influences on the outcome of the study. The researcher contained all existing knowledge to avoid imposing personal ideas, feelings and opinions to the participants. A neutral role was held during the data collection process, until all the information needed was collected. Care was taken not to interpret the findings with personal opinions and feelings (34). The researcher is a lecturer in the community health department, a coordinator for rural placements and a public health nurse. The researcher engaged the public to generate significant statements of essence that describe and provide meaning to what communities consider to be effective in the prevention and control of malaria. These statements facilitated the development of the socio-cultural congruent model for HEWs. The overall goal is to transform indigenous knowledge into a weapon to prevent malaria in the rural community in the region(29).

### **1.8.5.2 Intuition**

This occurs when the researcher tries to develop an awareness of the lived experiences. The information pertaining to the study is recorded, including information obtained by observations. To give the narrated view meaning, data were transcribed verbatim to help in achieving better comprehensive and clear accurate description of the phenomenon. This was done to help in determining the openness of the researcher during the course of the interviews as it indicated, described and suggested in various literature (19,29,35).

### **1.8.5.3 Analysing**

. The researcher identified, organized and categorized the information obtained during interviews in themes and subthemes. The themes, subthemes and categories were generated from the interviews by repeatedly listening to the recorder and reading from the field notes. Care was taken to minimize interruptions during interviews as the researcher assumed the role of a good listener in order to obtain information from participants. Good listening is used as a stepping stone to extract themes and subthemes as the interview progresses and to generate rich thick descriptions (18) needed to ensure accurate and honest responses from different patterns of data (19). Looking for patterns in this study was based on the study results, practice oriented theory, transcultural theory and culture competence theory. These four sentiments facilitated the analysis of the data as it was stipulated in(34) that analysing involves identifying the essence of the phenomenon under investigation based on data obtained and how the data are presented.

#### **1.8.5.4 Describing**

The aim of the describing operation is to communicate and put in writing the verbal descriptions obtained from interviews (34). At this stage the researcher wrote and communicated the research findings in the form of themes and attached meaning to each theme that emerged as well as the subthemes.

### **1.9 Framework and Theoretical Basis of the Study**

The evidence base for practice in each discipline is supported by theory and it varies from theory to theory. This study was fundamentally based on the theory development by used three theories, namely the practice oriented theory, the transcultural theory, and the theory of culture in care diversity and universality (17,36,37). These theories are further described in detail below.

#### **1.9.1 The Practice oriented theory**

The theory in practice discipline identifies six important aspects of activities that serve as an organizing principle for looking at a problem in order to discover a variety of ways to resolve it. These aspects are agent, recipient, framework, terminus, procedures and dynamics. An agent is any experienced and knowledgeable person able to identify the problem and attempt an assessment, to obtain an evidence based solution (36). The researcher is a lecturer and a registered nurse in community health, general nursing, midwifery and psychiatric health nursing and is widely experienced in nursing practice and public health issues. The researcher is an agent of change who developed the socio-cultural congruent model for the HEWs. The recipients for the socio-cultural congruent training model are the trainers of the HEWs. The context in which this study was conducted is a natural geographical area - Ohangwena region. The research activities

were performed in the households of the participants and at the duty stations of the HEWs. The procedure is the socio-cultural congruent model that will assist trainers to impart socio-cultural knowledge and skill to the HEWs to become culturally competent. The dynamic is the willingness to render meaningful socio-cultural practices and engage in the process of becoming sociocultural aware and ready to offer quality services that embrace rural communities. The terminus is knowledgeable and skillful HEWs, sensitive to the values, beliefs and practices of the rural communities.

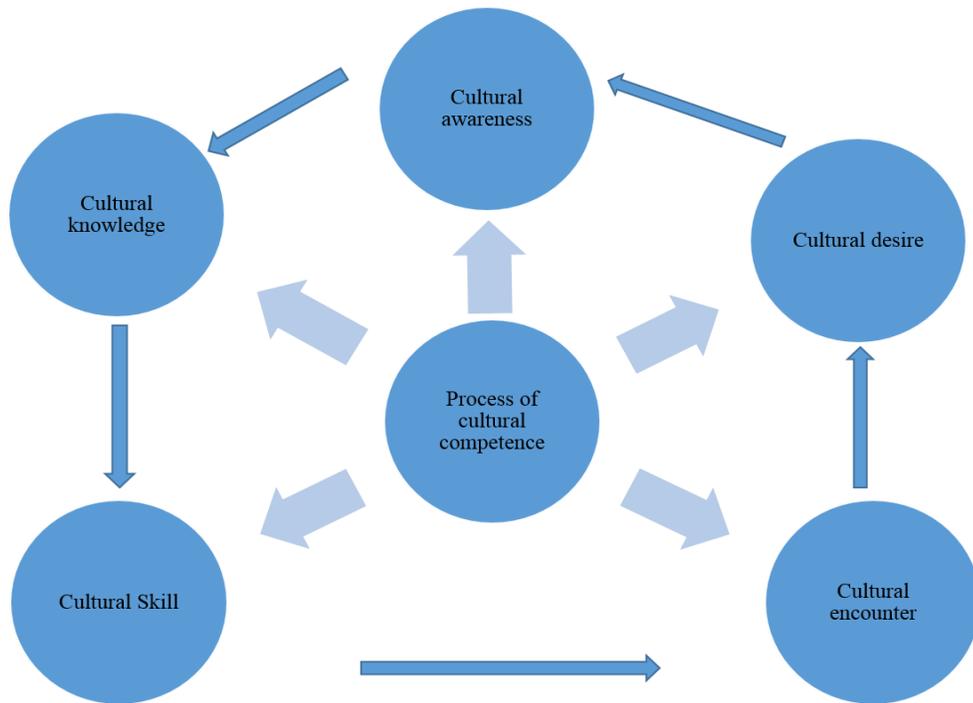
The process of acquiring socio-cultural competence is depicted in the transcultural theory, discussed below.

### **1.9.2 The Transcultural Theory**

Cultural competence is defined as a process in which the health care professionals continually strive to achieve the ability to effectively work within the cultural context of a client, be it family, individual and community (37,38). The model comprises of five constructs, namely cultural awareness, knowledge, skills, encounters and desire. “Cultural competence is the process of becoming not a state of being.”

Cultural competence is defined as a process in which the health care professionals continually strive to achieve the ability to effectively work within the cultural context of a client, be it family, individual or community(37). This model comprises five constructs, namely, cultural awareness, knowledge, skills, encounters and desire. Cultural competence is the process of becoming not a state of being. Figure 3 below expands on these views. The theory enhances autonomy and ownership of care because the community makes decisions related to their care without coercion.

The care provided is tailored to the unique cultural background of the recipients of care.



*Figure 3: Process of cultural competence*

### **1.9.3 The Theory of Culture, Care Diversity and Universality**

Trans culture is defined as a discipline with a body of knowledge and practices to attain and maintain the goal of culturally-congruent care for health and wellbeing (17). The theory stresses the importance of knowledge gained directly from experience, or from those who have learned

from experience. Such knowledge is described as emic, meaning people-centred (17). For the purpose of this study the following constructs were used: care, culture, cultural care, professional care, cultural and social structural factors, the environment context, world view and socio-culturally congruent care. These constructs are integrated in this study to promote better understanding and acknowledgement of socio-cultural practices that influence malaria prevention and control. The researcher used the components of Leininger's theory derived from the sunrise enabler developed in 2006. The culture care delivery and universality is a holistic care approach which provides a link between generic care, nursing care and professional care. Culture care is guided by action and decisions influenced by preservation and maintenance, accommodation and negotiation, repatterning and restructuring(17). The researcher looked beyond the current practice where culture for nomadic rural community is less important. The researcher used this theory to support traditional practice by generating information needed to help trainers and HEWs to serve the community in cultural competence based on culture, beliefs and values of the community they are serving. Culturally congruent care has been left behind and dominated by standard prevention practices. The following diagram illustrates the factors that influence malaria prevention and control and how they are interconnected.

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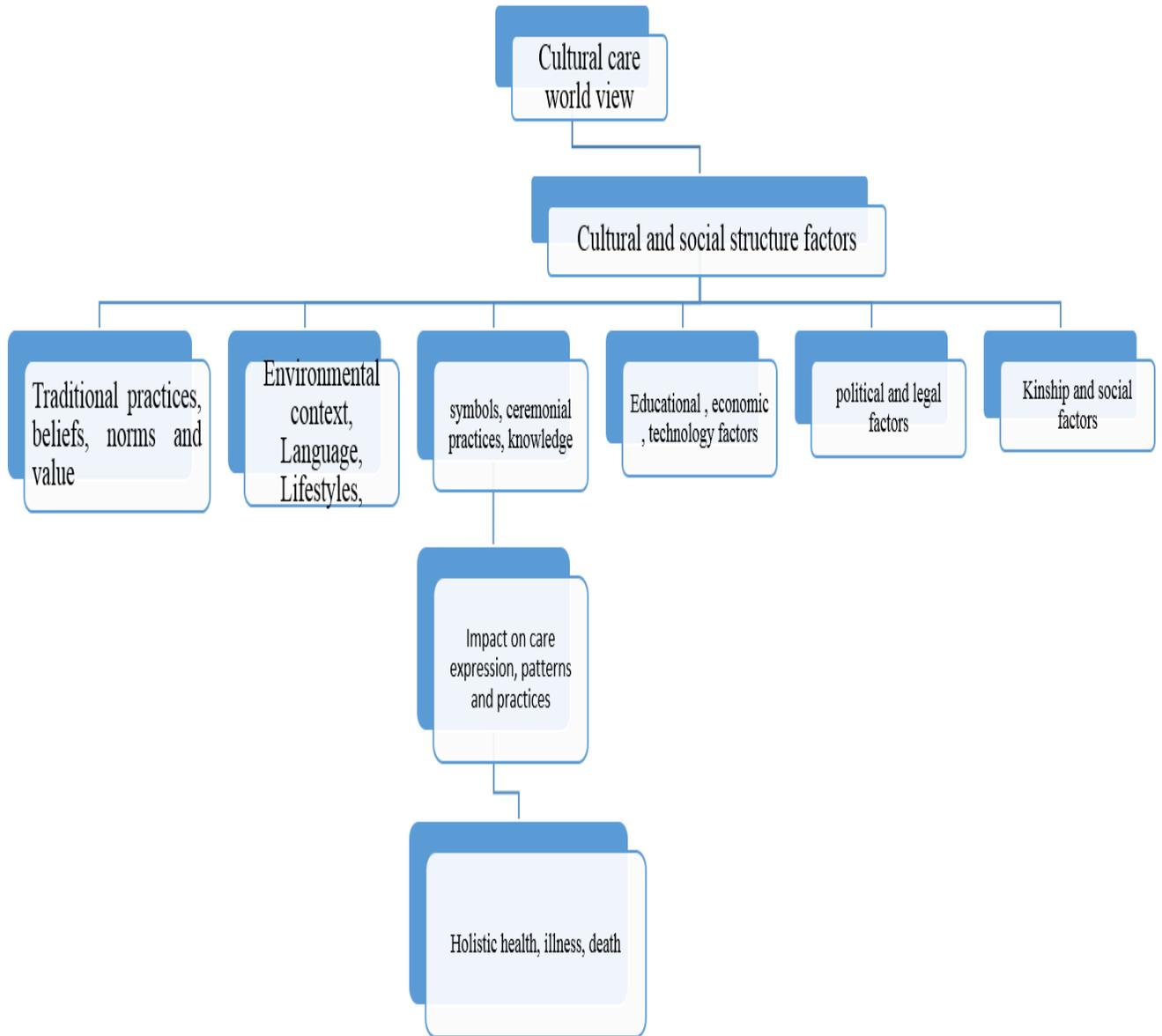


Figure 4: Culture care

### **1.10 Ethical Measures**

Researchers require permission to collect data from individuals and sites (33). For that reason, before embarking on this study, the researcher obtained clearance from the research committee of the University of Namibia, Faculty of Health Sciences, and further sought authorization from the Ministry of Health and Social Services, as well as from the Director of Health in Ohangwena region. Oral permission was also granted by officers of the various constituencies where the research was conducted.

Ethical considerations are formal procedures for the protection of research participants (20,22). The participants selected for this study were informed and made aware of the study objectives before they took part in it. They were informed of their rights to privacy and encouraged to participate voluntarily(23). Their right to withdraw partially or completely from the process at any time, for any reason was explained. Every participant was requested to give an informed consent at the beginning of each data collection event. All participants and respondents were respected and care was taken to uphold confidentiality for all data they provided. Privacy was well maintained. Respondents and participants were not identified by means of personal details to ensure their anonymity (24). In Chapter three below, a full description of the procedures taken is provided.

### **1.11 Definition of Key Concepts Used in the Study**

To facilitate the understanding and utility of the concepts used in this study without bias, the following connotations are connected to the concept as used in this study.

### **1.11.1 Congruent**

This concept refers to practice approaches and actions that are in agreement with combination of values, beliefs, ideas, customs and social behaviours of rural communities used as suitable for the prevention and control of malaria which influence their health outcomes; Approaches and actions that are in agreement with the ideas, customs and social behaviours of rural communities aimed at improving malaria prevention. The concept is used in this study to simplify the connection between affordability, flexibility, acceptance and fit together to achieve desired outcomes.

### **1.11.2 Facilitate**

It is the actions and process taken to initiate the efforts needed to prevent and curb health problems and promote the ability to acquire knowledge and skills in Malaria prevention among the HEWs.

### **1.1.3 Health Extension Worker**

The term refers to a reasonably trained officer who is appointed by the government on the basis of the need to extend health care services to hard-to-reach areas. In this study, the concept is used to refer to trained members who render basic health care to promote health and to prevent diseases in rural Ohangwena community and are responsive to meet the community's unique needs.

### **1.11.4 Integration**

Integration is the state of combination available local resources or the process of combining into completeness and harmony. The medical definition integration is the combination and coordination of separate parts or elements into a unified whole. It can also be defined as a combination of two or more things so that they work together more effectively (Longman

Dictionary of Contemporary English). In this study the concept is used to refer to harmonizing the use of resources and value of traditional and modern preventative measures in Ohangwena region.

#### **1.11.5 Malaria**

Malaria is defined as a life threatening disease caused by parasites that are transmitted through bites of infected female anopheles mosquitoes (12). In this study, the concept means an infectious disease caused by parasite that enter the blood stream and cause deadly infection.

#### **1.11.6 Model**

The term refers to a concise training package developed using socio-cultural sensitive approaches for use by health extension workers in malaria prevention activities for rural communities. In this study it is a strategy used to guide the training and regulate education of Health Extension Workers employed in Ohangwena rural area.

#### **1.11.7 Socio-Cultural**

It means a combination of social and cultural factors that influence health outcomes of community members at rural grassroots level. In this study the concept is used to promote freedom of choice by advocating for combination use of modern and traditional preventive measures effectively and efficiently in Ohangwena region.

#### **1.11.8 Training**

It refers to the process of teaching health extension workers to acquire knowledge and skills on socio-cultural practices to enhance malaria prevention in rural areas. In this study the concept

refers to members who have undergone formal training over a period of six month on matters related malaria prevention and health promotion.

### **1.12 Summary**

This chapter highlighted the introduction and background to the study. The problem statement, purpose of the study, significance of the study, context of the study, assumptions of the study and, framework and theoretical basis of the study were discussed. Definitions of key concepts used in the study were presented and the ethical measures applied were summarized.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

Literature review was conducted to gain insight, collate and validate information gained from interviews, observations, and questionnaires. Information used is taken from various sources, such as books, reports, journals and electronic data. The focus was to explore available data in Africa and elsewhere in the world on malaria prevention and control which focused on and incorporated socio-cultural practices. It was also intended to firmly integrate the study in existing knowledge and theoretical frameworks as well as to identify study variables. The focus of the literature review was on identifying the socio-cultural factors that enhance malaria prevention and control practices and are utilised by rural communities. Knowledge, Attitudes and Practices (KAP) of malaria prevention, barriers to malaria prevention and rural community members' perceptions of malaria as a disease were also key aspects of the literature review.

#### **2.2 Factors that Influence Malaria Prevention and Control**

##### **2.2.1 Limited Studies on Traditional Practices in Malaria Prevention**

Despite the effectiveness of insecticides in the control of malaria, it is a challenge for rural communities to effectively adapt and utilize due to a lack of affordability, acceptability, accessibility, equity and difficulties associated with its distribution in rural places(39). Other challenges include its appropriate use by disadvantaged communities, especially those that are socio-economically vulnerable(39,40). Biomedical practices are dominant among the strategies being applied to prevent and control malaria. This provides evidence that there is limited scientific studies that focus on the influence of socio-cultural practices in the prevention and control of

malaria on the African continent (39). Little has been done and/or published on sociocultural practices that relate to malaria prevention and control in rural communities. A study conducted in South-Africa by (41) noted that little has been written about social factors in areas of high malaria incidence, yet the magnitude of the problem is directly linked to human behaviour and the social structure. Most mosquito breeding sites are man-made, when human beings manipulate the environment for agricultural and other purposes such as the establishment of settlements, construction, and waste disposal (39,40). The source further indicated that in many situations, residual indoor spraying has less appeal to traditional households than their cultural practices.

### **2.2.2 Human Dispersion and Livelihood**

Daily activities determine human movement and distribution in the area and people move between homes and workplaces. Traditionally, people work from farms; they hunt, garden and fish throughout the day, spreading into the dawn and dusk, which may expose people to anopheles bites(42–44). In addition, some social events and cultural practices are done in the evenings away from home. Social activities such as social drinking happen in the evenings at local bars (shebeens), whereas some careers such as security guards demand that all night is spent in open areas prone to mosquitoes further heightening the transition of malaria (45). Subsistence farming, the main source of livelihood for rural communities, also contributes to malaria as it provides breeding grounds close to homesteads, as does livestock farming with herds close to homesteads and other activities such as brick making, irrigation and cross border migration (42). During the rainy season, and specifically between the months of October and April, increased risk for malaria transmission is observed as rain further facilitates mosquito breeding (42). Rural practices and

behaviours marginally raise the cultural affiliation where there is interaction with the culture of origin or the dominant biomedical culture (31).

Livelihood with shared natural resources is a common practice worldwide(46). In southern Tanzania livelihood activities and natural resources management influence the risk to malaria with reference to daily tasks and responsibilities (47). In the case of farming, it requires traveling for long distances away from home; sometimes people spend the night away from home, sleeping in improvised house settings. The unrelenting search for solutions to unmet needs and difficulties severely affects the pattern of community livelihood and exposes people to health risks including malaria (46). Temporary sleeping arrangements away from home, for example, are impractical and inappropriate for the use of mosquito nets, which are the most widely available resource for malaria prevention (46). Even then, the cultural practices and beliefs vary widely, which compounds further the influence of beliefs, values, attitudes and behaviours have on disease prevention and control (48) . The findings from the study done in Ghana by(49) reported that malaria risk is higher in impoverished communities compared to more decent houses.

In many African socio-cultural gatherings and events, celebrations spread into the night and are outdoors, which increases the risk of exposure to mosquito bites and malaria. In most traditional households, activities associated with gender roles such as cooking and cleaning of households for women and evening socio-events for men happen at night in open spaces where protection from mosquito bites is not a priority(46). For several days, rural communities sleep in open spaces during cultural rituals and observations such as funerals, where little to no measure is taken to prevent the risk of exposure to mosquito bites (46). Malaria, especially in endemic areas, is a major barrier to socio-economic development (50). In poor contexts, in countries like Malawi, the use of ITNs, IRS and other interventions is a challenge as these are unaffordable and accessibility is

greatly limited (48,51). Limited awareness about malaria control and prevention remains a challenge in Ethiopia where there is a low utilization of preventive methods, a critical obstacle in the fight of the malaria disease (51). However, the biggest challenge is the behavioural adaptation of the mosquito, which involves the changing of peak biting patterns from the middle of the night to early and late nights with the aim of avoiding contact with the bed net (47). It is argued by (47) that policy makers and programme planners made a mistake when they accepted that bed nets would provide a universal solution to malaria transmission. In rural communities in southern Tanzania, this is not possible where the use of mosquito nets comes into direct conflict with the socio-cultural practices of those communities hindering the impact mosquito nets would have(46).

### **2.2.3 Human Factors that facilitate malaria transmission**

There is a lack of sustainable long term activities of awareness creation to effect change and less is communicated to the community about behaviours change (39,40). Namibia has reduced case incidence by more than 75%, however some parts of the country still bear a bigger burden. Despite the remarkable reduction in malaria cases, new cases emerge out of a variety of factors such as cross border migration especially with Angola to the north of Namibia(52). Free movement of people can facilitate disease transmission because it increases the risk of reception and vulnerability specially where migrants move from endemic areas to those that are less endemic(52). In this case, southern Angola is a malaria endemic area and shares borders with the Ohangwena region and this facilitates continuous malaria transmission(30). It is important to focus on immigrants because if they have stayed in an area that is endemic to the disease, they could carry it over to other potentially virgin areas. People migrate and/or travel for various reasons.

Traveling for survival as an example, like any other reason for migration, facilitates carriage of disease from place to place and person to person (45). It should be noted that migration is not always related to crossing borders as the same factors are true with internal migration.

#### **2.2.4 Environmental Factors that facilitate malaria transmission .**

The fauna and flora, for example the natural vegetation, agricultural crops and animal water points, provide potential breeding sites for mosquitoes while animals, such as domestic livestock provide food for the anopheles arabiensis. Therefore, it is very important for public health services to have knowledge of the entomological factors that influence the life of the mosquito and recognize the different species of mosquitos in a specific area in order to customise the messaging for disease control and prevention (45). In a study conducted in Zimbabwe by (42) similar environmental factors were identified that influence malaria incidence. These included animals, birds, insects and plants which are used as warning signs for impeding malaria threats. The same source revealed that indigenous knowledge is shaped by the environment, and it is vital for scientists and planners working to improve the standard of living for rural communities to value culture and indigenous knowledge in decision making regarding the design and implementation of modern mitigation and adaptation strategies. Malaria transmission is related to the environment, physical and biological factors (53). This is consistent with many studies conducted worldwide which identify other factors such as the timing of rainfall and climate change, because malaria transmission is associated with rainfall(44,49). Forestation facilitates the transmission of malaria, especially in areas where people live or cultivate in forest areas, including other activities such as crop plantation, collecting firewood, cutting trees and hunting(44).

### **2.2.5 Poor infrastructure of health facilities, roads, technology and housing**

Despite a rapid infrastructural development in the urban spots of the Ohangwena region, the majority of the population still lives in rural areas with limited access to services. The rural population is challenged severely from poor inaccessible road infrastructure to no housing, inadequate and rudimentary information technology, limited access to healthcare, poor to no access to information and education(30) .

About 89% of Ohangwena's people live in rural areas with a heightened risk of malaria transmission(30). Malaria remains one of the top causes of morbidity and mortality in developing countries worldwide(54). The disease is a global health concern and 3.4 billion people live at risk for malaria each year(55). It is revealed that 80% of all malaria cases occur in 17 African countries (10,56). While malaria affects all people, pregnant women, children under the age of 5, and older people over the age of 60 are particularly vulnerable(3) . While malaria is endemic within most tropical and subtropical regions of the world, 90% of all malaria deaths currently occur in sub-Saharan Africa (48). It has been estimated that malaria is responsible for approximately 20% of all deaths among children less than 5 years of age in sub-Saharan Africa. Young children and pregnant women represent those at the greatest risk of malaria-related morbidity and mortality, especially in areas of stable transmission(7). It has been estimated that malaria-related illnesses account for approximately 30% of all outpatient clinic visits within malaria-endemic countries of the sub-Saharan Africa region (57). In countries like Uganda, malaria contributes to 30-50% of outpatient visits, while admitted malaria-related cases account for 15 to 20%. The hospital death rate due to malaria is at 20% in Uganda, affecting children, mostly those under the age of five and pregnant women (58). In addition, the disease is responsible for one out every four maternal deaths

in Africa. Malaria is a burden and poses a tremendous public health problem across the globe with an estimated 40% of the world's population living in areas with a high malaria risk (59).

An estimated 190–330 million malaria episodes and at least 1 million malaria deaths occur annually(60).

In Africa, malaria retards economic growth and worsens poverty(61). The estimated cost of malaria in Africa for prevention and treatment is between U\$10 –U\$12 billion annually of the gross domestic product.

### **2.2.6 The Impact of free net distribution on Malaria Prevention**

Malaria transmission is influenced by many factors; however its prevention and control is dominated by donor funded strategies(62) while its treatment is generally biomedical (44). There is a strong belief in high malaria transmission areas that the biomedical practices are the best strategy to prevent malaria among small children and pregnant women. This provides evidence which supports activities aimed at promoting the distribution and use of LLINs (63). Additional strategies such as indoor residual spraying and direct behavioural change communication can be beneficial as well. Other strategies used as barriers to mosquito bites include wearing of protective clothes such as long dresses, trousers and long sleeved shirts, the use of electric fans, sealing of eaves around rooms, use of window nets, use of trap doors and closing doors and shutting windows all the time (58). In addition, proper disposal of waste and the removal of bushes in the environment, around the home also reduce mosquito breeding(58).

However, the social structure and socio-cultural practices play a significant role in the prevention, control and treatment of malaria(39,40). The majority of the world population is poor and living

in developing countries which lack adequate access to public health services(44). This has resulted in the fact that malaria is regarded as a disease of the poor, which can be counteracted by improving the understanding of social, cultural and behavioural factors that relate to the prevention, control and treatment of malaria. This is true because behavioural and social characteristics of people are determinants of the success of malaria interventions (54). A study conducted in South Africa, where malaria is endemic and people are poor, recognised that it is beneficial to apply an interdisciplinary approach to the control of malaria among rural communities(41). Another study conducted in Uganda revealed that behavioural change and communication increased knowledge and awareness, and therefore reduced the malaria parasite by 22% in children of a mother who had heard a malaria prevention message(39,40,63).

### **2.2.7 Indigenous Knowledge of Malaria, Misconceptions and Malpractices**

Available literature indicates that malaria is identified based on signs and symptoms that range from fever, headaches, chills, joint pain, sweating, bitter taste in the mouth and loss of appetite (50). Good knowledge about identification of malaria was identified in Ghana, where the majority uses herbal remedies and only 20% of the households interviewed combined herbal remedies and western medicine. There are two major reasons for using herbal remedies, namely cost and accessibility (50). Similar findings were reported in a study conducted in Tanzania by (64) who revealed that certain herbal treatments have benefits, referring to a Chinese plant used traditionally to treat malaria and at the same time used by scientists as derivative to make artemisinin. However, the same study cautions that many traditional therapies may be ineffective and harmful. Locally available traditional healers and barriers to access to health services force communities to use

herbal remedies (64). This is because traditional healers are readily available at a low cost, promote trust and strengthen the belief in local customs and cultural teachings.

Several authors indicated that a low-level of knowledge has variations in impact for various countries and zones (41). Community members are not always aware of the various challenges of malaria, which was found to be the case in Ethiopia (65). Limited knowledge and misconceptions about malaria and its transmission is still prevalent in Ethiopian rural communities as evidenced by 30.1% of rural respondents who represented a low-level knowledge of transmission by mosquito bites compared to 59.7% of urban communities (65). A study conducted in India, in a rural village of Mumbai, revealed the poorest knowledge of malaria among respondents from construction sites and villages (66). However, few community members had knowledge on signs and symptoms of fever as revealed by 37.6% and vomiting was reported by 16% (65). Other evidence of poor knowledge was reported by 28.3% for unconsciousness; while seizures and convulsions was mentioned by 24.4% (65). Knowledge of species and breeding sites is vital in the fight of the disease. *Plasmodium falciparum* is a major contributing factor of maternal and neonatal death in Sub-Saharan Africa(58). *Plasmodium falciparum* is considered a public health threat due its severity and fatal outcome(67). However, in some parts of the world such as Southern America *plasmodium falciparum* has decreased significantly(68).

Despite adequate knowledge, it is important to understand the factors that contribute to the high prevalence of malaria transmission in some areas and not in others. In Ethiopia, among communities, where activities emphasised malaria prevention targeting the existence of mosquitoes as a problem and giving little attention to the parasite species, community members were found to have low-level knowledge (65). Some respondents indicated that malaria

transmission occurred due to exposure to cold weather as revealed by 25%, while 15.5% of respondents indicated hunger as well as drinking of dirty water (65). In a study conducted in Bhutan, malaria was reported to be caused by bad air, staying in the rain and long hours under the sun, local spirits and taking fruits with a sour taste(67). In Southern Tanzania, severe malaria symptoms were associated with supernatural causes(46). Therefore, communities preferred to treat it with amulets prepared by traditional healers. Community members perceived the amulets ritual as a mode of protection, opposed to the use of mosquito nets as measure of protection against mosquito bites(46) . Home treatment involved the use of self-medication such as anti-pyretic. Most of this drug is kept in households as leftover from previous episodes of malaria and continues to be used albeit inappropriately (49).

An understanding of the communities' perceptions, beliefs and behaviours is very important to the success of a malaria control measure at community level(41). Misconceptions are a problem among rural communities in Lomahasha, which lead to seeking health care at the wrong service points. Information gaps among people aged above 50 years have led to misconceptions, particularly on the causes of malaria (41). Misconceptions in some communities are associated with the free distribution of LLINs to vulnerable groups. Initially, bed nets were targeted at pregnant women, lactating mothers and children less than five years of age, creating a misconception among Ethiopian communities that only these groups were affected by malaria(51). Intra-cultural variations occur due to differences in beliefs, values, attitudes and behaviours and for that reason, not all people adhere as expected even among members who share a similar culture (31). Several authors have indicated that the free distribution of ITNs and LLINs was initiated as

a strategy for malaria prevention and control in endemic zones worldwide (41,51). Others recommended that malaria prevention strategies include early diagnosis and treatment of the disease. However, many countries in the world interrupt malaria by using integrated strategies, combining IRS and the use of LLINs to prevent and control malaria transmission (44,62,69). The success of preventive measures depends on the knowledge of participants, access and utilization of services such as LLINs, ITNs and IRS. On the other hand, affordability, access and availability of these commodities highly affect their adoption and use (67).

In Tanzania, a study was conducted which showed a positive correlation between the high level of knowledge of malaria transmission and use of ITNs among postpartum women(64). However, in countries like Ethiopia, where communities were found to have low-level knowledge of malaria, there was equally low usage of LLINs (51). Generally, the perception and use of LLINs and ITNs in Africa is based on socio-cultural and traditional beliefs (58). Despite the poor knowledge and lack of access to LLINs and ITNs, research findings revealed that a lack of nets was due to logistical and technical reasons in countries such as Ghana(58). In a study conducted in Ghana, 40% of households did not use bed nets because they found them difficult to install. Therefore, adequate knowledge and ownership is likely to improve effectiveness, and increase the use of LLINs and ITNs in malaria prevention(58).

On the other hand, however, many studies conducted in South Asia could not identify a relationship between good knowledge of the use of bed nets and real life practical use as affordability, access and availability of the bed nets meant that the majority of community members did not have them(67). In Nigeria however, the situation is different, where owning a bed net did not guarantee its usage. These contrasting results are reported in Makurdi, in Nigeria, where 16.8% of

respondents had bed nets but could not use them despite a high-level of knowledge whereas 5.3% of respondents who had low-level knowledge were found to use bed nets (1). It is argued that free net distribution reduces accountability of net usage and ownership at community level even when it is meant to increase net coverage. Indeed, the success of ITNs depends on the mutual cooperation of the community members and service providers (41).

The nature of the household has an impact on how the bed net is to be hanged(51). In some households, especially in rural areas, the nature of the sleeping rooms makes it difficult for most people to hang the bed nets properly as the roofs do not guarantee the rectangular shape of the LLINs(51). In rural poor households, this might be the reason for the low usage of bed nets even when such households regularly receive LLINs(51). Contextual and individual factors may constrain or enhance the uptake of effective malaria prevention and treatment measures. In a study done by (70) it was revealed that there is low-level awareness of the use of preventive measures of malaria among people from West Africa residing in the United Kingdom. The issue of bi-culture in the United Kingdom is common and people from West Africa could have become acculturated (31). (70)revealed that people from Ghana and Nigeria who reside in the United Kingdom did not like to use bed nets when travelling to their countries of origin because they had given up their original culture, subscribing completely to the new culture (31). When these people travel back to West Africa from the UK they have access to other methods that prevent mosquito bites, which may facilitate the perception associated with the refusal to use bed nets, which are perceived as uncomfortable. This attitude, however, may likely expose them to malaria while in endemic areas(70).

Inappropriate disposal of ITNs and LLINs is also a problem among community members. WHO guidelines stipulate that it is a requirement for the health workers to collect all worn out ITNs and LLINs from community members and dispose of them formally(58). However, once the bed nets become old, community members dispose of them at ordinary garbage dumping areas, bury or burn them. In some communities, old bed nets are used as building materials and covering material for shades (58). Additionally, bed nets were observed in use for fishing and the provision of a guarding layer for backyard gardens. In Ethiopia, women used LLINs as scarves and bed sheets to protect themselves from lice and fleas(51).

Knowledge deficits on the drivers of malaria infection pose another challenge for the prevention of the disease. There are structural factors that influence an individual's decision about their health, whose role in disease prevention and control is often ignored(70) . Ignoring structural factors at community level manifests itself in many ways. For some people, the severity of the disease is determined by physical suffering, disruption of important daily tasks and availability of resources to fund treatment (67). Moreover, health-seeking behaviour is not a tradition for many traditional rural communities. In a study conducted in India, early presentation to health facilities is not common because adults seek help from the traditional healers as a first line of treatment (67). A few of the community members who are treated at health facilities often discontinue treatment once the symptoms disappear, with the idea that they save medicine for future use in case such an episode of illness occurs (64). In rural communities where malaria is endemic, young children develop age related immunity due to continuous exposure to infective mosquito bites(63). This means that older children have an elevated level of immunity; even when they are exposed to the malaria parasite, they will not develop clinical malaria. Similar findings were also observed among

population groups in Brazil who are highly exposed to mosquito bites but simply remain asymptomatic carriers (68).

The possibility of change in the intensity of malaria transmission should not only be observed through prevalence alone. There are other factors that need to be looked at because of the complexity of the disease(71). Such factors include, among others, the relationship between seroconversion and exposure, which could be observed as a useful monitoring tool for understanding the changes in exposure in areas of highly effective prevention interventions(71). Migration and human mobility are equally important drivers of malaria transmission (62). During the design of prevention and control interventions intended to be used in fighting malaria in endemic areas, this information becomes of vital use (63). As earlier discussed, knowledge plays an important role in malaria prevention practices. Studies report that communities use mosquito repellents, coils, proper clothing that cover the entire body, sprays and removal of stagnant water from the environment as methods of prevention and control of malaria (63).

To date, malaria is seen as a serious infection worldwide(72). It is a major public health concern in Ghana (73), where the situation is devastating and hyper endemic (50). Traditional treatment for malaria is based on cultural beliefs, customs and traditional norms and values. In socio-cultural terms, malaria aetiology differs from scientific explanations, and as such the first line of treatment takes place at home using traditional practices as fit for community perception(64). In a study conducted in Afghanistan, people use plants or their roots to treat malaria and prevent mosquito bites. This practice is in part a direct result of the prohibitive cost of preventive and treatment strategies(67). Rural communities use bonfires, burn grass, rub lamp or motor oils on the skin and sleep wrapped in wet chadors and apply herbal oils(67) . In addition, community members consult

traditional healers for treatment, which is readily available. In so doing, the financial constraints associated with access to treatment from a health facility are avoided. In Tanzania for example, 70% of mothers were found to have sought treatment for febrile illness in their children from traditional healers (64). Where such beliefs and resolve to health solutions is strong, it may complicate the overall health seeking behaviour that targets health facilities. Equally, such practices may interfere with and/or delay early diagnosis of illnesses and the initiation of the associated treatment. Effectively, the role of culture as a key component in reducing the burden of malaria in endemic areas in Africa should be recognised. In addition, treatment campaigns for malaria at community level should include culturally sensitive strategies that provide education in the context of local considerations and beliefs (64).

### **2.2.8 Social Factors that facilitate malaria transmission**

Malaria is a disease of the poor because a reciprocal relationship exists between the disease and poverty(65). The disease facilitates poverty as the latter complicates the prevention and treatment strategies in place(65). There is a relationship between social economic factors and malaria risk, which is mounted worldwide among poor communities living in the lower health strata and yields high risk results of malaria yet poor people are more concerned about alleviating their poverty than malaria control interventions (41). The majority of community members in Lomahasha underestimated the danger of exposure to mosquito bites as they are used to the disease and perceived it as part of their lives(41).

### **2.2.9 Level of education and wealth status and its impacts on malaria transmission**

People who attained high education and have a better wealth status stand a better chance to reduce the risk of malaria(63). It is more advantageous if the educated member of the family is the mother because mothers are in a better position to prevent and treat malaria(63). Ethnic minorities at borders have limited formal education and less access to health education, which results in an increased risk to cross border malaria(44). Similar findings were revealed by the study conducted in Nigeria, where it was revealed that the educational status of a person has a positive effect on the community's attitude towards malaria. Therefore, the higher the education level of the person the better their insight on malaria prevention and treatment compared to people with low or no education(1). Malaria prevention requires a multidisciplinary approach to control and eliminate the disease in the world, so a combination of efforts coupled with improving education and socioeconomic status of the population needs urgent priority (63). Africa spends only 1% of its gross domestic product to fight malaria(73).

### **2.2.10 Barriers to Malaria Prevention, Control and Effective Treatment**

Mosquito control and prevention is a challenge, as vectors have developed resistance to insecticides or show low sensitivity to the compounds. Some insecticides have been suspended for decades because they were inefficient and they have not been replaced (74). The lack of resources and operational barriers in rural hard-to-reach areas make it difficult to achieve goals in targeted places and communities living in endemic areas. A study conducted in the Great Mekong sub region revealed that parasites had developed resistance to artemisinin(75). It is possible that malaria transmission was underestimated in certain areas due to poor or lack of records in high mobility populations (68,76). Access to prompt treatment at community level is complex and is

influenced by a lot of factors other than availability and affordability(41). Some of the barriers experienced in Mozambique are ineffective surveillance systems, untimely reporting, poor management of new cases, lack of medical resources and poor transport systems (77). In a cluster near Manzini, migration, as it relates to domestic and cross border trading, was identified(62) . Ecological changes such as increases in immigrants in and out of highly infected areas, poorly implementation of surveillance systems and degrading of healthcare infrastructure are reported to be contributing factors to the malaria burden in South Africa (77).

Some other reasons identified to prevent people from accessing health facilities are long walking distances, long waiting time, unfriendly health workers, lack of money, lack of public transport, loss of faith in the medical and health profession, lack of people to accompany patients to health facilities and various misconceptions (67). Delays in seeking care as well as in diagnosis are barriers to effective treatment(72). Radical treatment, self-medication and sub-optimal health seeking behaviour are common among communities due to inadequate malaria treatment at border areas (44). Additionally, the lack of information on available services, language barriers, high transportation costs, concerns about the legal status and cost of malaria chemoprophylaxis are also major barriers (44).

#### **2.2.11 Other Risk Factors that facilitate malaria transmission**

The difference in malaria risk depends on people, time, and place (78). Therefore, the difference requires explanations that take into consideration the cultural and environmental differences between villages and populations. Other factors found to be significantly contributing to malaria risk are illiteracy, cross-border movement, large families and overcrowding of humans, which

accelerate human smell which in turn awakens the anopheles mosquitoes(77). Household structures built very close to animal cages are the main exposing factors for human beings to malaria risk. Furthermore, practicing animal husbandry presents a chance for animal hoof prints to act as breeding sites for anopheles due their tendency to collect stagnant water after rain.

### **2.2.12 Malaria Burden in Ohangwena Region**

The Ministry of Health and Social Services (MoHSS) introduced the training and deployment of Health extension workers (HEW) in various regions with the aim of supporting government's efforts to fight Malaria, Tuberculosis and HIV/AIDS. However, these HEWs need knowledge and particularly cultural competence and sensitivity essential for improved communication about the current strategy for malaria elimination(3). Similarly, in New Guinea Community-based health workers were deployed to bridge the gap where access to formal health care services is poor(79) .

### **2.2.13 Recognition and Perceptions of Symptoms of Malaria**

At community level, malaria, like other illnesses, is first recognized at home, based on the belief systems that people hold(1). The categorization of the severity of the disease is influenced by the choice and type of treatment, and the personal priorities to seek care. In many countries people reside in places in which malaria is endemic, where the symptoms of mild malaria are recognized as an everyday event (1). However, people have limited knowledge that malaria cases, though seen as mild, can suddenly develop into severe disease presenting with convulsions and anaemia. Moreover, these presentations in many communities are viewed as being separate disease entities with no relationship to malaria(1,44,46,49).

#### **2.2.14 Factors affecting the use of Insecticide-Treated Bed Nets**

Malaria control interventions help with effective coverage (44), however there are knowledge gaps on the impact that these strategies have on suppressing mosquito vector populations and parasite transmission (68). It is important to note that parasite prevalence is associated with individual and environmental factors(63). However, there are other malaria control strategies that have been noticed to reduce the prevalence of the malaria parasite in the community; that is the use of environmental hygiene of selected breeding sites and behaviour change communication (63). Despite knowledge of the importance of insecticide-treated bed nets and other malaria preventive strategies, not all pregnant women sleep under ITNs and other long lasting treated bed nets. The barriers to this effect stem from social and economic backgrounds of pregnant women, including a lack of financial ability to buy the nets or missed opportunities of free distribution. Further, there are other factors that forbid the use of LLINs among pregnant women, such as discomfort resulting from heat, smell of the net and difficulty in breathing, vomiting experiences and difficulty in hanging the net(58). The discomfort coupled with vomiting as well as extreme heat, itching and difficulty in breathing all scored 15% each. In addition to the discomfort, logistical problems of net hanging as a challenge scored 20%. This is mainly because of technical difficulties arising from the design and structure of sleeping rooms as well as nature of traditional beds. In addition, access does not always result in usage due to socio-cultural and logistical reasons. In many occasions the ITNs are not available at the health facilities where prices are subsidized and lack of money prohibits many from purchasing nets from other sources. Therefore, over 40% of ITNs available at household level in Ghana are unused(58).

### **2.2.15 Issues Related to Maintenance of mosquito nets**

Community members are responsible for maintaining the net to prevent holes, limit washing, retreat and store it in a safe place. Net safe keeping involves the prevention of overcrowding of people in one net per night to preserve its quality and inhibit worn-out insecticides in the net(58). However, worn out nets are discarded inappropriately. Places used for net disposal by community members include refuse dump sites as well as burying and burning. In some parts of the world, nets have been used for fishing and gardening (58). WHO guidelines for appropriate net disposal require collection and disposal by health professionals(58).

### **2.2.16 Cross Borders Movements facilitate malaria transmission**

Porous border movements between neighbouring countries are a global challenge(44). Despite an effort to reduce the burden of malaria, there are indications that barriers exist that make the disease difficult to control in places that are near international borders. Malaria in South America for example is prioritised in the regions because it is affecting the poor population located in border areas (68,80). As a result of a unique attribute of borders, many factors favour malaria transmission (44). In case of mobile populations, it is easier for reservoirs of infection to develop, leading to persistent transmission of malaria. Some migration is facilitated by better working opportunities for the poor (44,68,74). Economic migrants are the world's fastest growing group of migrants with increased risk of occupational exposure to malaria. However, malaria associated with human movement is complex(41) due to the dynamics of human behaviours (44). Cross border movements for people and vectors combined with epidemiological conditions make malaria transmission difficult to contain at border places (44). There are political, economic and geographical constraints that make malaria control and management difficult at border

lines(44,62). However, several studies have recorded that a lack of responsibility from neighbouring countries, especially those where malaria is endemic, have poor access to preventive strategies and poor access to health facilities(44,62). In South Africa, cross- border movements have been one of the major risks for malaria transmission among communities residing in the endemic area of Jozini, which borders with Mozambique and Swaziland (77). As it was indicated by(44), poor efforts of collaboration in the fight against malaria between various bordering countries continue to be a major challenge. It is this lack of collaboration that has resulted in mixed results for malaria control, where some countries have reached the elimination phase while others are lagging behind (77). Mozambique for example is experiencing very slow progress, still stagnant at control phase, compared to South Africa and Swaziland, which have both reached the pre elimination phase(41,77).

### **2.3 Summary**

This chapter discussed the factors influencing malaria prevention and control, using and comparing with available theory. It was evident that limited theory is available on the socio-cultural practices that influence malaria prevention and control. Factors discussed in this chapter include human livelihood in general as well as structural, environmental and infrastructural factors. Community knowledge levels were seen to influence malaria prevention and control as part of a wide range of barriers identified and discussed. The next chapter presents and discusses the research design and methodology.

## **CHAPTER THREE**

### **RESEARCH DESIGN AND METHODOLOGY**

#### **3.1 Introduction**

The previous chapter focused on literature review and gave a description, using theory, of a variety of practices that promote or hinder the prevention and control of malaria. The resources used addressed biomedical and traditional practices and highlighted the fact that there is limited research available on socio-cultural practices that influence malaria prevention and control. This chapter presents the research design and methodology applied for this study.

#### **3.2 Research Design**

The study was guided by the convergent parallel design in which both quantitative and qualitative methods carry equal weight and data is collected at the same time from inception to completion of the study (21,24). Quantitative descriptive observational and qualitative exploratory phenomenological and contextual approaches(81) and theory development approach(82) were used. The researcher employed a single cross-sectional design as the study was conducted in the present time in a single round of data collection to investigate what currently exist(83). Concepts derived in phase 1 are defined and described in relation to Theory development based on the following three theories; transcultural Theory, Practice oriented theory and Theory of Culture Care Diversity and Universality to facilitate the development of a model to facilitate socio-cultural congruent malaria care through empowerment, sustainability and integration.”

### **3.2.1 Study Design**

The research approach is found fit in assists the researcher to obtain rich information of people's lived experienced(81) by investigate and describe the knowledge of the rural community on socio cultural factors that influence malaria prevention. It also describe the daily practices among rural community performed to help them from contracting malaria and explore the traditional practices, herbs, plants and other local natural materials rural people are using to prevent malaria at community level, as well as conditions and time of the year they are using this methods and practices(19,26). Quantitative Design: The information was collected with questionnaire and check list and a survey was conducted to obtain findings that guaranteed generalised of results to rural population. The information were described and summarised using numerical and graphical(81)

Qualitative design: The study used a qualitative exploratory, observational and descriptive approach to obtain more insight on the perception of HEWs and Head of households on the traditional practices in relation to malaria prevention as well as influence of socio-cultural on Malaria care and prevention. A semi structures research guide was used (Annexures E and F).

The information obtained from exploratory design were analysed to give out what was not known but needed to develop a model based on deductive and inductive reasoning or design.

Theory generative design: The research followed the deductive and inductive reasoning to support the findings from the study. The use of experiences and information from literature supported by



From the information in figure 5 above, the two approaches, quantitative and qualitative are indeed inseparable. The combination of these two approaches develops a good insight into the research question and supports the complete comprehension of the role of socio-cultural practices in the prevention and control of malaria in rural communities.

### **3.3 Reasoning strategies**

The deductive and inductive reasoning strategies were used in this study to assist the researcher to organise data during analysis of the theoretical and mixed method results for generated concepts.

#### **3.3.1 The Inductive**

It was used in phase one. Based on the first two objectives, the questionnaires and check list were used to cater for the general concern about impact of socio-cultural malaria prevention and control practices and assess KAP among rural communities on Malaria prevention in the region; also to explore and describe the perception of rural communities about standard prevention versus traditional practices.

The emerged themes and subthemes as well as categories, concepts and central concepts were identified in in phase. It was also used in phase two during construction of the related statement.

#### **3.3.2 The deductive reasoning**

Deductive reasoning was used to observe if general and broad speculations can led a researcher to specific and goal oriented conclusion(81). The deductive reasoning was also used in concept identification that required in central concept defining that led to development of model and guidelines in phase 3.

The conceptualization process was revolved around deductive reasoning as it was used to describe the empowerment needed in facilitating sustainable integration that compiled the model of socio-cultural congruent Malaria care for its use in training of Health extension workers.

Deductive reasoning was used in the development of the guidelines for operation of the model, describe and evaluation of the model as it was stipulated in literature(82).

### **3.3.3 Derivation**

The research adopted, adapted and borrowed concepts from other discipline so that they can fitted in the current study for purpose of model development (84).

The three theory used in this study were taken from the existing literature and modified to fit the components of the proposed model. After derivation process is occurred it also facilitate the refining of concepts. This process involving also refining of concepts and offer chance to use statement from other fields. As the research pinpoint the identification of concepts and borrowing statement from various fields, it assist in the formulation of the meaning attached to concepts and central statement used in model (82), that facilitate development of a socio-cultural congruent Malaria care for Training.

### **3.3.4 Synthesis**

After derivation, all the concepts and statement were pulled together as they were acquired from literature and study findings(84). Synthesis led to draw of conclusions; describe the model according to related statements; and construct relationship statements.

### 3.4 Research Methods

Research methods is the systematic approach a researcher has to follow throughout a process to ensure reliability of data collected with the purpose of obtain a amicable solution to the research question under study. As indicated earlier, this study is divided into four phases. For objective one, two and three, in the first phase of the study, a situational analysis was conducted. During this phase both quantitative and qualitative methods were applied. The data was collected and analysed separately in accordance with the requirements of each strand. The researcher then merged the findings to address objective four. Data interpretation was done through comparing, contradicting, relating and validating to address objective five. Evaluation was conducted in phase four by experts to confirm the understanding, exploration and description of the role of socio-cultural practices in the prevention of malaria to cater for objective six of this study.

The research use a grounded theory method(82). The empirical findings and conceptual framework in phase two were used as a base of the developed model.

The study was conducted in four phases as stated below:

- Phase 1:Analysis of concepts
- Phase 2: Construction of the relationship statement
- Phase 3: Description of the structure, process and evaluation of the model.
- Phase 4: Development of guidelines for operationalising the model

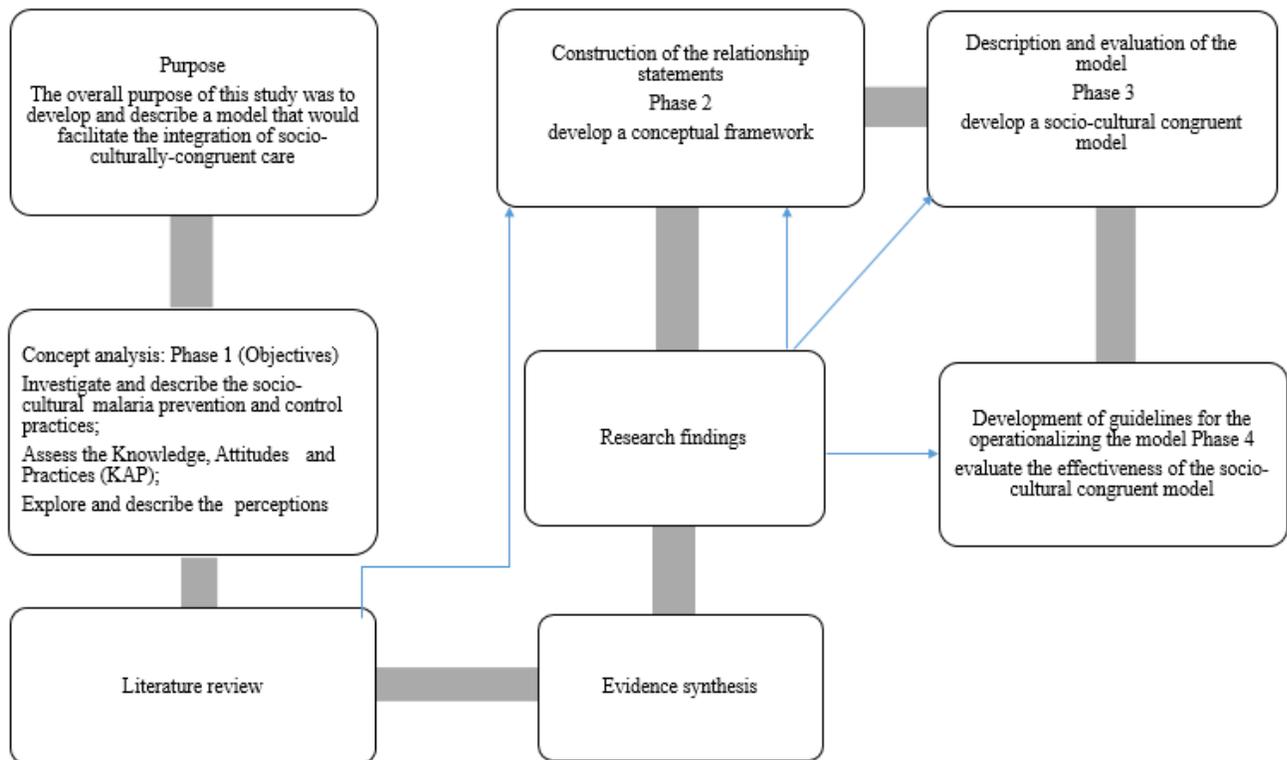


Figure 6: The phases indicate the study synthesis

### 3.4.1 Phase 1: Analysis of concepts

This phase involve the process of concepts identification, definition and classification(82). The study used mixed method approach, descriptive, quantitative approach was used to collect quantitative data from the first two objectives and exploratory observational, contextual , and phenomenological approach was used to describe and explore obtain insight and clear understanding of lived experiences of heads of households and HEWs. The phases were conducted according to the objectives of the study which were to:

1. investigate and describe the socio-cultural malaria prevention and control practices among rural communities of Ohangwena region;

2. assess the Knowledge, Attitudes and Practices (KAP) of rural communities on malaria prevention;
3. explore and describe the perceptions of rural communities in Ohangwena region about the standard malaria prevention versus socio-cultural traditional practices (Phase one).

The concepts identified led to the development of the model for the facilitation of empowerment to sustain integration of socio-cultural congruent Malaria Care for the training of Health extension Workers.

#### **3.4.1.1 Identification of the concepts**

The data collected were analysed, interpreted and classified into themes, subthemes and categories. The researcher used deductive and inductive reasoning to identify the main concept of the model. After concepts analysis was done, they (concepts) were used in the development of the model based on empirical data, which involved life experiences and clinical experiences.

#### **3.4.1.2 Study Population**

A population is the entire set of individuals or other entities to which study findings are to be generalized (85).

For this study, the population was the total number of rural households in Ohangwena region and the health extension workers deployed there. Ohangwena region is home to 37,404 rural households with an average household size of 5.9 people (30). As such there are approximately 220,683 individuals who are impacted by this study (86). In addition, the population for Focus group discussions were 188 health extension workers deployed to the region. Population, sample and sampling methods, data collections and procedures as well as data analysis were done according to the study objectives.

*Table 1: Study population with case distribution per health facility*

District	Health facility	Constituency	Malaria positive case/s
Okongo	1.Okongo Clinic	Okongo	339
	2.Okongo hospital	Okongo	339
	3.Olukula Clinic	Okongo	92
	4.Omboloka Clinic	Okongo	89
	5.Ekoka	Okongo	56
Eenhana	6.Eenhana Clinic	Eenhana	289
	7.Eenhana hospital	Eenhana	395
	8.Omundaungilo clinic	Omundaungilo	352
	9.Omuhongo	Epembe	23
	10.Ongula ya Netanga Clinic	Omulonga	16
	11.Epembe Clinic	Epembe	15
	12.Onambutu Clinic	Eenhana	13
	13.Oshaango	Eenhana	5
	14.Oshandi Clinic	Eenhana	20
	15.Onangolo Clinic	Omundaungilo	29
	16.Epinga Clinic	Eenhana	152
	17.Oshikunde Clinic	Oshikunde/ Epembe	138
Engela	18.Engela Clinic	Engela	676
	19.Engela Hospital	Engela	426
	20.Odibo Health Centre	Oshikango	228

21.Hamukoto Wakapa clinic	Ondobe	134
22.Ohangwena Clinic	Ohangwena	45
23.Ondobe Clinic	Ondobe	45
24.Okatope Clinic	Ohangwena	30
25.Eudafano	Engela	21
26.Ongenga Clinic	Ongenga	21
27.Omungwelume Clinic	Ongenga	13
28.Ohalushu Clinic	Endola	3
29.OmunduduClinic	Endola	1
30. Onekwaya Clinic	Endola	1
31.Okambebe Clinic	Ongenga	12
32.Ohaukelo Clinic	Omulonga	10
33.Endola Clinic	Endola	9
34.Onamukulo Clinic	Omulonga	8
35. Edundja Clinic	Ondobe	36
36. Ongha Health Centre	Endola	56

*Table 2: Health facilities where HEW are employed*

Name of a district	Name of health facility	constituency	Number of villages	Number of HEWs	Malaria positive case/s
Engela District	1.Hamukoto Wakapa clinic	Ondobe	6	6	134
	2.Onamukulo clinic	Omulonga	6	6	8
	3.Okambebe clinic	Ongenga	6	4	12
	4.Ondobe clinic	Ondobe	6	6	45

	5.Endola clinic	Endola	16	15	9
	6.Ongenga	Ongenga	15	15	21
	7.Omungwelumbe	Ongenga	14	11	13
	8.Onamukulo clinic	Omulonga	11	14	8
	9.Omundudu	Endola	7	6	1
Eenhana District	10.Omundaungilo clinic	Omundaungilo	9	12	352
	11.Oshikunde clinic	Oshikunde	6	12	138
	12.Epembe clinic	Epembe	6	12	15
	13.Onangolo clinic	Omundaungilo	6	13	29
	14.Onambutu clinic	Eenhana	8	13	13
	15.Ongula ya Netanga clinic	Omulonga	11	14	16
Okongo District	16.Ekoka clinic	Okongo		16	48
	17.Okongo clinic	Okongo	11	10	339
	18.Olukula clinic	Okongo			92
	19.Omboloka clinic	Okongo	12	12	89

### 3.4.1.3 Sampling and Sampling Size

Studying the entire population would be too costly and equally take too much time. Instead, a selected few participants - who make up the sample - were chosen, using applicable methodology to ensure a representative sample of the population. A representative sample is that which looks like the population from which it was selected in all respects that are potentially relevant to the study (85). The researcher used multiple sampling strategies(21) as required by the nature of this study in order to collect rich and quality information. The researcher used the non-probability sampling approach in choosing the participants for this study.

Snowballing was used for selecting the heads of households, who were interviewed using the in-depth face to face individual interview schedule. Snowball sampling is a form of purposive sampling where initial participants recruit or suggest other participants who might be willing to take part in the study (87). The snowball sampling technique was applied for selecting the recruitment of the next household by suggesting potential households that meet the inclusion criteria. Where the researcher found difficulties with obtaining participants due to reluctance by a suggested potential participant, the researcher sought for endorsement and support from health extension workers and community leaders(34) such as the headman, regional councilors to suggest the next participant (88). This flexibility explains the researcher's choice for snowballing as the method of choice for sampling.

There is no rule for a specific number as a sample size in qualitative studies and as such the sample size was not pre-determined(35). The actual number for in-depth face to face interviews was determined by data saturation. The researcher stopped with interviews once the themes were no longer sparking new insights or generating new information and ideas had become repetitive(29). The actual number for in-depth face to face interviews was 20 in total.

In addition, health extension workers were selected to participate in the study by means of focus group discussions (FGD). The purposive sampling technique was used for FGD among HEWs. For FGD, homogeneous sampling was used because the researcher had trust that the participants had experience and were capable of providing the required information.

The researcher obtained the list of the 19 clinics where 188 health extension workers were deployed from the director of the Ohangwena health directorate. To maintain fairness all the names were recorded, each on a separate paper. Each facility name of was allocated a number from 1 to

19 (See table 2). The researcher randomly drew out one number at a time from the fishbowl until 8 clinics were selected. The HEWs from the selected clinics were interviewed through the focus group discussion method. At least 8 focus group discussions were conducted. The minimum numbers of participants per focus group discussion was 6 and a maximum of 10 participants. At least 38 health extensions were interviewed. The number of participants per group was determined by willingness and choice of the participant to opt in or out. The names of the 14 clinics where there is no HEW deployed was also provided to avoid error during selection of participants. The table 3 below shows the clinics from where HEWs were drawn for the FGD.

*Table 3: Name of clinics where HEW were selected for focus group discussions*

Name of a district	Name of health facility	constituency	Number of villages	Number of HEWs	Malaria positive case/s	
Engela	Okambebe Clinic	Ongenga	6	4	12	
	Ongenga Clinic	Ongenga	15	15	21	
	Omungwelume Clinic	Ongenga	14	11	13	
	Omundudu Clinic	Endola	7	6	1	
Eenhana District	Omundaungilo Clinic	Omundaungilo	12	9	352	
	Oshikunde Clinic	Oshikunde	12	6	138	
	Onangolo Clinic	Omundaungilo	13	6	29	
Okongo District	Okongo Clinic	Okongo	11	10	339	
Total	3	8	5	90	67	906

For Quantitative sample size was determined by using formula of Yamane

$$n = \frac{N}{1+N *e^2}$$

n = sample size

N = population size

e = level of significance or acceptable sampling error.

*Equation 1: Yamane Formula*

Based on the Yamane formula above, approximately 399 respondents above 18 years of age were needed to complete the structured questionnaire, and was done randomly using simple random sampling with replacement, using a fish bowl technique, a type of Probability sampling method. It was a cross sectional, one stage selection process. The questionnaire was standard tool, and administered to 402 respondents who completed it for 20minutes. The researcher did not see this as a burden since large amounts of data collected from a large number of respondents using the quantitative methodology still takes a relatively short period of time and is cost effective(35). A larger sample was also advantageous as it supported the exploratory descriptive analysis procedure further explained under data analysis.

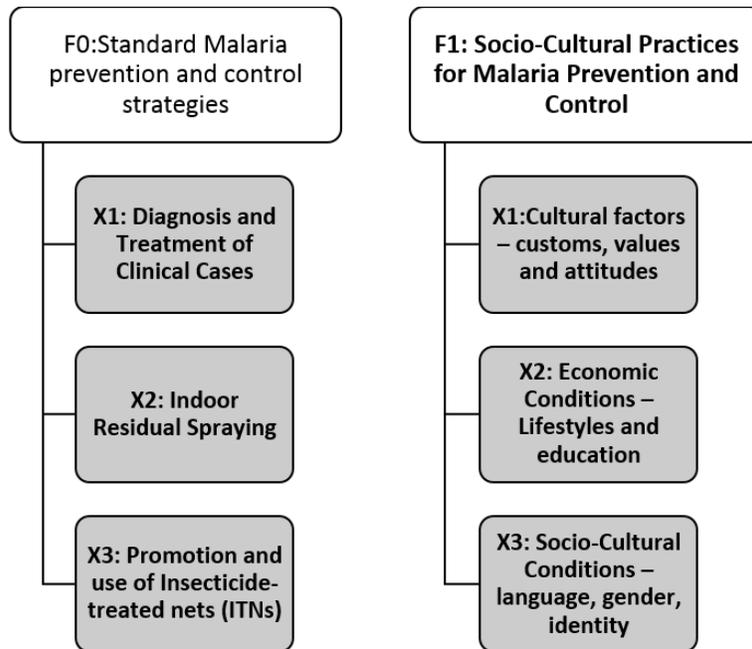
### **3.5 Inclusion and Exclusion Criteria**

#### **3.5.1 The Health Extension Workers and head of house holds**

To be included in this study, a HEW had to be deployed at a rural clinic where at least one positive rapid diagnostic test was recorded (see table 1). For a household to be included, it had to be located in a rural area with its structure constructed with either bricks, corrugated iron roof and wall, grass, sticks, reeds, poles, mud, cow dung or any other improvised material. Individual members of the household had to be aged 18 and above to participate in-in-depth interviews.

#### **3.5.2 The Households**

For a household to be included, it had to be located in a rural area with its structure constructed with either bricks, corrugated iron roof and wall, grass, sticks, reeds, poles, mud, cow dung or any other improvised material. Individual members of the household had to be aged 18 and above to complete the questionnaire. For this study, the dependent variables (surface attributes) included the standard malaria prevention and control strategies whereas the underlying factors (internal attributes) were the socio-cultural practices such as customs, lifestyles, education, language, identity, gender, values and attitudes towards malaria prevention and control (17). Socio-cultural practices (factors) with a shared variance were those found to affect more than one of the standard malaria prevention and control strategies and specific factors were identified as those who were found to affect a particular standard strategy.



*Figure 7: Graphical representation of surface attributes and the internal attributes*

Figure 6 above shows a graphical representation of the surface attributes, being the standard malaria prevention and control strategies and the internal attributes, which were the main focus of this study.

### **3.6 Research Instruments**

The research instruments were developed by the researcher and evaluated by the supervisors and other experts.

The study was divided in five dimensions, namely:

1. The participants' bibliography.
2. Knowledge and attitudes of the participant on malaria prevention, in relation to: net acquisition, ownership, use and maintenance, care and treatment, access to care, the barriers to nets use, barriers to health seeking behavior, traditional practices and socio-cultural preventive methods,

barriers to use of traditional practices, environment and livelihood factors that facilitate prevalence of mosquito bite.

3. Knowledge of participants on other methods used to prevent malaria
4. Knowledge of participants on livelihood, social and environment factors that promote exposure to mosquito bites and risk to malaria transmission
5. Perception towards use of traditional practices

Due to differences in sampling methods for quantitative and qualitative strands, the aims and instruments for data collection also differ(18,26,81). The research instruments therefore were divided into two groups, depending on the nature of the research design and methods and the all instruments were prepared in English and in Oshikwanyama. Although respondents had an option to respond in either English or Oshikwanyama the local vernacular and the mother tongue of the researcher.

The questions which were answered in Oshikwanyama, effort was made to translate back to English. The people who were not able to understand the English, they were provided with Oshikwanyama questionnaire, the researcher transferred the data into an English questionnaire to fill in the information provided by respondents. Care was also taken during translate back the responses into English language during the interview time, by trying to keep the original information as possible.

The research instruments were developed by the researcher and evaluated by the supervisors and other experts. The content used in research instruments were taken from various source, such as books, journals, research articles and papers, reports from Health Organisation, social medias and electronic sources, such internets.

### **3.6.1. Validity and Reliability and measure to ensure trustworthiness**

#### **3.6.1.1. Validity**

To ensure that there is tool stability and consistency in measurements, the researcher piloted both the survey questionnaire and the checklist with members of the rural communities in Ohangwena. In addition, the use of the mixed methods design was aimed at building greater validity for the results of this study (28).

The content validity and face validity were used as the study was assess pure descriptive and explorative, to solicit new information needed to develop a sociocultural congruent model.

The component of face validity was checked by the supervisors and other experts to confirm if the components and structure of instrument covers all the information that required to answer the research question and covers all the objectives.

The tools for collecting data were checked for content validity by addressing comprehensive inclusion of the content that covers the study objectives (20). As a result, the research collaborate with the supervisors throughout the research process, peer examination via seminar presentation at school level and conference presentation ,prolong observation as well as member checking to validate the content if it covers all the propose objectives. Further, the instrument was checked by various experts, study supervisors, members of the ethical clearance committee of the University of Namibia and the and publications committee; the postgraduate research unit committee of the University of Namibia, the research office of the Ministry of Health and Social Services, who assessed the study instrument for meeting the expected institutional standards, content and face validity(89).

### **3.6.1.2 Reliability**

The researcher applied salient mechanisms to minimize inherent inadequacies of individual methods through the mixed methods approach as a means to enhance reliability. Prolonged engagements with the respondents helped improve the credibility of the results including the collection of data through a variety of tools(18,81). Member checking provided room for verification and increased the likelihood of accuracy of the collected information(34). The use of multiple data collection methods was intended to increase test of reliability the pilot study, evaluation of instrument by supervisor and other expert made the instrument reliable as expert were checking if the instrument cover and answer the study objectives. Reliability was tested through various mechanisms, the pilot study was conducted for questionnaire with 15 members from Okongo district, focus group discussions with 12 HEWs, 6HEWs from Omundaungilo and 6 HEWs from Oshikunde Clinic and individual interviews with 2 rural respondents, from Omundudu village. The participants and respondents who took part in the pilot study were excluded in the main study. The following problems where identified during pilot study of all instruments:

- Focus discussion and in-depth interview main question was too narrow and guiding.
- There was a need to focus on one type of preventative practices before moving to next
- Some questions were not clear to the respondent.
- There was a need to translate the English version into local language, Oshikwanyama.

There finding were analysed and changes identified in instruments were incorporated to improve understanding.

The evaluation of instrument by supervisor and other expert made the instrument reliable as experts were checking if the instrument cover and answer the study objectives.

### **3.6.1.3 Credibility**

In this study credibility was achieved through prolong and face to face engagement with respondents, taking of field notes, use of mixed methods, triangulation of data collection tools, member checking, peer debriefing and transcription of interviews(83).

### **3.6.1.4 Transferability**

This study can be replicated and conducted in different context with reference to triangulation of data collection methods as well, sample and sampling methods.

### **3.6.1.4 Confirmability**

In this study confirmability was achieved by maintaining standard of allow external audit to take place. Supervisors and experts from the department of community and midwifery health nursing were sent recorded data, field notes, themes and subthemes for review. The use of mixed methods and triangulation of data collection tools help to gather enriched data.

## **3.6.2 Research Instruments for the Qualitative Design**

For this study, a semi-structured interview tool guide was used for in-depth interviews and focus group discussions with the heads of households and health extension workers, covering different components of malaria prevention and control. Adequate questions are a central component of high quality research because characteristics of questions greatly shape other design decisions(89). For this reason, questions in the semi-structured qualitative tool were designed to solicit open-ended responses that might not be achieved by the questionnaire and the structured checklist which had option choices for observable variables.

Focus group with 12 HEWs, 6 from Omundaungilo and 6 from Oshikunde Clinic and individual interviews with 2 members, from Omundudu village. The participants and respondents who took part in the pilot study were excluded in the main study. Their findings were analysed and changes identified in instruments were incorporated to improve clear understanding of questions.

#### **3.6.4 Research Instruments for the Quantitative Design**

To implement the quantitative methodology, a questionnaire was used to collect data. Ahead of the data collection procedure, a pilot study was conducted for questionnaire with 15 members, from Okongo district. The participants and respondents who took part in the pilot study were excluded in the main study. The questionnaire was divided in 2 main sections, namely Demographic data, and Preventive practices which further divided in knowledge on modern and traditional preventive practices, sociocultural factors that influences Malaria prevention; Knowledge about fever and its severity and early treatment; and barrier to malaria management and traditional preventive practices; knowledge on mosquito net maintenance and risk associated to livelihood and environment.

#### **3.7 Data Collection Procedure**

Initially, the researcher obtained permission from the MoHSS to conduct this study and a clearance letter from the University of Namibia committee of research and publication. Additional permission was obtained from the director of health in Ohangwena region after which the researcher visited a variety of village-level leaders to be granted permission to access and engage their constituents. The researcher conducted a village familiarisation tour to all villages included

in the study during which the purpose and objectives of the upcoming study were explained to potential participants. The letters granting permission for the research to be conducted were delivered to the regional governor's office, the local councilor offices, village headmen and health facilities where the study was to be conducted during the familiarisation tour.

Data collection commenced after the above process, which was a good entry method to the community to support the context-oriented approach contemplated by the researcher, supported by the established interpersonal relationships. The researcher personally collected the data – administered the questionnaires and conducted the interviews. Data was collected over three months from October 2017 to January 2018.

Each participant was requested to give oral consent before taking part in the interview. The researcher used a discussion guide with a main question: What is your perception on malaria prevention, control and care in your community? and probing questions:

1. What cultural practices do you know that are used in the prevention and control of malaria in this community?
2. What other malaria prevention and control strategies are available to this community?
3. How do the cultural practices influence the overall prevention and control of malaria in this community?
4. Can you please tell me how children aged 5 to 17 years are helped in the use of modern and traditional practices?

5. What are the barriers do you experienced that prohibit you achieving the intended goals of malaria prevention and control practices?
6. How can cultural practices be strengthened to achieve optimum prevention and control of malaria in this community?
7. What is the best way to communicate effective cultural practices in the prevention and control of malaria in this community?

Eight FGDs were conducted at selected clinics, and each group was involved 6-10 participants. FGDs were last for 45 to 60 minutes. It was conducted to explore the perceptions and describe of socio-cultural practices of community members with regard to malaria prevention and control.

The focus group discussions was executed with assistance from 3 volunteers, selected from each district by PHC supervisor that assisted with tape recording and was acting as escorts. Both volunteers were trained in advance on the use of battery operated recorder. The role of facilitation and field note was left with the researcher. No incentives was provided for this activities, but the researcher provide transport and food on daily basis for the volunteers

In addition, 20 face to face in-depth interviews were conducted with heads of households or their adult representatives. The interviews were conducted in the homes of the respondents together with observations. The interview last for 30-60 minutes.

During the interviews, the researcher took field notes, as the interviews were tape recorded by an assistant who was a volunteer.

The researcher used a semi structured interview guide with a main question as follows: What is your perception on malaria prevention, control and care in your household? And Probing questions were:

1. Can you please tell me the socio-cultural factors that influence the prevention of malaria in your community?
2. With reference to socio cultural factors you explained above, what practices are used to prevent and control malaria?
3. What other malaria prevention and control measures are available to you and your household member?
4. Can you please tell me how children aged 5 to 17 years are helped in the use of modern and traditional practices?
5. What are the barriers do you experienced that prohibit you achieving the intended goals of malaria prevention and control practices?
6. How can cultural practices be strengthened to achieve optimum prevention and control of malaria in this community?
7. What is the best way to communicate effective cultural practices in the prevention and control of malaria in this community?

All responses from FGDs and in-depth interviews were transcribed verbatim and analysed using ATLAS.ti.

The written consent was obtained from each respondent which requested before taking part in the study. The researcher administered the survey questionnaire to 402 respondents. The researcher completed one questionnaire with one participant at a time before moving to the next.

The questionnaire was designed to collect a large quantity of data from an equally large sample. By administering the questionnaire, the researcher saved time, enhanced completeness, minimized errors and cut traveling and call costs(24). It was also beneficial because where translation was needed, it was available instantly for participants who had difficulties interpreting the questions. Each participant was requested to give written oral consent before taking part in the study for all methodologies.

### **3.8 Data Analysis**

Quantitative data is expressed in numbers in the form of percentages to help the researcher to communicate the findings of the study. During the data collection process, the researcher ensured that all the questionnaires were checked for completeness. All the data from the 402 questionnaires were cleaned, coded and entered into the Statistical Package for Social Sciences (SPSS) version 22 for analysis. The study findings are presented and interpreted using frequency and contingency tables, cross tabulations, graphs and charts. Quantitative researchers tend to rely more on deductive reasoning, beginning with certain premises, for instance hypotheses and theories, and then drawing logical conclusions from them (24). Descriptive statistical analysis was applied to summarize quantitative data into easily identifiable relationships and patterns to aid data interpretation. Data was regrouped into smaller clusters with a shared variance to help with the isolation of constructs and concepts.

For qualitative methodology, during the data collection process, the researcher ensured that all the responses were recorded and captured with supplementary field notes. The data which were gathered through in-depth interviews and FGDs, thematic analysis was used to analyse the data

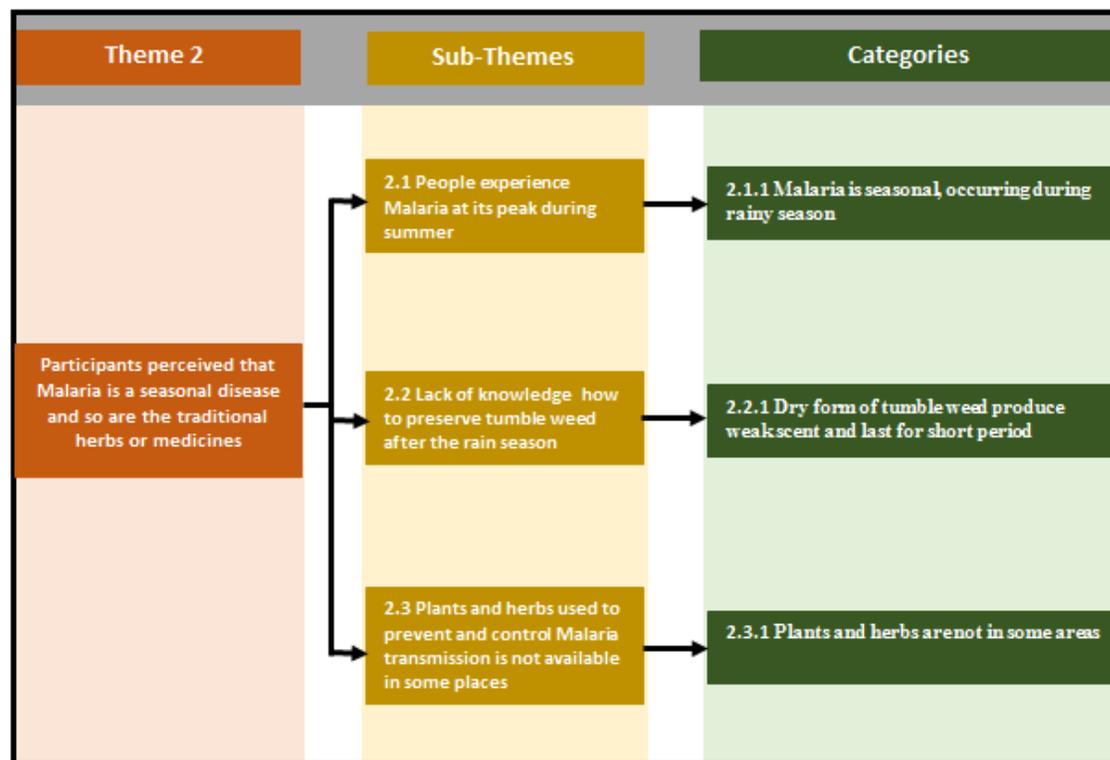
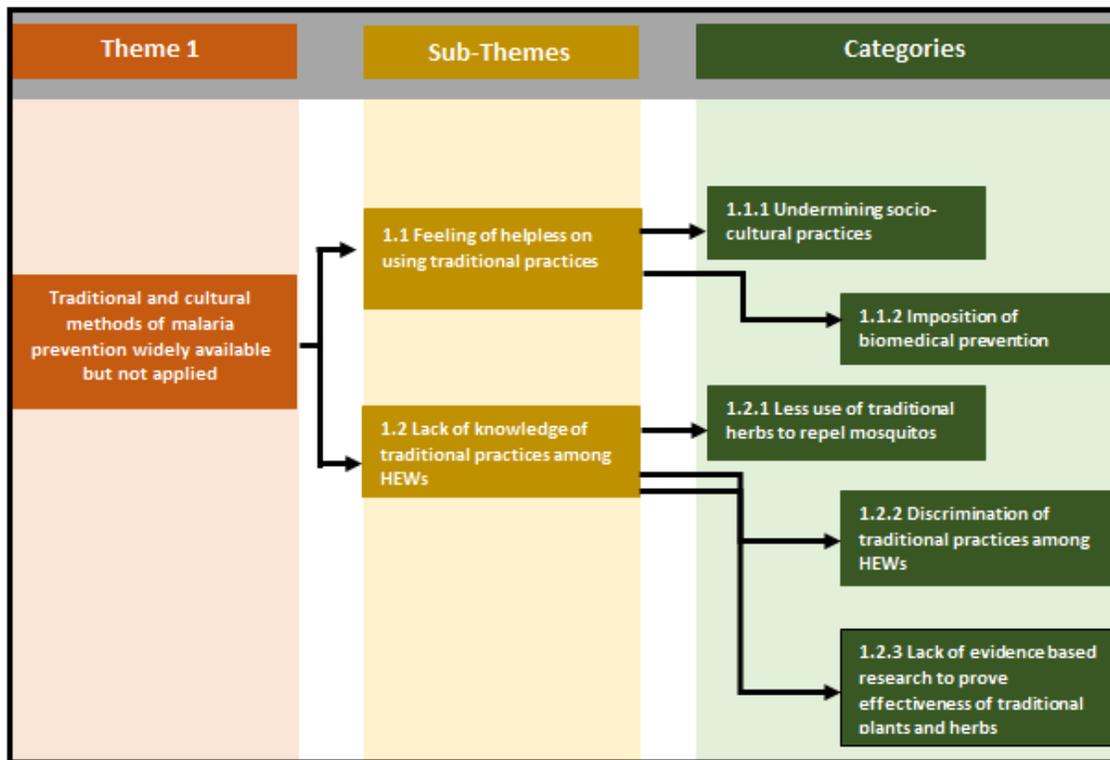
with the aid of ATLAS.ti., and coding operation aimed at shortening the diversity of verbatim responses into fewer content categories – namely themes and subthemes based on the objectives of this study - was developed and applied. All data analysis activities were aimed at establishing central themes, the significance of each theme and relationship to the objectives of the study using the following steps:

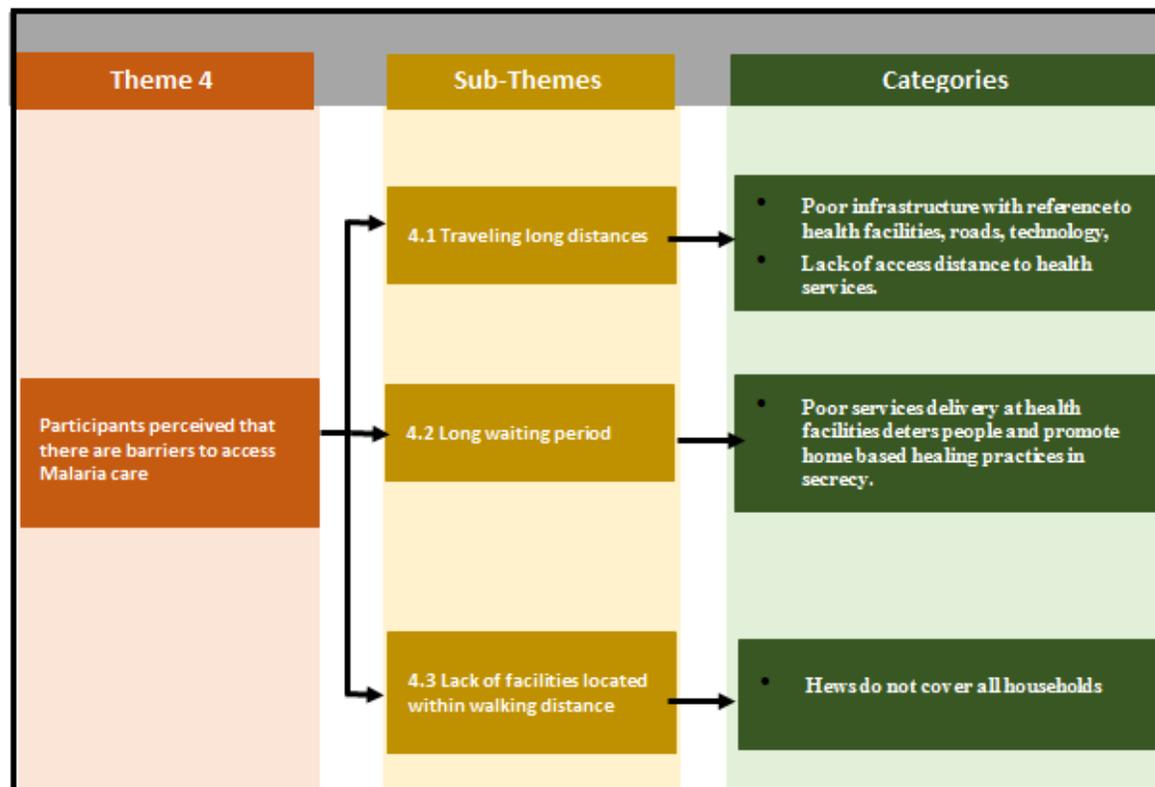
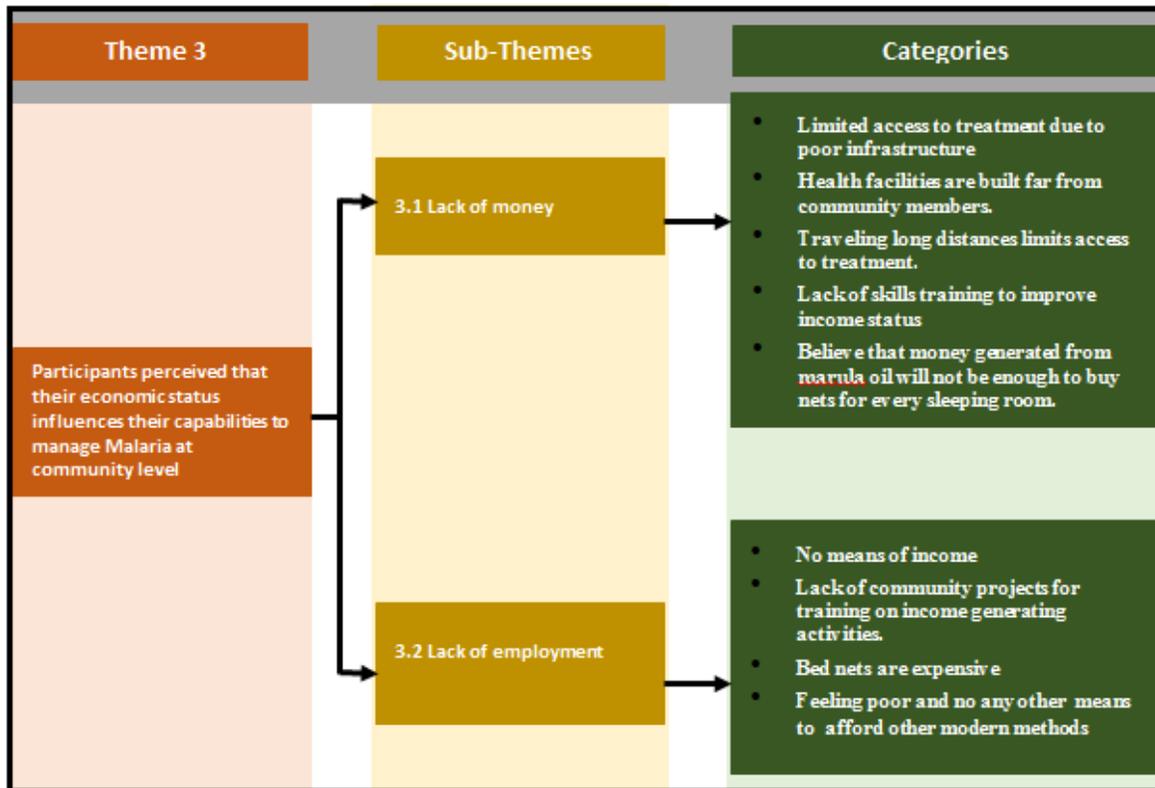
### **3.8.1 Phase 1: Familiarization with the Data**

This phase commenced during data collection and proceeded until data transcription. The researcher read through the data transcripts to obtain in-depth understanding of the data. Repeated reading assisted the researcher to generate meaning and interpret any emerging themes correctly.

### **3.8.2 Phase 2: Generating Initial Codes**

Secondly, the researcher created memos that related to the three existing theories to support emerging new knowledge from the study. The researcher used the inductive approach to generate themes of essence to socio-cultural congruent care. This was done by using open coding by way of identifying quotes from the participants. Six open codes were generated, each constituting subthemes and affiliated categories. Below is the diagram how the initial codes and building of the coding frame were generated





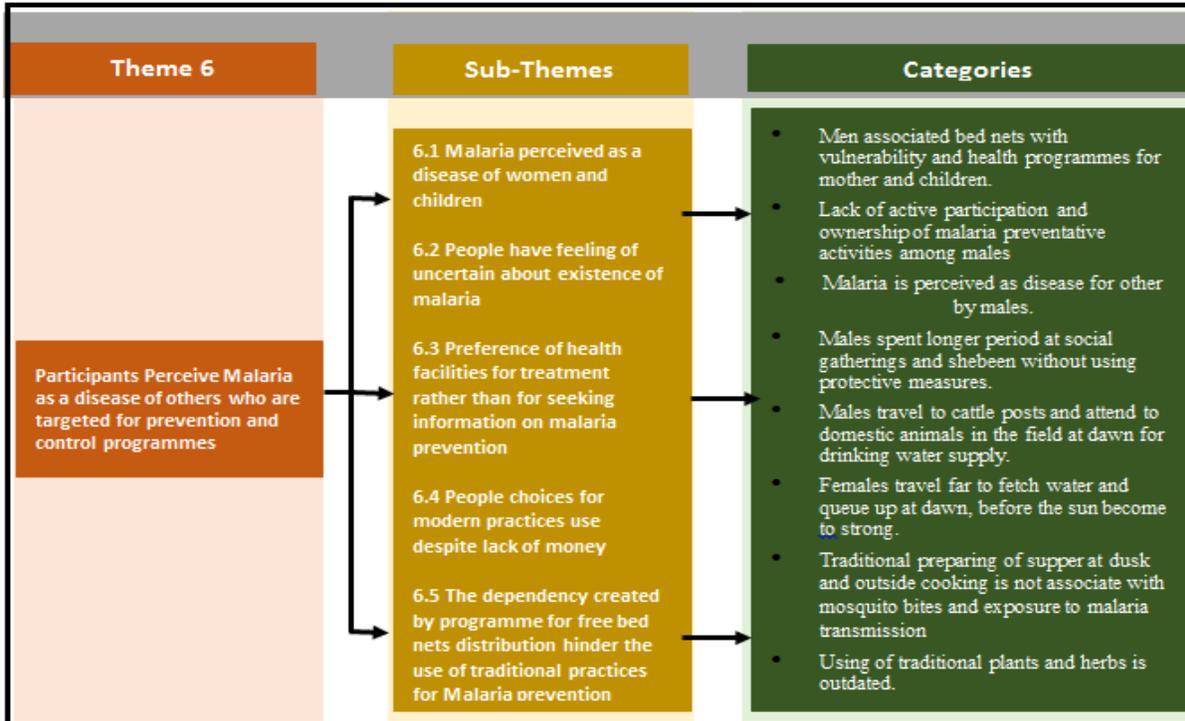
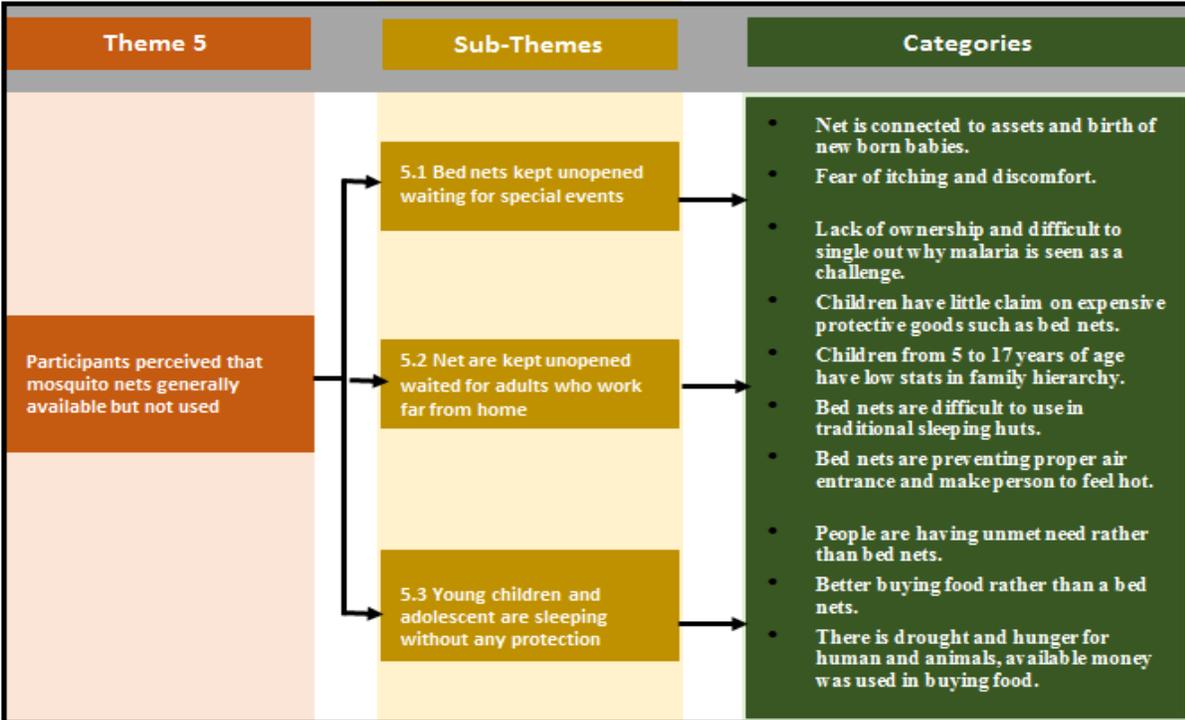


Figure 8: Initial codes and building of the coding frame

### **3.8.3 Phase 3: Building a Coding Frame**

For management purposes, the researcher reduced the data into coding frames which helped with organizing and further analysis activities. The coding frames were associated with the established study dimensions - age, sex, and geo-location. In addition, the following coding frames were built:

- Knowledge and attitudes towards standard malaria prevention;
- Access and equity to modern practices for malaria prevention;
- Perceptions towards the use of traditional practices;
- The influence of social and cultural factors on malaria prevention;
- Barriers to the use of health care facilities; and
- Knowledge of livelihood, social and environment factors that influence the risk to malaria.

All code labels were generated from participants' responses, field notes and interview notes. All code frames were independent of each other and not linked at this stage. They were only validated to establish headings which would help with sorting and organising data in the next step.

### **3.8.4 Phase 4: Searching for Themes**

Using the code manager tool, the themes and subthemes and the coding frames generated in phase 3 were sorted and organised (see figure 8). Where necessary, categories and sub codes were refined or others created to produce meaning and facilitate added meaning to data. Specific consideration was given to data with high or low frequencies to avoid losing valuable information.

### **3.8.5 Phase 5: Reviewing of the Themes**

The themes and subthemes were reviewed and narrowed down. During this process, the themes on cultural beliefs and gender were combined to form perceptions as a theme (Table 8). Poverty and economic status were also combined to become the economic status theme.

### **3.8.6 Phase 6: Defining and Naming of Themes**

The researcher named the themes according to their connotation, positive or negative to malaria prevention and control. For instance, preferences on use of local herbs versus undermining and availability and non-availability, economic status impacted by unemployment, access and poor infrastructure and perceptions based on gender, risk affiliated to existing targeted programs, victimization and social discrimination as well position of the participant in society

### **3.8.7 Phase 7: Producing the Report**

The researcher prepared the report comprised of export memos with direct quotations from the study responses. These memos are used in the next chapter where the findings are presented and interpreted.

### **3.8.9. Merging of the findings for the central concepts**

Merging of the two findings from the separate quantitative and qualitative strands were merged after data analysis. The researcher used side by side in a table form and discussions by summarizing both findings. The quantitative results was written first, followed by qualitative and checklist(20–22). This process help to merge the finding in separate table 9 that allow the research to make comparison, relationship and validation and spot out divergent and draw conclusions.

Each set of result was described and discussed first before moving to the next findings. Findings which found related to one another were discussed together and linked according to associations of the relatedness (see table 9). The discussions led to the identification of central concept and interpretation of the central statement that guided the development of the model.

### **3.8.10 Communication skills during data collection**

Effective communication is crucial for research process to enable smooth running of idea and freedom of express of ideas from respondents to obtain rich data of their lived experiences on influences of socio-cultural congruent. The researcher use the following communication skills during data collection methods. The below discussion was used to confirm the communication skills:

#### **Language use:**

The researcher was using open door policy to accommodate all two languages as preferred by the respondents. The respondents who are younger and have secondary education were keen to express themselves in English while middle adults choose to use Oshikwanyama local vernacular language. All the 20 in-depth interview were conducted in Oshikwanyama since all household are middle aged adult to elderly.

The focus group discussions was a mixture of both language as HEWs are trained in official language, hence there was three FGDs conducted in Oshikwanyama and the remaining 5 groups were conducted in English.

The researcher simplified the questions with reference to language and terminologies to facilitate free expression and ability to speak freely.

**Observation skills:** The researcher observe verbal and non-verbal expression of respondents during the interviews. The non-verbal like nodding of head, shaking of head, and coughing at the background and eye contact were observed. The livelihood factors, presence or absence of plants, herbs and animal dung, home environment and sleeping huts were also observed to facilitate enhancement of trustworthiness of the collected data.

**Tolerance and flexibility:** The researcher use tolerance and flexibility because respondent has variety of speed in responding to questions and completion of questionnaires. Some respondents are faster while other slow and in group discussion dominance was observed in some respondents. The researcher was flexible considering a rule to withdraw any time, after explanation of the purpose of the research study, males respondents opt not to take part in the study as they have low interest in Malaria activities. This result in delaying of starting time as the researcher has to exercise tolerance and flexibility of allow time for moving out and giving adequate time to the remaining respondents to complete the questionnaire or participating in FGD.

**Listening skills:** The researcher was listening care full as the interview progresses, and all non-verbal communication such as soft laugh, giggling, point with figure and cramping of hands in disagreement were all captured.

**Responding skills:** The ability of responding of the researcher was crafted in bracketing and this help the researcher to grasp the respondents expression clearly in conveying the feedback back to them without personal influencing from the side of the researcher.

**Reflecting skills:** The researcher give feedback using own words to interpret the non-verbal communication observing and to clear information that were not clearly stated.

**Paraphrasing skills:** the researcher confirm with the participants in translating their expression precisely without changing the initial idea.

**Clarification:** This was used where the researcher was doubted and not sure if what heard is correct to enhance the meaning of message from the participants.

**Focusing skills:** Focus was used to bring back the topic under discussion to right track.

**Silence:** During research, moment of silence is created for thinking and assimilation of thoughts from both participants and researcher. It helps to continue in sharing of information and motivate the respondent to talk clearer.

**Probing:** The probing skills is crucial for getting to the root of the problem by dig deep. It provide opportunity for follow up questions if researcher feel information provided are not adequate. The rich constructive information were obtained during probing.

### **3.9. Definition of concepts**

This process was originated from the data analysis of the mixed methods, quantitative and qualitative data that led to identification of related concepts. From related concepts, the process led to emerge of three cardinal concepts of empowerment, sustainability and integration was identified. These concepts were defined and their attributes were introduces to the readers to prevent confusion during model development(82). For enhance understanding, the use of dictionary and subject definitions of the main concepts are provided in chapter 5.

#### **3.9.1 Determine the defining attributes**

The researcher provide the similar meanings for each main concepts to narrow the essential and related criteria.

### **3.9.2 Development of model case**

The model cases were developed based on the dictionary and subject definitions.

### **3.10 Phase 2: Construction of relationship statements**

The construction of relationship statements involved the creation of conceptual meaning and structuring and conceptualizing of three theories. The essential concepts identified in phase 1 were described in terms of holistic, comprehensive, collaboration, consultation, transformation, modern care, traditional care, repatterning, accommodation, reconstruction, context, recipients, agents' dynamics, terminus, cultural awareness, knowledge, skills, desire and encounter. The researcher describe the nature of interactions between concepts of the model using related statements(82).

The related statement were formulated to provide links among and between concepts.

In addition to study results literature and dictionary meaning were used to collect information for the development of the conceptual meaning. The three theories, the practice oriented theory, the transcultural theory, and the theory of culture in care diversity and universality were adopted to guide the development of the conceptual framework. The concepts were arranged according to their relationship through interrelation statements. The framework formed the basis of departure for the development of the model that facilitated the empowerment to sustain integration of socio-cultural congruent Malaria care among rural households.

#### **3.10.1 Conceptual framework of the study**

##### **3.10.1.1 Objective 4: To develop a conceptual framework as a basis for the development of the guidelines regarding the socio-cultural congruent training model(phase two).**

Conceptual frame work is an important part of the process in model generating. It requires rigorous effort to construct and organise ideas with the purpose of analyse a phenomena.

In this study the framework guided the development of the model to facilitate the empowerment of sustain integration of socio-cultural congruent care in the training of HEWs to render holistic and comprehensive care to rural communities in Ohangwena region. The classification was based on the combination of concepts from the three theories and they are as follow: holistic, comprehensive, collaboration, consultation, transformation, modern care, traditional care, repatterning, accommodation, reconstruction, context, recipients, agents,' dynamics, terminus, cultural awareness, knowledge, skills, desire and encounter(17,37,90).

- ❖ Context: Refers to the natural setting in which the activities are carried out.
  - In this study the activities will be carried out at training centres and households in Ohangwena region.
- ❖ Agent: Who perform the activities?
  - The researcher, trainers and professional registered nurses working in health facilities.
- ❖ Recipients: Who are the recipients of these activities?
  - Health extension workers/community health workers, health promoters, community members, Government/ MoHSS, NGOs, Development partners such as WHO and all relevant stakeholders.
- ❖ Dynamics: What will be the dynamics be?
  - Challenges and problems identified from the community, authority, strategic plan and training curriculum content, which include
  - problem with holistic and comprehensive integrated care,
  - lack of collaboration and consultation,

- lack of transformation,
  - imposed modern care as the single solution noticed legally as a best care and is well documented,
  - neglected traditional care,
  - Lack of repatterning, accommodation, reconstruction, cultural awareness, knowledge, skills, desire and encounter.
- ❖ Procedure: What is the mechanism to solve the problem?
    - The model, and its guidelines, strategies and activities indicated.
  - ❖ Terminus: What will the end product?
    - Empowered sustain Integrated socio-cultural congruent care.
    - Improved care rendered by competent Health extension workers
    - Holistic and comprehensive malaria care and integrated curriculum.

### **3.11 Phase3: Development, description and evaluation of model**

The establishment of clear definition of concepts, analytic and close observation of interrelatedness of concepts and critical thinking play an important role in the development of the model(84). The development of the model is based on from the finding of the study during situational analysis in phase 1 and conceptual frame work developed in phase two.

### **3.11.1 Description of structure and process for the model development**

#### **3.11.1.1 Objective 5: To develop a socio-cultural congruent model for malaria prevention and control (phase three).**

The structure of the model gives form to the conceptual relationship within its branches. For the description is connected to the purpose of the model and in this study the model was for empowerment to facilitate the sustain integration of socio-cultural congruent care in the training of health extension workers to render holistic malaria care to community in Ohangwena region. The model was described according to six criteria, namely concepts, definitions, relationships, structure and assumptions(82).

### **3.11.2 Evaluation of the model**

#### **3.11.2.1 To evaluate the effectiveness of the socio-cultural congruent model in communicating malaria prevention and control messages among rural communities in Ohangwena region (Phase four).**

Evaluation of the model is the final stage in model development. Evaluation was done to validate if the model could bring the desired outcome that meet the end product of the study objectives. In addition, the following criteria were used:

- How clear is the model in reference with clarity of the central concepts, if relationships between attributes, antecedents and consequences of these concepts are easy to understand?
- How simple is the model refer if the structures of the model and its components are easy to understand.
- How general is the model with reference to its scope and purpose.
- How accessible is the model with reference to empirical accessibility.

- How important is the model in relation to its purpose, which is the empowerment to sustain integrated socio-cultural congruent malaria care in the training of health extension workers to render comprehensive malaria care in Ohangwena region.

### **3.12 Phase four: Guidelines for the operationalization of the model**

The guidelines was developed to facilitate the implementation of the model and to determine its feasibility of operationalized in the context it was designed for. The operationalization of the model in the practical settings was guided by the establishment of the guidelines

## **4.1 Ethical Principles**

Ethical considerations are of utmost importance in research undertakings that involve human beings. This is because the researcher has a duty to respect and protect the human rights, and the general welfare of the participants. Ethical standards are moral obligations seen as an integral and core responsibility of the researcher to avoid detrimental effects and consequences to participants.

### **4.1.1 Approval**

The researcher sought approval to conduct the study from the ethical clearance committee of the University of Namibia research and publications (**ANNEXURE B**). Permission to conduct the study in Ohangwena region was granted by and obtained from the Ministry of Health and Social Services, and the Director of Health in Ohangwena region.

#### **4.1.2 Informed Consent**

Informed consent was obtained from the headmen for entry into each rural community. The researcher also asked consent (18) from health facilities supervisors, local traditional authority such as councilors to enter their health facilities, constituencies and villages(18).

Consent was obtained from the heads of households to enter their houses to conducting face to face interviews. The purpose of the study was explained to facilitate understanding and cooperation. The researcher read the content of the consent form( ANNEXURE F), identified herself to participants and informed the participants that the research information was meant for academic purposes. The type of consent obtained depended on the preference of the respondents and participants. Both oral and written consent were obtained. Participation was voluntary for as long as the participant deemed it fair and reasonable. The researcher explained to each of the participants that they had the option to opt out (28).

#### **4.1.3 Right to Confidentiality, Anonymity and Autonomy**

The participants were respected and their information was kept confidential. The data collected were secured and stored in a locked suitcase all the time. Access to the data was strictly controlled for the duration of the study. The researcher ensured anonymity and participants were not asked to provide their names and any other personal particulars for this study. All the responses provided were free from personal information as no response was linked to an individual participant in any form(18,26). The autonomy of all participants was respected. The participants reserved their right to withdraw from the study at any time without coercion. The participants remained self-determined with values and independent decision making.

#### **4.1.4 Principle of Justice and Privacy**

All participants were treated fairly and equally throughout the study process. Where a participant felt uncomfortable with a question, they were free not to answer. Participants also had a right not to disclose any information they felt uncomfortable to disclose. Care was taken to avoid any physical, social, emotional and psychological harm or threat(18).

#### **5.1 Summary**

This chapter discussed the research methodology and design used in this study. It further discussed the reasoning strategies and research methods used to back up this study as well as ethical principles. The next chapter presents the results of the study.

## CHAPTER FOUR

### RESEARCH RESULTS, DISCUSSIONS AND IDENTIFICATION OF CENTRAL CONCEPTS

#### 4.1 Introduction

In the previous chapter, the study design and methodology were presented and discussed. This chapter, describes the data that were analysed and were followed by a discussions of the finding from mixed method data. In this chapter, the findings from concepts analysis were based on the research objectives. Furthermore, the research objectives guided process of the study. Discussion of the finding led to identification of the central concepts and describe of the central statements that guided the development of the model to facilitate socio-cultural congruent Malaria care in the training of HEWs in Ohangwena region.

The discussion of result from concept analysis were descriptive of quantitative objectives and explorative based on qualitative objectives as narrative results of the study. The descriptive results were presented in tables, graphs and figures. The narrative results were presented as verbatim quotes in italic forms, as well as formulation of themes and sub-themes. Because the research is mixed method study, quantitative and qualitative data were merged using side by side comparison approach, which is done within the discussion. In the next report, quantitative finding was discussed first, followed by qualitative findings, that is either in form of relate or diverge the statistical results.

## 4.2 Findings from the Quantitative Study

### 4.2.1 Respondents' Age Profile

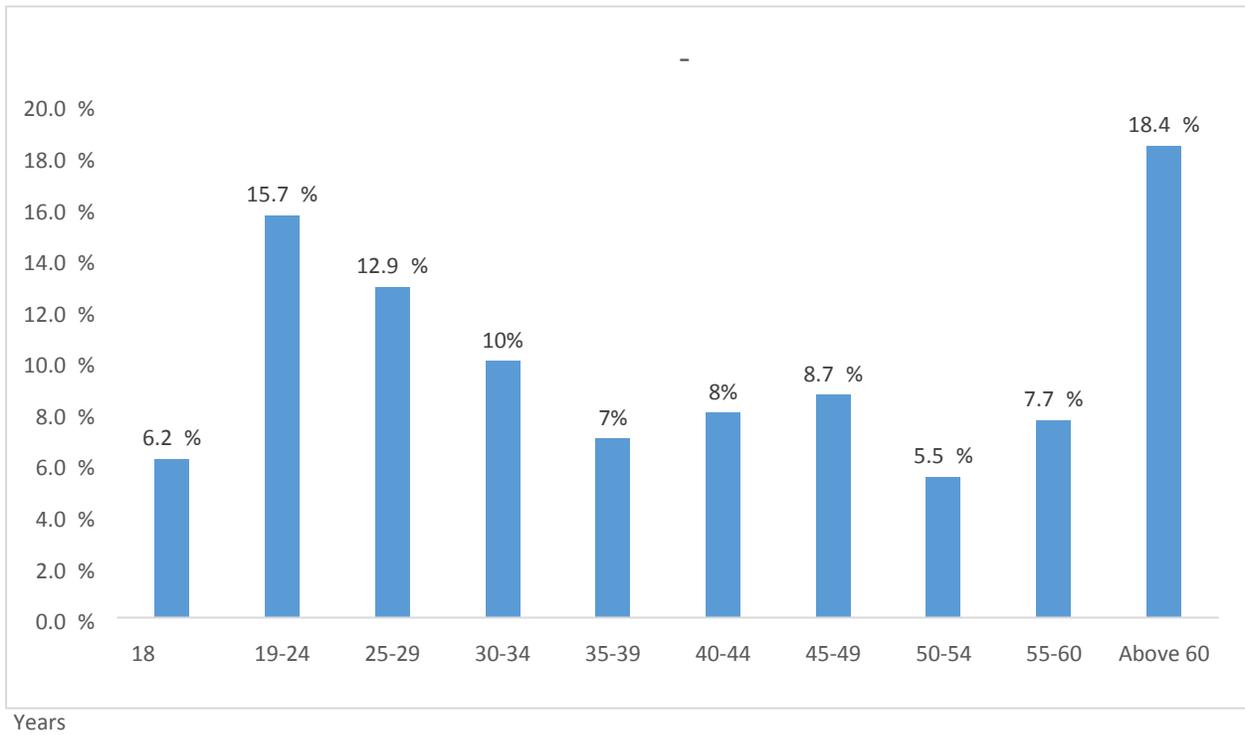


Figure 9: Respondent age group

Respondents were asked to indicate their age by selecting the age-group they belonged to. As can be seen in Figure 7 above, those above the age of 60 were 18.4 %, respondents between 19-24 years were 15.7 %, those under the age group 25-29 years were 12.9 %, 30-34 years were 10 %, and 40-49 years were 8.7 %. Other age groups included 40-44 years with 8.0 %, 55-60 years with 7.7 %, 35-39 years 7.0 %, 18 years were 6.2 % and 50-54 years were 5.5 %.

Table 4: Age of respondents in relation to net ownership and usage

		Yes	No	Total
Yes	18 Years	9	0	9

	To which of the following age-groups do you belong	19-24 Years	29	2	31
		25-29 Years	27	0	27
		30-34 Years	21	1	22
		35-39 Years	10	0	10
		40-44 Years	18	2	20
		45-49 Years	17	0	17
		50-54 Years	9	0	9
		55-60 Years	19	0	19
		Above 60	40	2	42
Total			199	7	206
No	To which of the following age-groups do you belong	18 Years	2	11	13
		19-24 Years	4	25	29
		25-29 Years	0	23	23
		30-34 Years	3	15	18
		35-39 Years	3	11	14
		40-44 Years	2	9	11
		45-49 Years	6	10	16
		50-54 Years	0	13	13
		55-60 Years	2	9	11
		Above 60	9	21	30
Total			31	147	178
Total	To which of the following age-groups do you belong	18 Years	11	11	22
		19-24 Years	33	27	60
		25-29 Years	27	23	50
		30-34 Years	24	16	40
		35-39 Years	13	11	24
		40-44 Years	20	11	31
		45-49 Years	23	10	33
		50-54 Years	9	13	22
		55-60 Years	21	9	30
		Above 60	49	23	72
Total			230	154	384

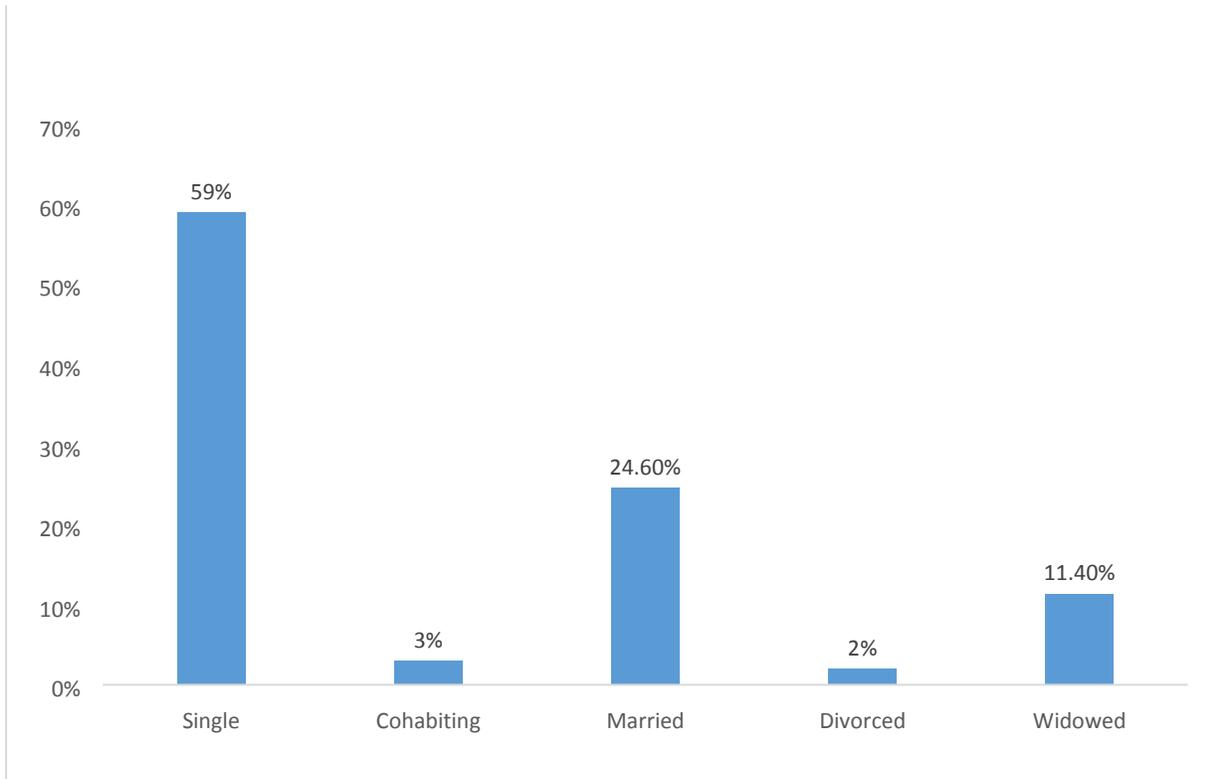
The age of respondents plays important part in the findings of this study. The findings revealed that the majority were elderly people, followed by youths, young adults and middle adults. The

age 60 years on its own is a risk factor due to physiological and social status of the elderly. As a person grows older, the body becomes weaker and makes it difficult for the elderly to take care of other family members in the household. The majority of the households were accommodating elderly people, 60 years and above.

#### **4.2.2 Respondents' Gender Profile**

The study findings shows that the majority of the respondents were female at 72.3% as the male respondents were 27.8%. The majority of household heads consisted of females and males were a minority. Gender plays a role in malaria prevention. The majority of males do not generally participate in household health activities as this role is associated with the female gender. This finding is similar to the study done in Southern Tanzania (46)

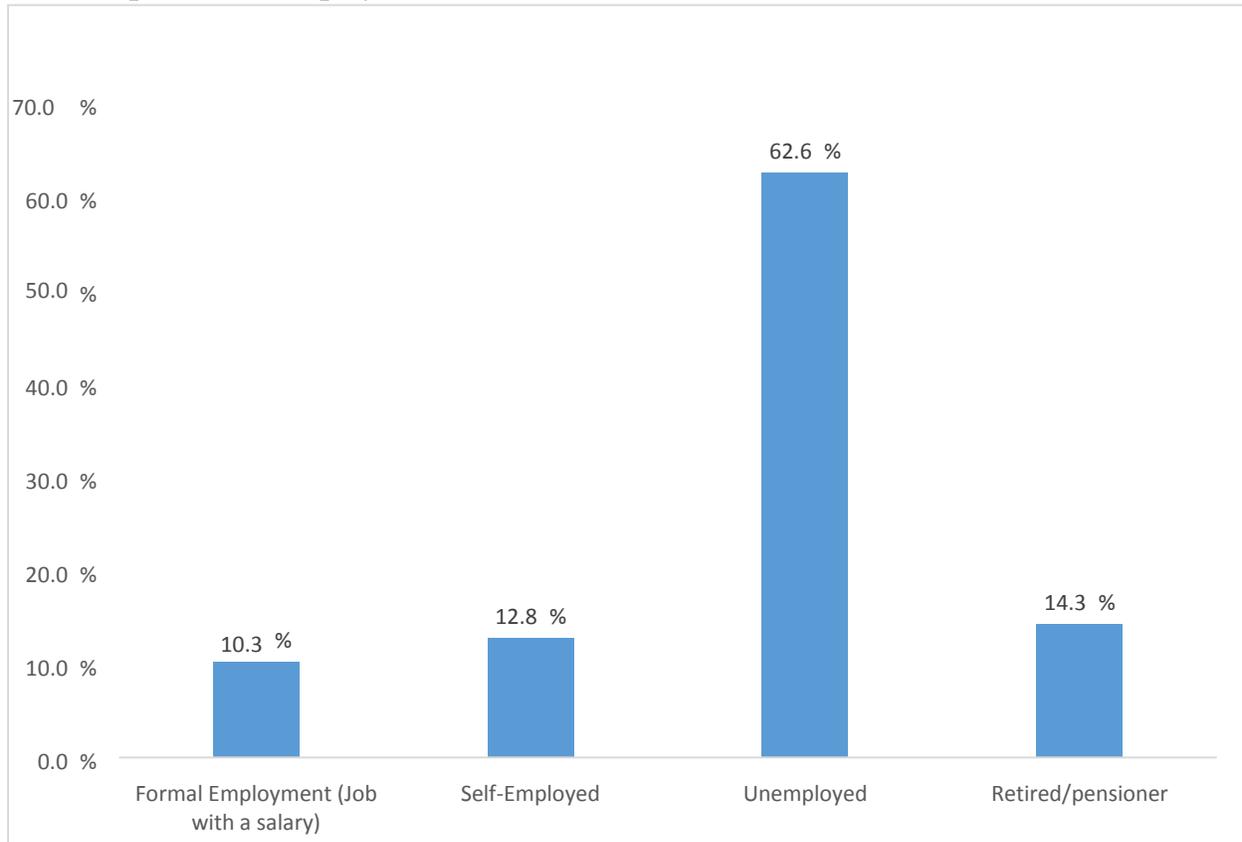
### 4.2.3 Respondents' Marital Status



*Figure 10: Marital Status of respondents*

Respondents were also asked to indicate their marital status. Findings as indicated in Figure 9 above reveal that 59 % were single, as the married were 24.6 %. In addition, 11.4 % were widowed, whereas 3 % of the respondents were in a cohabiting relationship. Only 2 % of the respondents stated that they were divorced.

#### 4.2.4 Respondents' Employment Status



*Figure 11: Respondents' employment status*

Figure 10 above shows that of all the respondents, 62.6% were unemployed, while 14.3 % were retired and/or pensioners. In addition, 12.8 % were self-employed, and only 10.3 % were in formal employment, which meant a job with a regular salary. Those who stated that they were employed were engaged in various jobs. Figure 11 below shows the different occupations each was engaged in.

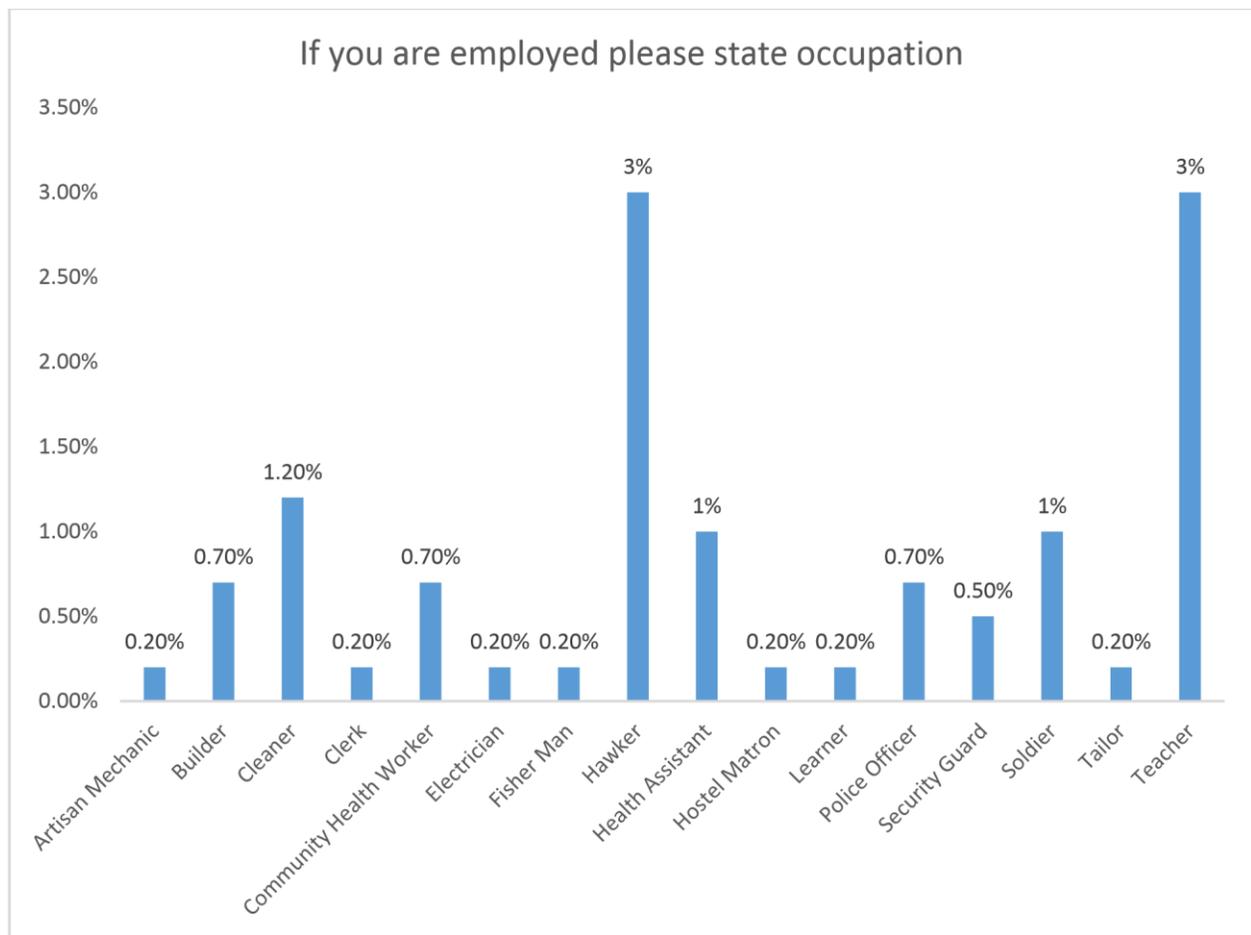
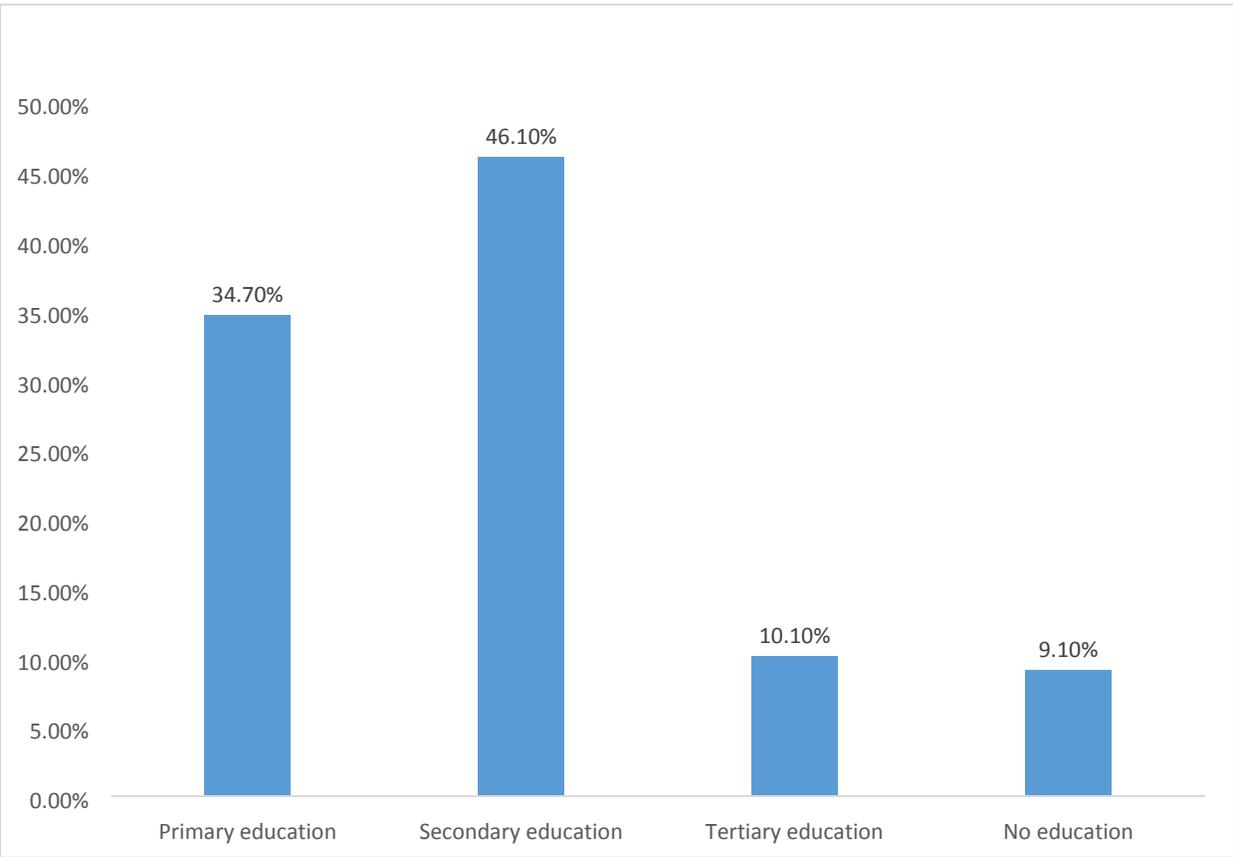


Figure 12: Occupation of employed respondents

According to Figure 10 above, of the respondents who were employed, 3% were hawkers and another 3% teachers. The rest of the occupations were all below 2% including artisan mechanics, builders, cleaners, clerks, electricians, fishermen, health assistants, hostel matrons, learners, police officers, security guards, soldiers and tailors.

#### 4.2.5 Respondents' Highest Level of Education



*Figure 13: Respondents' Highest Level of Education*

Figure 11 above show the highest level of education obtained by the respondents. The majority, 46.1 % reported that they had obtained secondary education, 34.7 % completed primary education, 10 % obtained tertiary education and 9.1 % had no education.

Table 5: Use of Mosquito Net in Relation to Level of Education

		Yes	No	Total
highest level of education	Primary education	71	2	73
	Secondary education	89	3	92
	Tertiary education	18	1	19
	No education	16	1	17
Total		194	7	201
What is the highest level of education you have achieved	Primary education	11	49	60
	Secondary education	11	68	79
	Tertiary education	2	17	19
	No education	7	11	18
Total		31	145	176
What is the highest level of education you have achieved	Primary education	82	51	133
	Secondary education	100	71	171
	Tertiary education	20	18	38
	No education	23	12	35
Total		225	152	377

### 4.3 Knowledge pertaining to mosquito nets

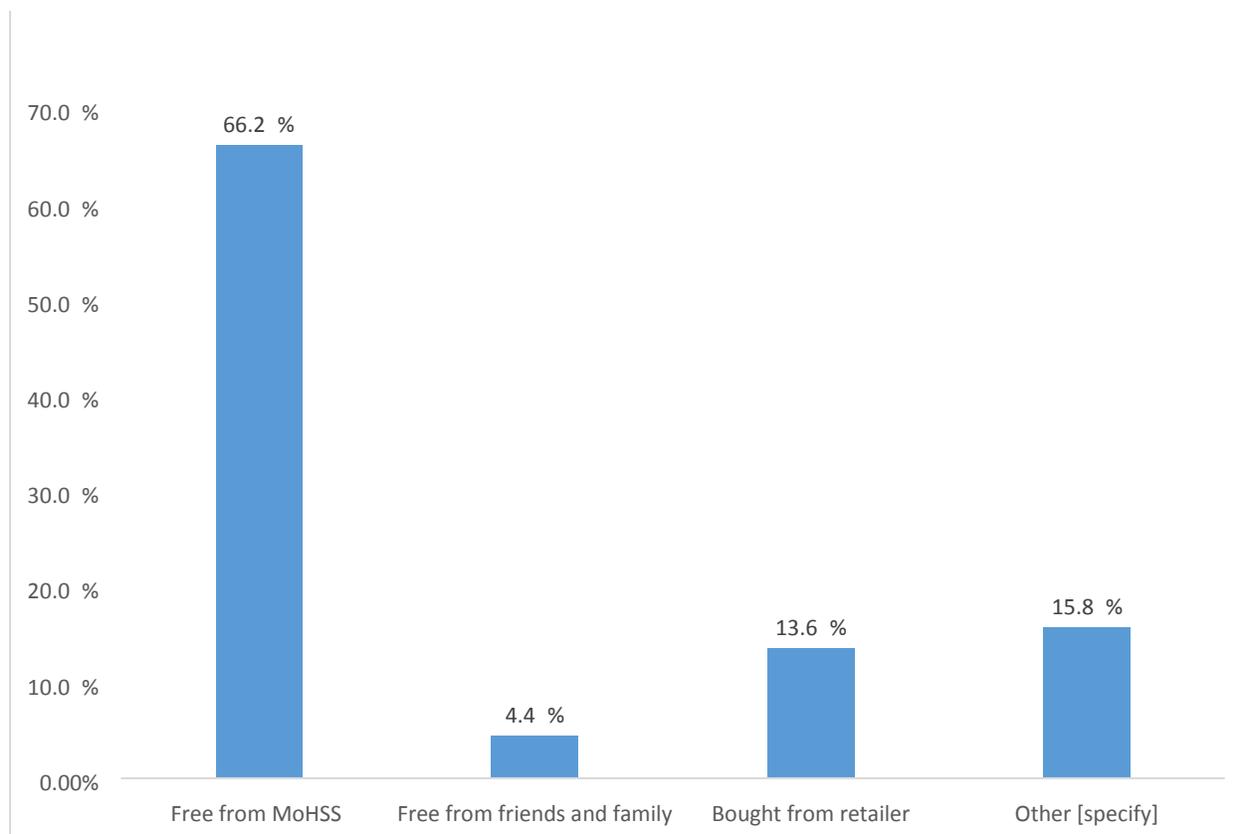
#### 4.3.1 Knowledge on Ownership, Acquisition, and Usage of Mosquito Nets

In terms of ownership of mosquito nets, 58.3 % of the respondents reported that they owned a mosquito net while 41.7 % did not own a mosquito net.

*Table 6: Net ownership related to Age of respondent*

		Yes	No	Total
age-groups in years	18	9	0	9
	19-24	29	2	31
	25-29	27	0	27
	30-34	21	1	22
	35-39	10	0	10
	40-44	18	2	20
	45-49	17	0	17
	50-54	9	0	9
	55-59	19	0	19
	60+	40	2	42
Total		199	7	206

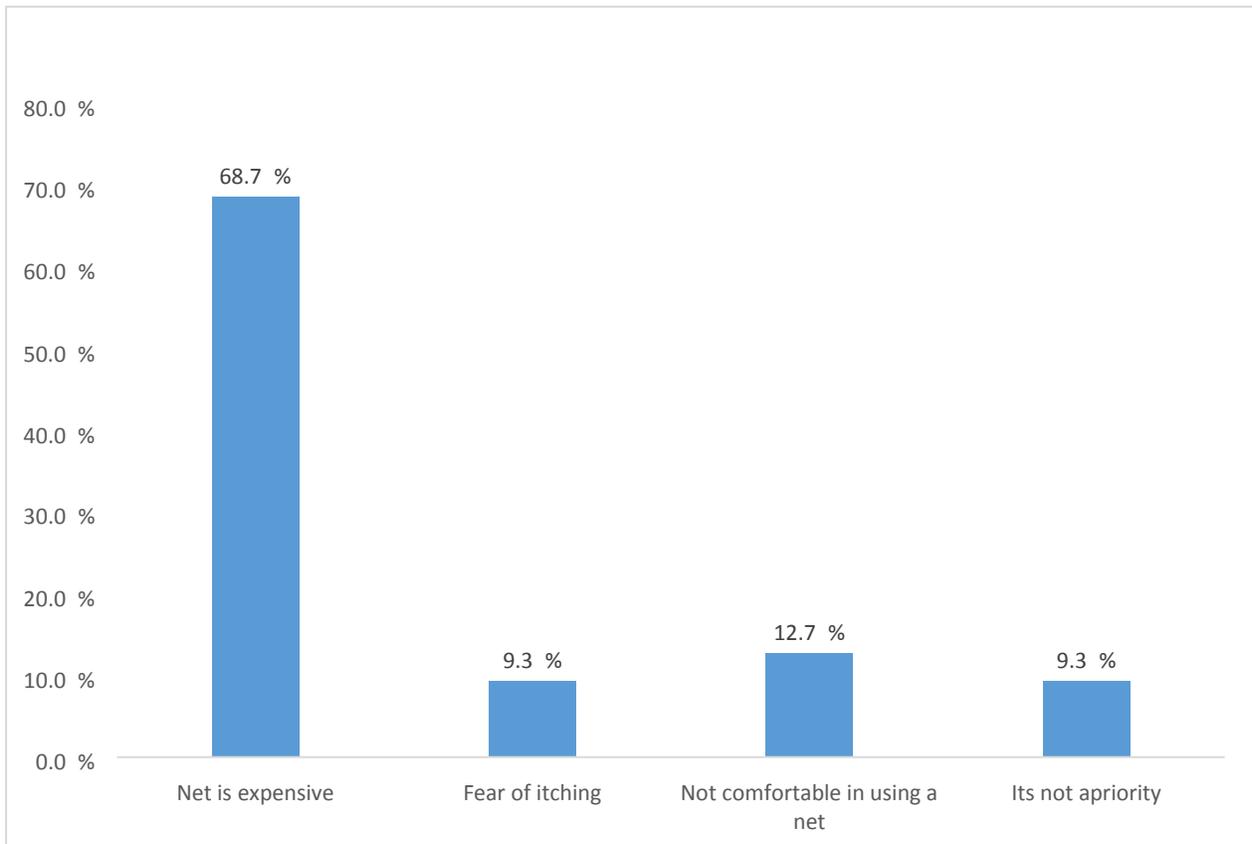
There are a variety of ways through which the respondents acquire mosquito nets.



*Figure 14: How the Respondent Obtained the Mosquito Net*

Figure 12 above shows that the majority of the respondents, 66.2 % acquired the mosquito net free from the MoHSS, 15.8 % obtained their net from other sources. When asked to specify these sources, they included the

Anglican and Catholic Churches, the Namibia Red Cross Society and the Trans Kalahari Malaria Initiative. In addition, 13.6 % of the respondents stated that they bought the mosquito nets from retail shops and 4.4 % acquired their mosquito nets free from friends and family.



*Figure 15: Factors prevent respondents from acquiring mosquito nets*

Respondents who did not have mosquito nets were asked what prevented them from acquiring them. Figure 15 above shows that 68.7 % of the respondents felt that nets were expensive, 12.7% indicated that they were not comfortable using a net, while the respondents who indicated fear of itching and the feeling that the mosquito net was not a priority respectively have 9.3 %.

Sleeping under a treated mosquito net is one of the effective ways of preventing malaria.

Respondents who had a net were asked if they slept under their nets as a means to prevent malaria.

Result shows that the majority of the respondents at 53.6% did not sleep under a mosquito net while only 46.4% slept under a mosquito net.

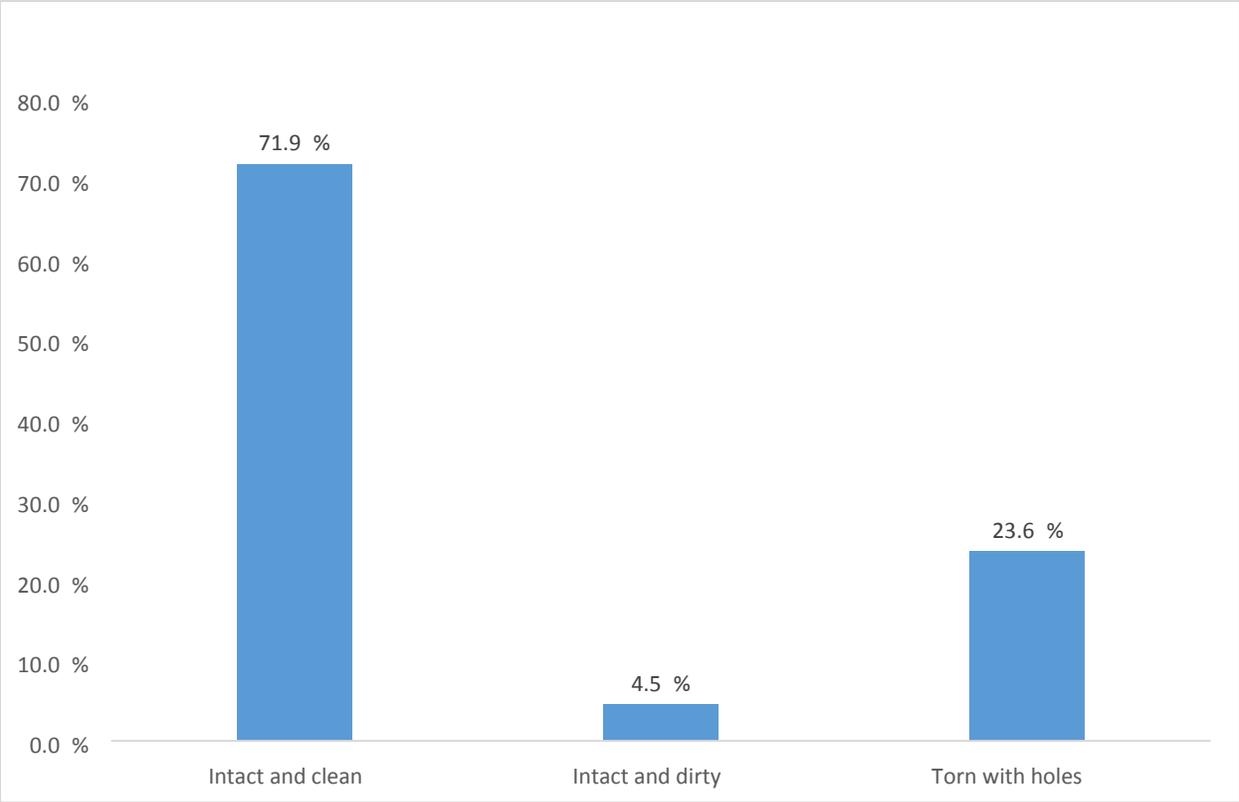
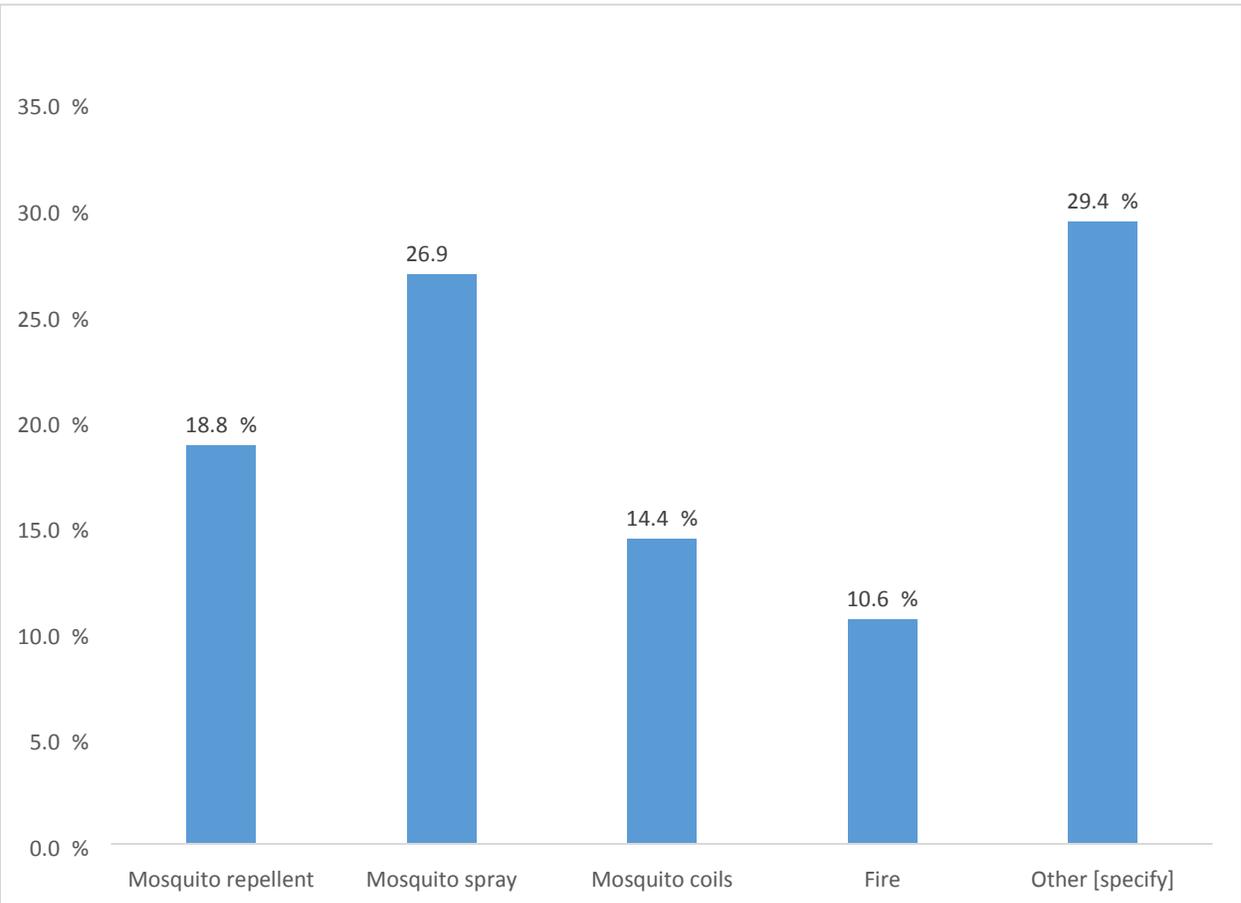


Figure 16: Current Quality of the Mosquito Net

Where mosquito nets existed, respondents were asked about the quality of such nets. Figure 17 above shows that 71.9 % of respondents reported that their mosquito nets were intact and clean. On the other hand however, 23.6 % of the respondents reported that their nets were torn and had holes. Another 4.5% of the respondents reported their nets to be intact but dirty.

**4.3.2 Other Practices for Malaria Prevention**



*Figure 17: Other Practices Respondents use to Prevent Malaria*

Other than mosquito nets, respondents were asked to report of any other practices they used to prevent malaria. Figure 18 above shows that 26.9 % of the respondents used mosquito sprays, 18.8 % used mosquito repellents 14.4 % reported to use mosquito coils, fire was reported to be used by 10.6 % and 29.4 % reported other additional practices. These additional practices are presented in Figure 18 below.

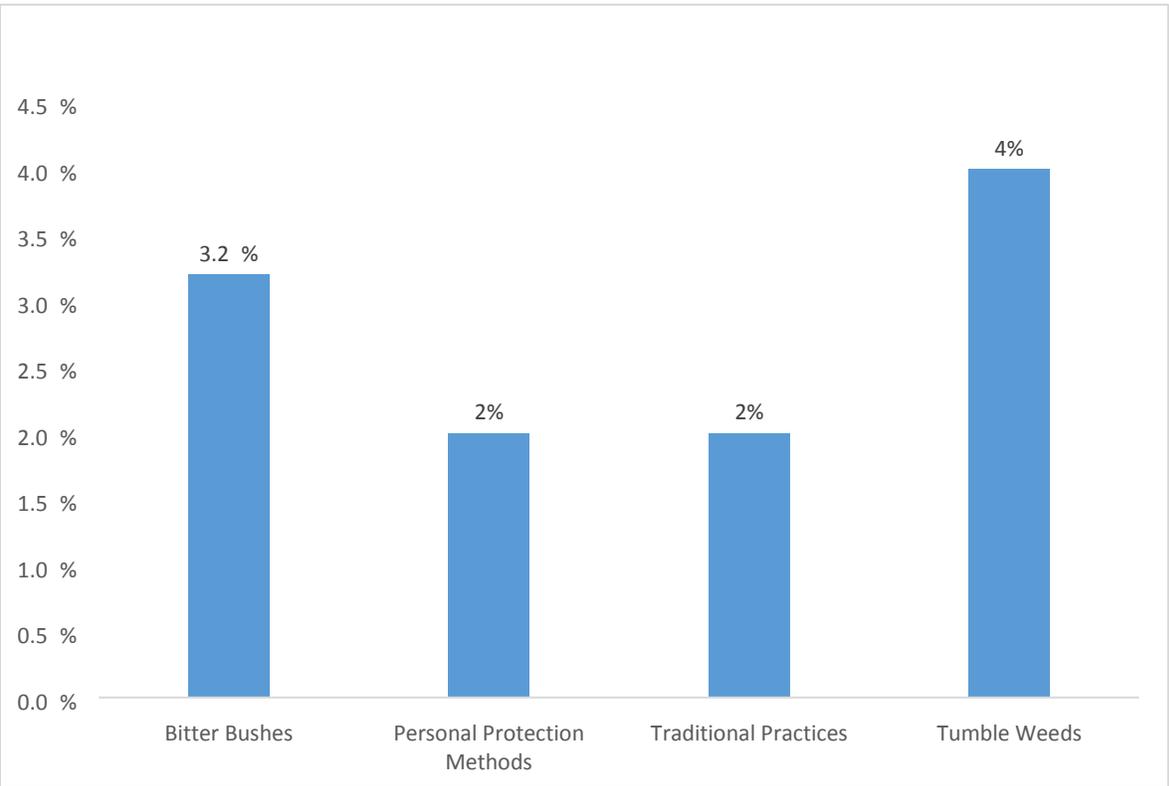


Figure 18: Traditional Methods to prevent malaria

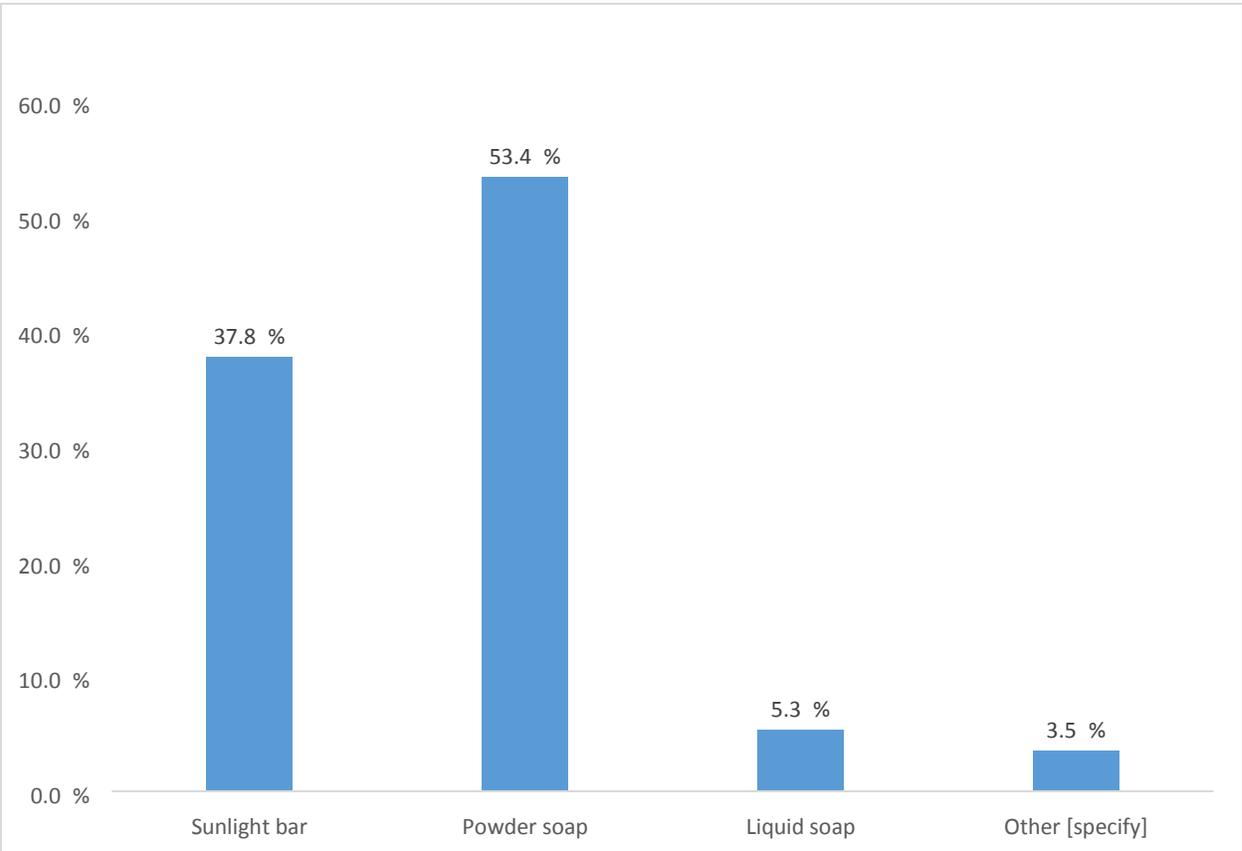
Among other methods of malaria prevention, respondents stated that they used tumble weeds at 4%, bitter bushes 3.2%, and at 2%, respondents used personal protection methods as well as traditional practices respectively.

Table 7: Comparison of modern practices and traditional practices for Malaria prevention per age group

		Modern practices	Bitter Bushes	Personal Protection Methods	Other traditional Practices	Tumble Weeds	Total
Age-groups	18	20	2	1	1	1	25
	19-24	60	2	0	0	1	63
	25-29	45	3	1	1	2	52
	30-34	37	0	2	0	1	40

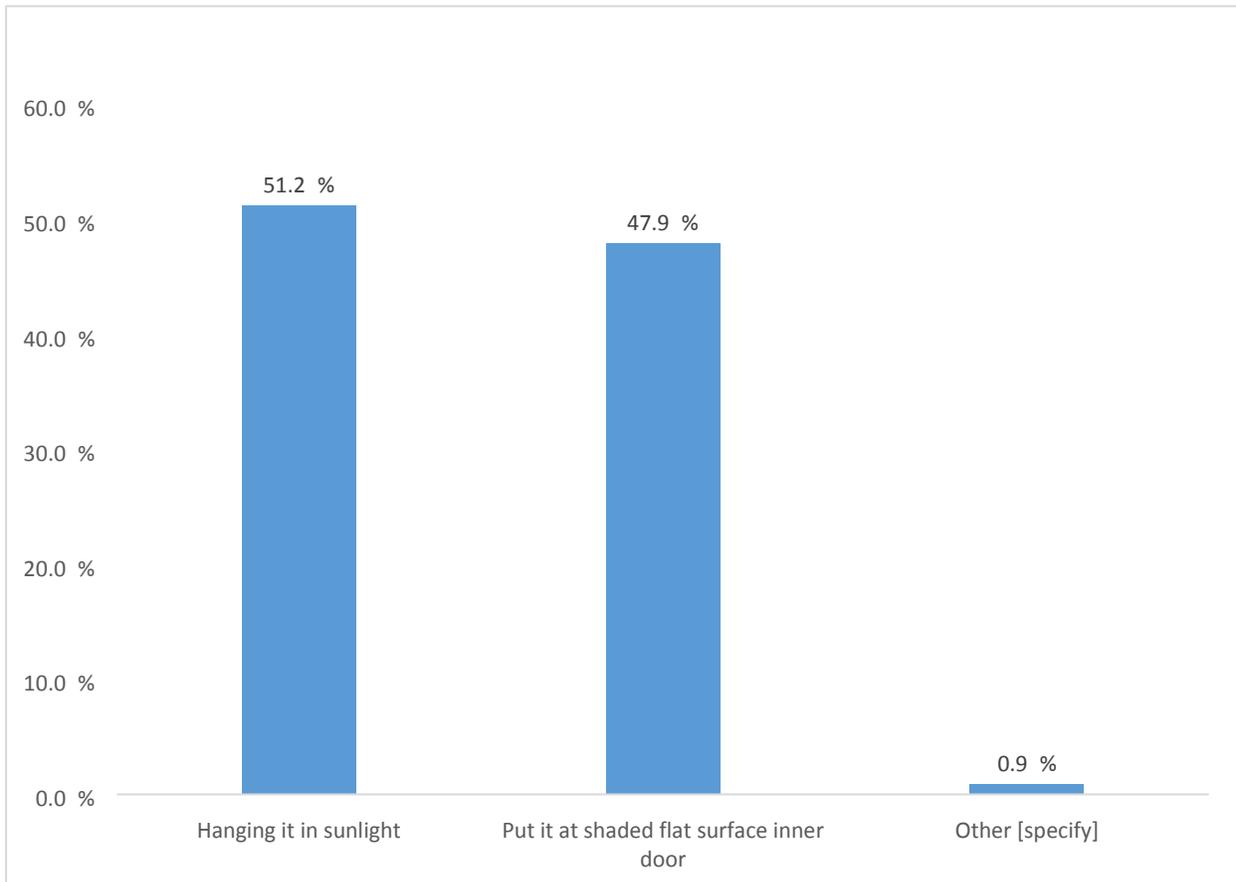
	35-39	26	1	0	0	1	28
	40-44	31	0	0	1	0	32
	45-49	33	1	0	0	1	35
	50-54	18	0	0	2	2	22
	55-60	29	1	0	0	1	31
	Above 60	58	3	4	3	6	74
<b>Total</b>		<b>357</b>	<b>13</b>	<b>8</b>	<b>8</b>	<b>16</b>	<b>402</b>

**4.3.3 Knowledge of Respondents on Mosquito Net Maintenance**



*Figure 19: Type of soap used for washing mosquito nets*

Figure 19 above shows that 53.4 % of the respondents used powdered soap, 37.8 % used sunlight bar soap, 5.3 % used liquid soap and 3.5 % stated that they used materials other than soap, which included substances such as ash.



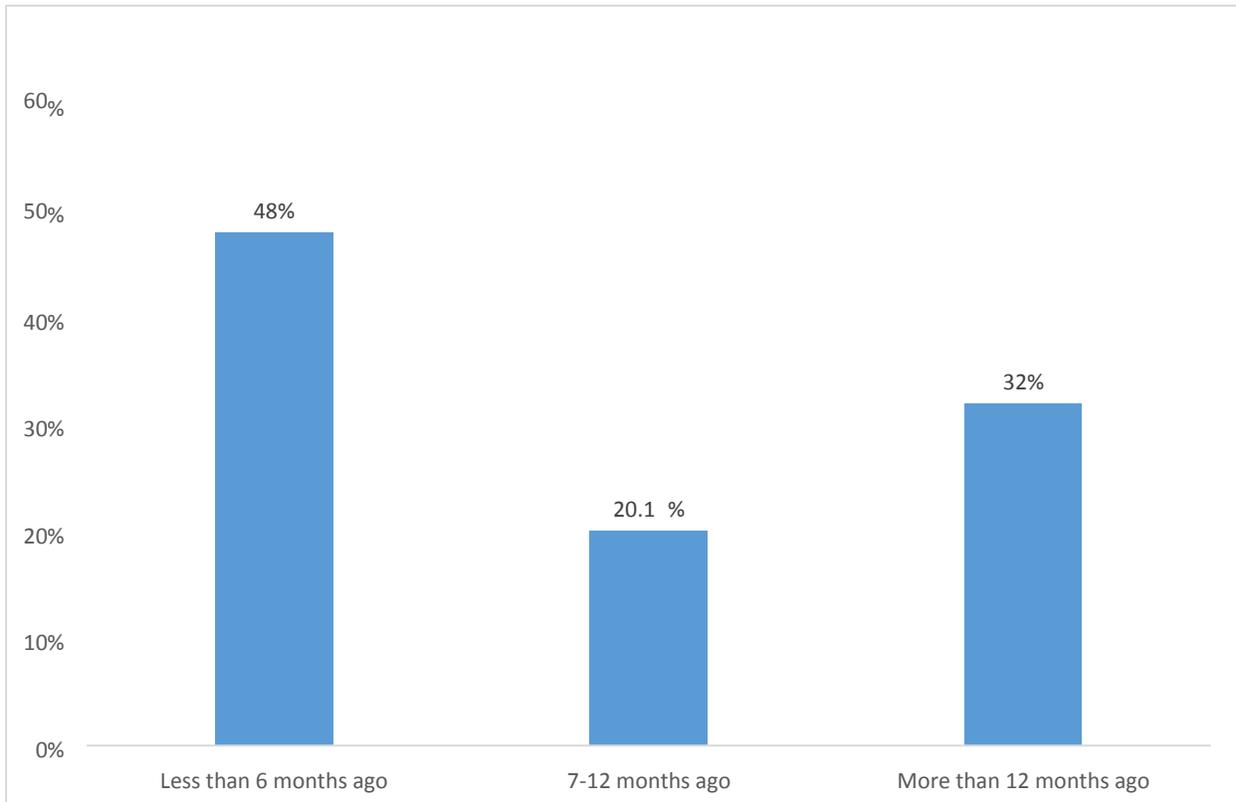
*Figure 20: Drying Methods of Mosquito Nets*

The drying method of a mosquito net is important in maintaining its quality. When asked to indicate which methods they used to dry their mosquito nets, 51.2 % of the respondents indicated that they hanged it in sunlight while 47.9 % indicated that they put the mosquito nets in a shaded flat surface indoors. The remaining 0.9 % used other methods.

#### **4.3.4 Awareness and Knowledge on Indoor Residual Spray**

The Ministry of Health and Social Services, through its malaria prevention program, sprays houses in endemic areas for the prevention of malaria. Result shows that 61.6 % of households had their

houses sprayed while 38.4 % of the respondents reported that their houses were not sprayed for malaria prevention.

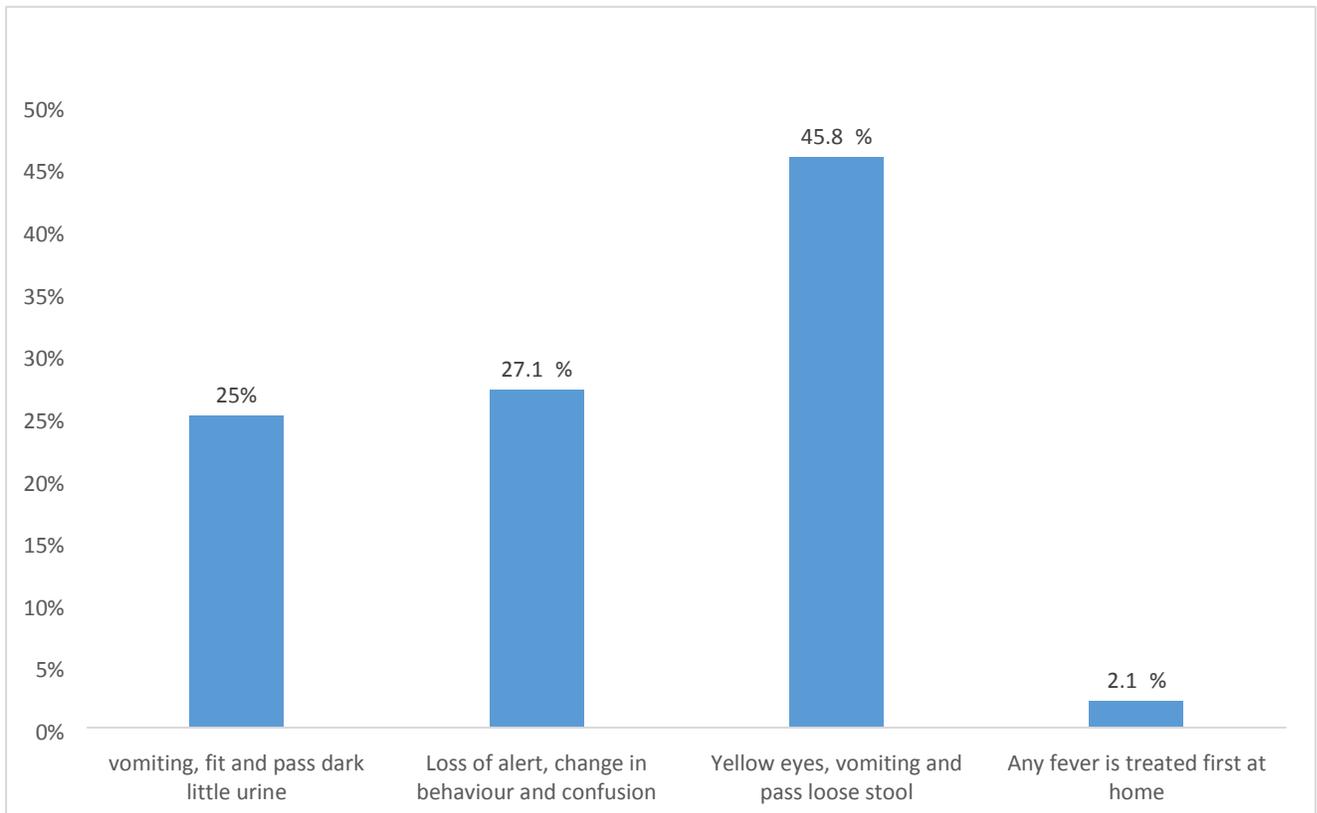


*Figure 21: The intervals of indoor residual spray of households*

For those who had their houses sprayed, they were asked the last time this was done to determine the most recent interval. Figure 19 above shows that 48 % of the respondents had their houses sprayed less than six months leading up to this study, 20.1 % had their houses sprayed 7-12 months preceding this study and 32 %t reported that their houses had been sprayed more than 12 months preceding this study.

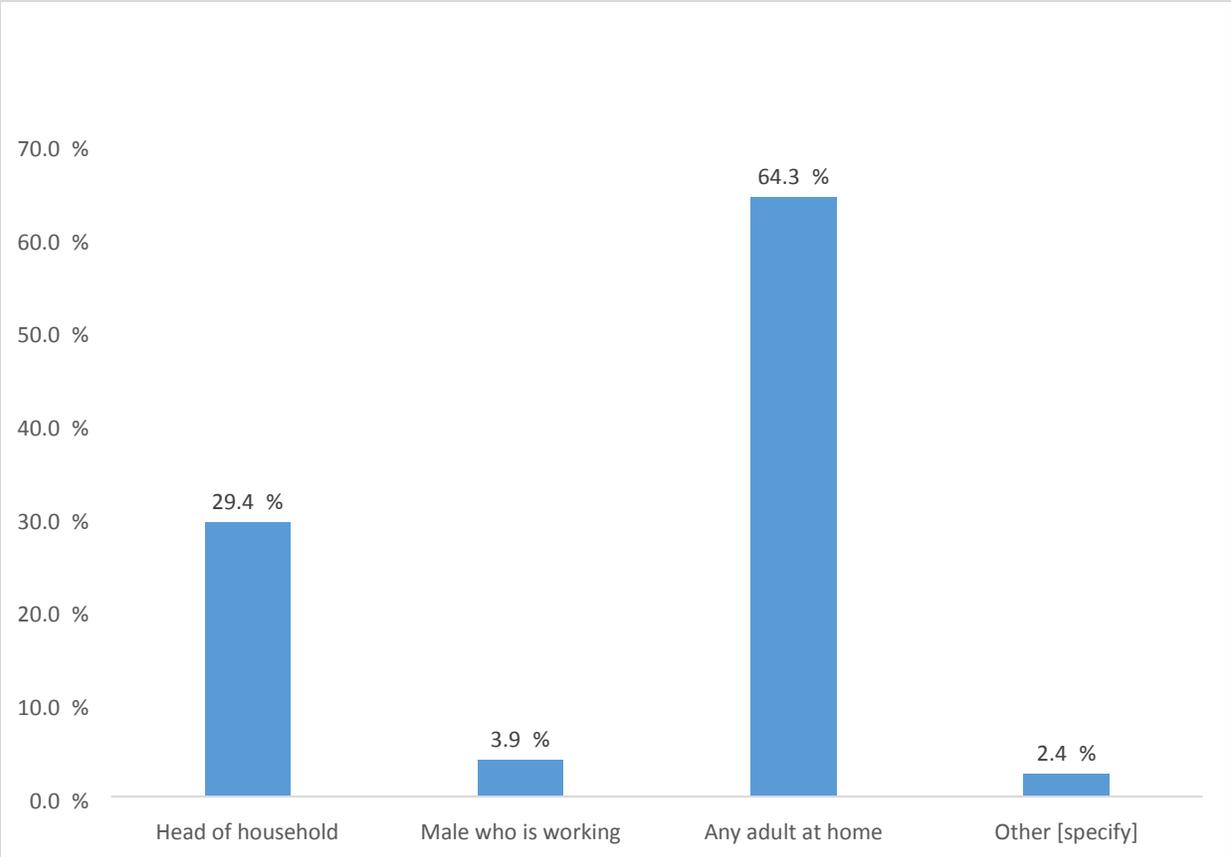
#### **4.3.5 Knowledge of Malaria Symptoms and their Severity**

Respondents were asked to state whether any of their family members had a fever in the twelve months preceding this study. Finding shows that 56.6 % of the respondents did not have a family member who had a fever in the past 12 months. The remaining 43.4 % mentioned that their family members had suffered a fever in the 12 months leading up to this study.



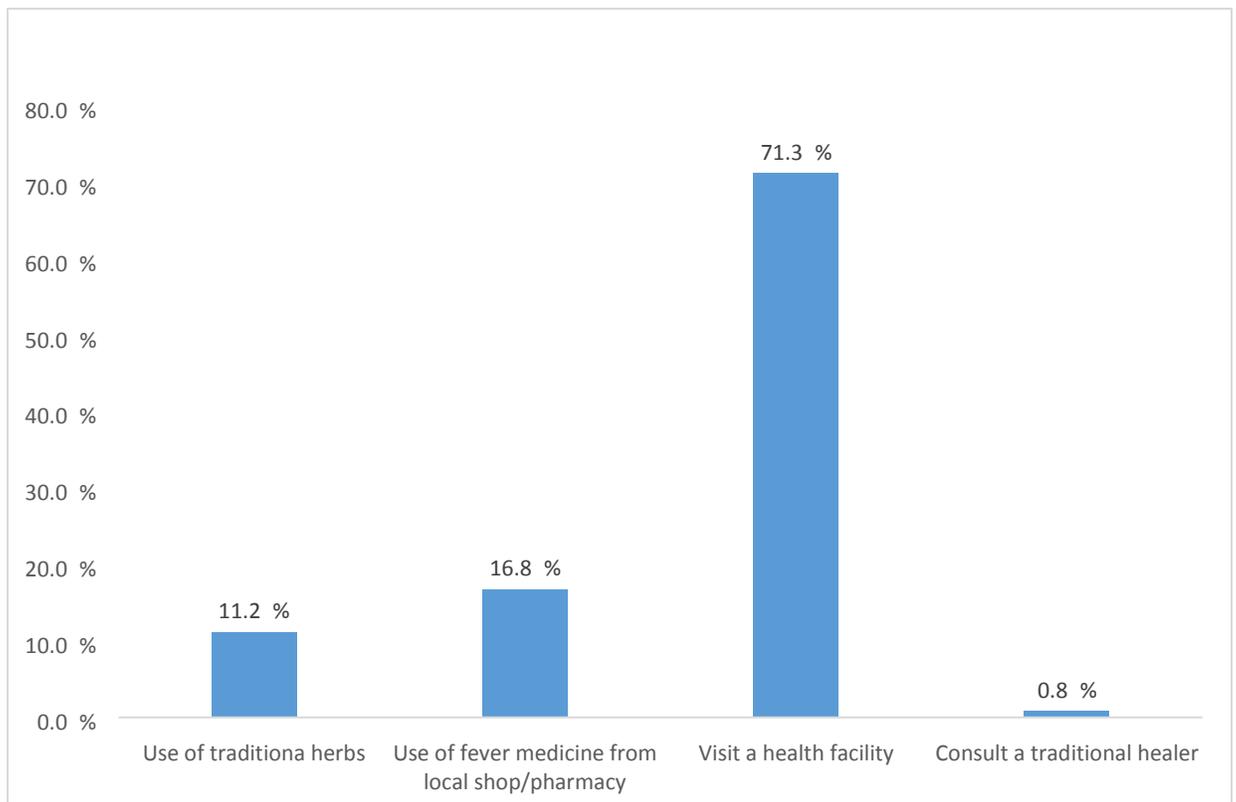
*Figure 22: Perception of the severity of fever*

Respondents were asked how they perceived the severity of fever in comparison with symptoms of complicated malaria. The findings displayed in Figure 25 above reveal that 45.8 % perceived yellow eyes, vomiting and passing loose stool to be severe fever whereas 27.1 % of the respondents perceived the loss of alertness, change in behaviour and confusion to be a symptom of severe fever. In addition, 25 % of the respondents perceived vomiting, fits and pass dark little urine to be symptoms of severe fever. Only 2.1 % stated that any fever is treated first at home



*Figure 23: People responsible for decision making on treatment of family members with fever*

The respondents were also asked to indicate who made decisions for the treatment of a family member who had fever. Figure 26 above shows that 64.3 % of the respondents had any adult at home decide, while 29.4 % stated that the head of the household made that decision. Only 3.9 % stated that a male who was working made the decision, while 2.4 % stated other decision making lines.



*Figure 24: Treatment of fever in the community*

Respondents stated that they use various means to treat fever. Figure 22 above shows that 71.3 percent visited a health facility, 16.8 percent found medication from a local shop or pharmacy while 11.2 percent used traditional herbs. Only 0.8 percent reported consulting a traditional healer for the treatment of fever.

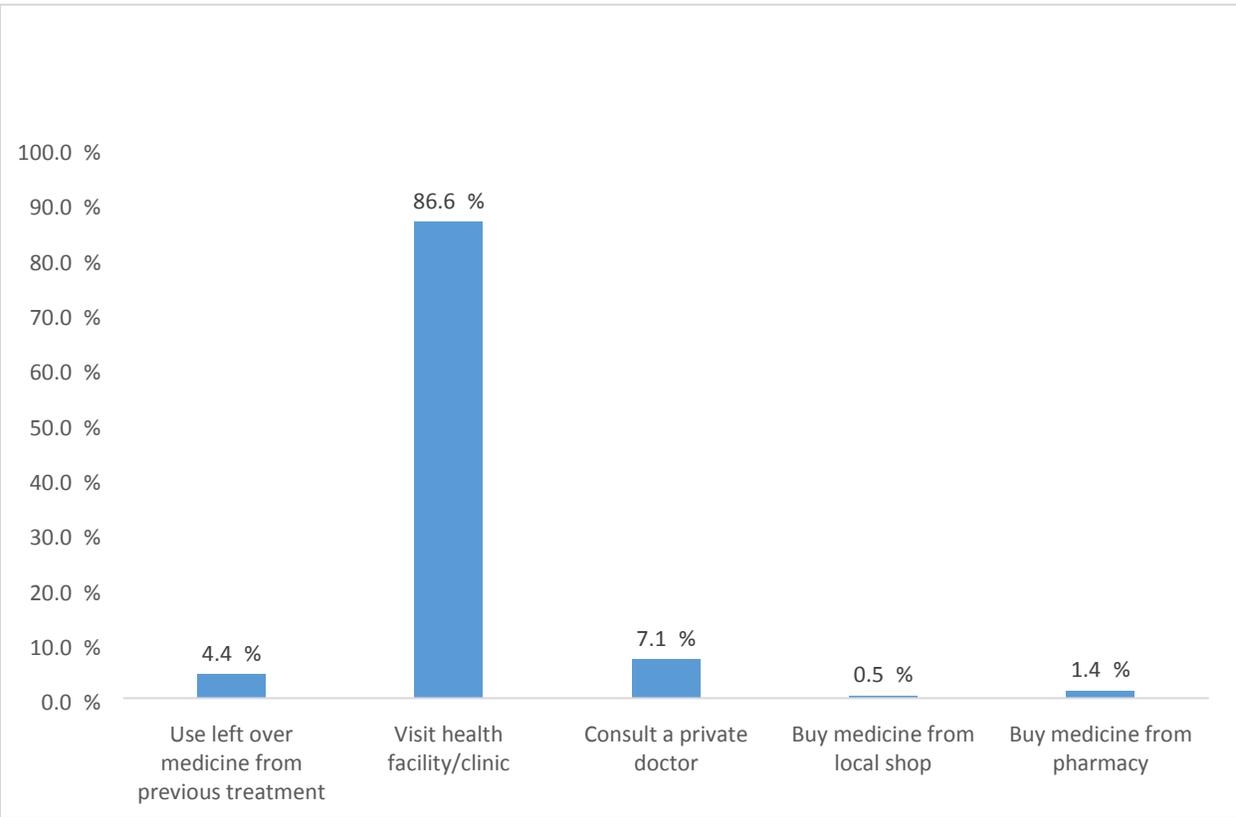
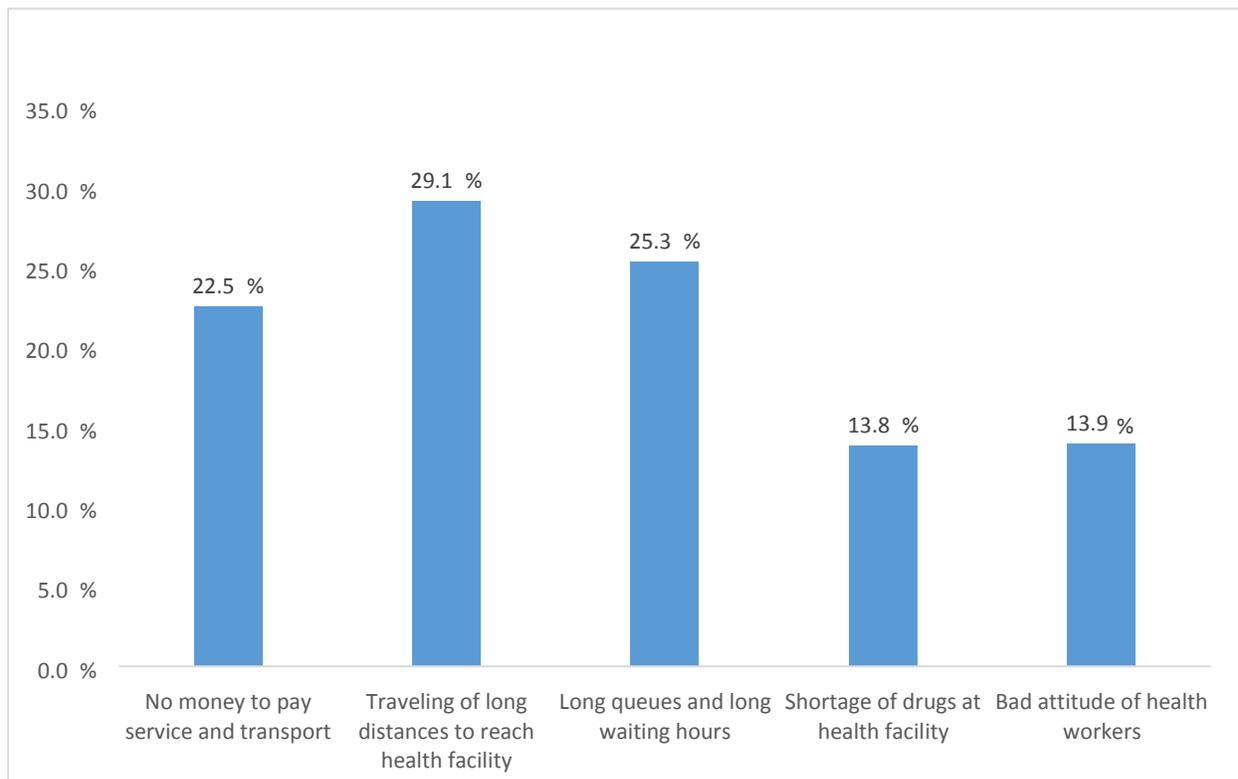


Figure 25: Alternative done if no improvement in fever

The treatment of fever using the methods above could heal it or not. In cases where fever could not be healed, respondents were asked to indicate what they do should there be no improvement in the patients they treat. Figure 28 above reveals that the majority, 86.6 % of the respondents indicated that they visit a health facility or clinic; 7.1 % indicated that they consult a private doctor; 4.4 % use leftover medicine from the previous treatment; 1.4 % buy medicine from the pharmacy and 0.5 % buy medicine from local shops. None of the respondents mentioned the use of herbs or consulting herbalists or traditional healers.

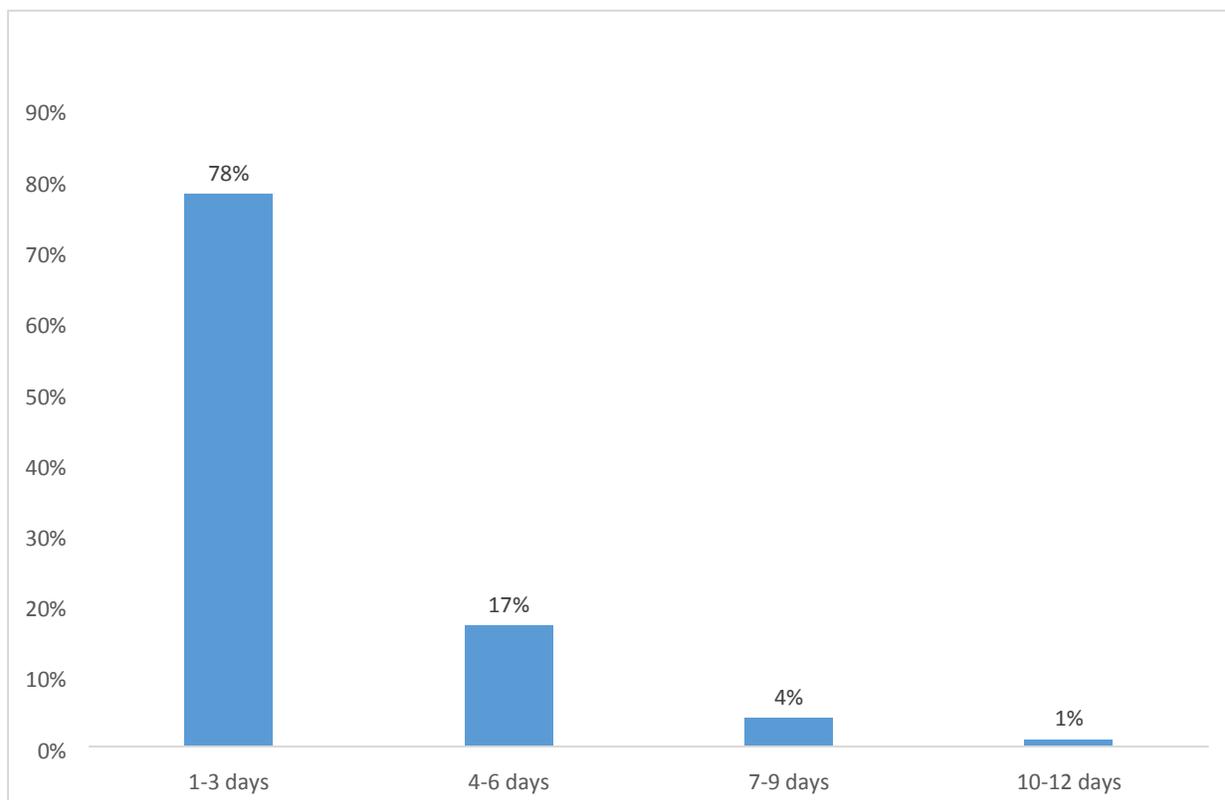
### 4.3.6 Barriers to Seeking Treatment for Malaria

Result shows that 48 % of the respondents experienced problems in seeking treatment on time compared to 52 % who did not experience any problems.



*Figure 26: Problems experienced in seeking treatment*

Those who stated that they experienced problems in seeking treatment specified a variety of problems which are shown in Figure 26 above. Here, 29.1 % indicated travelling long distances to a health facility as a challenge; 25.3 % indicated long queues and waiting hours were an obstacle; 22.5 % stated no money to pay for the service and transport as a problem; 13.9 % stated bad attitudes of health workers as a barrier and 13.8 % indicated shortage of drugs at health facilities as a hindrance to seeking treatment of fevers among family members.

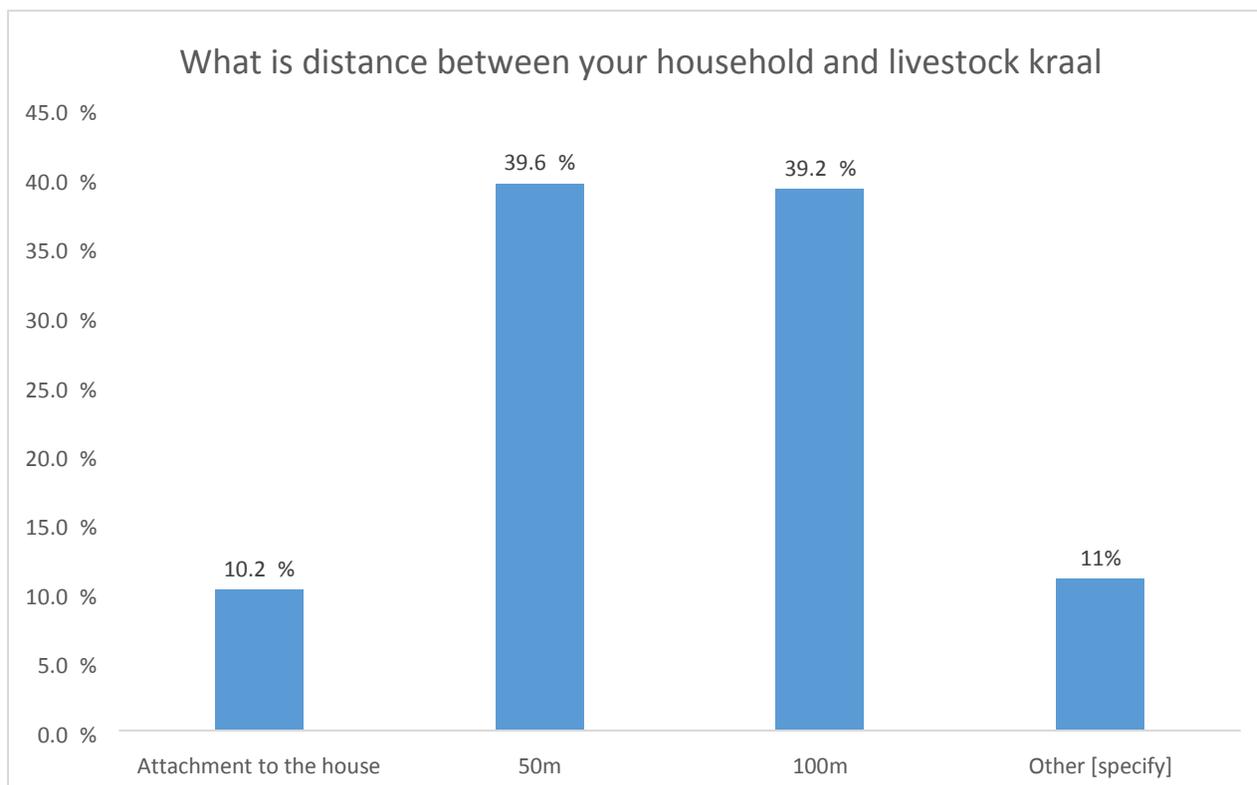


*Figure 27: The meaning of timely treatment*

Respondents expressed their knowledge about on time treatment and access to health facilities as indicated in Figure 25 above. The majority, 78 %, indicated that if the patient was presented to the health facility in 1-3 days that was timely treatment, while 17 % indicated timely treatment to be when a patient is presented to the health facility within 4-6 days. In addition, 4 %t indicated that if a patient is presented to the health facility within 7-9 days that will be timely treatment. Only 1 % of the respondents indicated that a patient presented to a health facility within10-12 days will receive timely treatment.

#### **4.3.7 The Social Environment and Malaria Prevention**

As evidence from report, 73.5 % of the respondents indicated that they have livestock around their households, while 26.5 % did not have any..



*Figure 28: Distance between household and the livestock kraal*

The distances between the households and the livestock kraals varied from respondent to respondent as can be seen in Figure 33 above

The majority of the respondents, 39.6 %, had the kraal at 50 metres while 39.2 % had the kraal at 100 metres away from the household. Another 10.2 % had the kraal attached to the house, whereas 11 % had the kraal at other distances. These distances were generally longer than 100 metres.

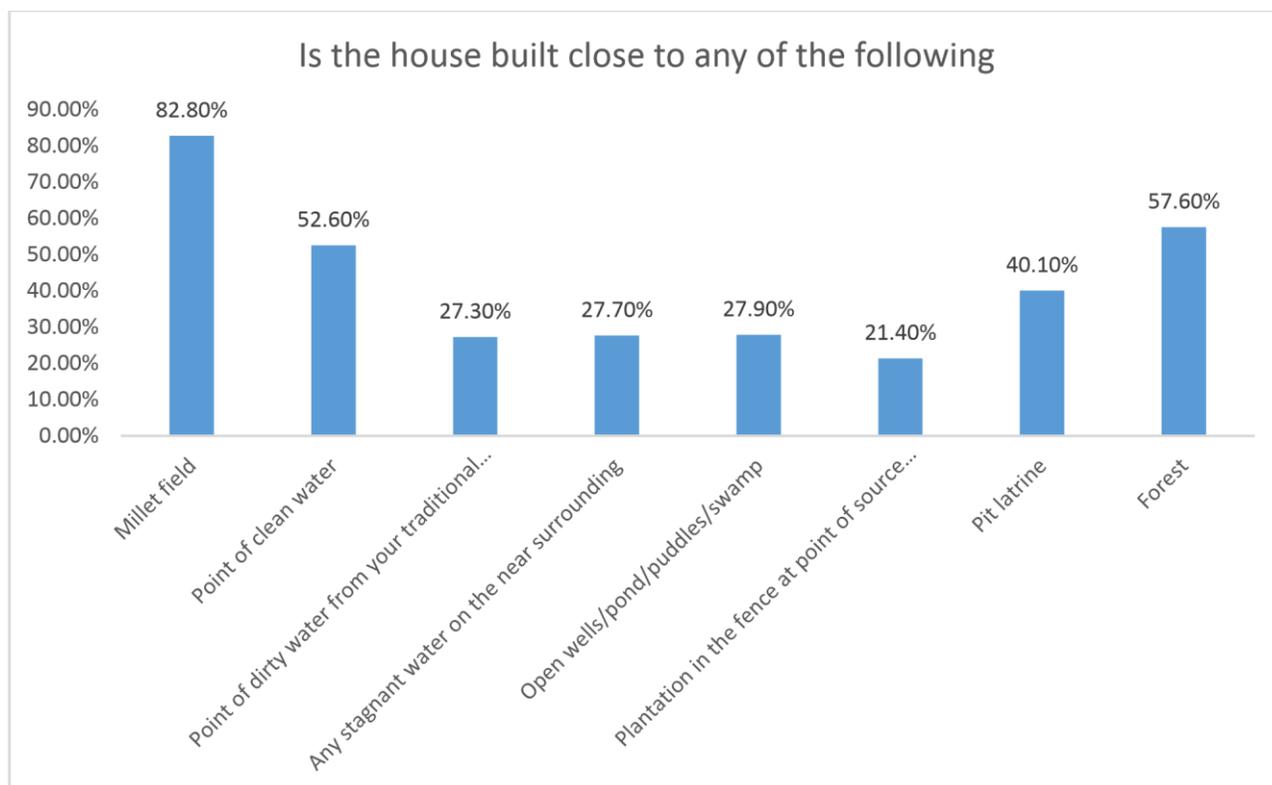


Figure 29: Proximity of household to key points of potential malaria transmission

The majority of the households, 82.8 %, reported that their houses were built close to a millet field; 57.6 % reported that their houses were built near a forest; 52.6 % reported that their houses were built close to a point of clean water; while 40.1 % reported that their houses were built near a pit latrine. Respondents who reported their houses to be built near a point of dirty water were 27.3 % and 27.7 % had their houses built near stagnant water points. In addition, 27.9 % reported to have their houses built near open wells or swamps and 21.4 % reported that their houses were built near plantations.

#### **4.4 Discussion of narrative results from Qualitative Study**

##### **4.4.1 Perceptions of Malaria Prevention Practices – Phase 1**

Data gathered from in-depth interviews and focus group discussions were grouped into themes and sub-themes during data analysis. Table 4.1 below shows these themes and sub-themes.

Table 8: Themes and subthemes generated from qualitative data

Themes	Sub-themes	Categories
<p>Theme 1:Participants perceived traditional and cultural methods of Malaria prevention are widely available but not applied.</p>	<p>1.1 Feeling of helpless on using traditional practices.</p> <p>1.2 Lack of knowledge on the effectiveness of traditional practices among HEWs There are many herbs used to prevent mosquito bites. We also use to burn dry marula fruit skin.</p> <p>Cattle and donkey dung and herb with small thorns(“eingamwe”), they all are used to producing smoke.</p> <p>Most people in community use to burn tumble weed and bitter bush before they sleep. The most used one is tumble- weed.</p>	<ul style="list-style-type: none"> <li>• Undermining socio cultural and imposition of biomedical prevention.</li> <li>• Discrimination of traditional practices.</li> <li>• The use of traditional herbs help to repel mosquitoes</li> <li>• Lack of research evidence based to prove effectiveness of the traditional plants and herbs.</li> </ul>

	<p>These herbs and plants has been used by our forefathers successful.</p> <p>1.3 Tumble weed is widely referenced as a herb for Malaria prevention</p>	<ul style="list-style-type: none"> <li>• Tumble weeds are effective but they are only available during season.</li>   <li>• This herb (tumble weed) is popular in our culture.</li> <li>• Tumble weed commonly used when is fresh and wet.</li>   <li>•</li> </ul>
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	<p>1.4 Lack of experience on indigenous knowledge on malaria traditional practices among HEWs</p>	<ul style="list-style-type: none"><li>• Cultural practices were used successful before the modern practices in Malaria prevention.</li><li>• Our forefathers were using the indigenous knowledge, inherited from one generation and pass on to the next generation by word of mouth.</li><li>• There was no written information but the elders teach their sibling during socializing at evening while sitting around the fire.</li></ul>
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<p>Theme 2:Participants perceived that Malaria is a seasonal disease and so are the traditional herbs or medicines.</p>	<p>2.1 People experience Malaria at its peak during summer.</p> <p>2.2 Lack of knowledge how to preserve tumble weed after rain season</p> <p>2.3 Plants and herbs used to prevent and control Malaria transmission is not available in some places.</p>	<ul style="list-style-type: none"> <li>• Malaria is seasonal, occurring during rainy season.</li> <li>• Dry form of tumble weed produce weak scent and last for short period.</li> <li>• Plants and herbs are not in some areas.</li> </ul>
<p>Theme 3:Particapants perceived that their economic Status influences their capabilities to manage Malaria at community.</p>	<p>3.1 Lack of money.</p> <p>Lack of motivation makes traditional approaches equally ineffective.</p> <p>Adult s have no enough mone for purchase bed nets for whole family, they purchase only for owner use.</p> <p>Lack of courage to do income generating activities .</p>	<ul style="list-style-type: none"> <li>• Limited access to treatment due to poor infrastructure</li> <li>• Health facilities are built far from community members.</li> <li>• Traveling long distances limits access to treatment.</li> <li>• Lack of skill training on improve income status</li> </ul>

	<p>The process of producing marula oil is time consuming and require a lot of energy.</p> <p>It will waste my time.</p>	<ul style="list-style-type: none"> <li>• Believe that money generated from marula oil will not enough to buy nets for every sleeping room.</li> </ul>
	<p>3.2 Lack of employment.</p>	<ul style="list-style-type: none"> <li>• Feeling of inadequate .of money.</li> <li>• No means of income</li> <li>• Lack of community project for training on income generating activities.</li> <li>• Bed nets are expensive</li> <li>• Feeling poor and no any other means to afford other modern methods</li> </ul>
<p>Theme 4:Participants perceived that there are barriers to access Malaria care</p>	<p>4.1 Traveling long distances.</p> <p>4.2 Long waiting period.</p> <p>4.3 Lack of facilities located within walking distance</p>	<ul style="list-style-type: none"> <li>• Poor infrastructure with reference to health facilities, roads, technology,</li> <li>• Lack of access distance to health services.</li> </ul>

		<ul style="list-style-type: none"> <li>• Poor services delivery at health facilities deters people and promote home based healing practices in secrecy.</li> <li>• Hews do not cover all households.</li> </ul>
Theme 5:Participants perceived that mosquito nets generally available but not used	<p>5.1 Bed nets kept unopened waiting for special events.</p> <p>5.2 Net are kept unopened waited for adults who work far from home.</p> <p>5.3 Young children and adolescent are sleeping without any protection.</p>	<ul style="list-style-type: none"> <li>• Net is connected to assets and birth of new born babies.</li> <li>• Fear of itching and discomfort.</li> <li>• Lack of ownership and difficult to single out why malaria is seen as a challenge.</li> <li>• Children have little claim on expensive protective goods such as bed nets.</li> <li>• Children from 5 to 17 years of age have low stats in family hierarchy.</li> </ul>

	<p>Bed nets are not perceived as priority.</p> <p>Dirty bed nets are kept aside.</p> <p>Bed nets not physically hanged.</p> <p>Resources were used for human food.</p> <p>Cannot afford both nets and food for people and domestic animals.</p> <p>There is drought for human and animals.</p>	<ul style="list-style-type: none"> <li>• Bed nets are difficult to use in traditional sleeping huts.</li> <li>• Bed nets are preventing proper air entrance and make person to feel hot.</li> <li>• People are having unmet need rather than bed nets.</li> <li>• Better buying food rather than a bed nets.</li> <li>• There is drought and hunger for human and animals, available money was used in buying food.</li> </ul>
<p>Theme 6: participants Perceive Malaria as a disease of others who</p>	<p>6.1 Malaria perceived as a disease of women and children.</p>	<ul style="list-style-type: none"> <li>• Men associated bed nets with vulnerability and health programmes for mother and children.</li> </ul>

<p>are targeted for prevention and control programmes.</p>	<p>Lack of interest among males defer by lack of initial involvement in Malaria preventive activities.</p>	<ul style="list-style-type: none"> <li>• .</li> <li>• Lack of active participation and ownership of malaria preventative activities among males</li> <li>• Malaria is perceived as disease for other by males.</li> </ul>
	<p>6.2 People have feeling of uncertain about existence of malaria.</p>	<ul style="list-style-type: none"> <li>• Males spent longer period at social gatherings and shebeen without using protective measures.</li> <li>• Males travel to cattle posts and attend to domestic animals in the field at dawn for drinking water supply.</li> <li>• Females travel far to fetch water and queue up at dawn, before the sun become to strong.</li> </ul>

		<ul style="list-style-type: none"> <li>• Traditional preparing of supper at dusk and outside cooking is not associate with mosquito bites and exposure to malaria transmission</li> </ul>
	6.3 Preference of health facilities for treatment rather than for seeking information on malaria prevention.	<ul style="list-style-type: none"> <li>• Using of traditional plants and herbs is outdated.</li> <li>• Waiting for HEWs to bring us bed nets from the clinics.</li> </ul>
	6.4 People choices for modern practices use despite lack of money	<ul style="list-style-type: none"> <li>• We have been waiting for free bed net distribution.</li> <li>• It is now three yes without receiving bed nets.</li> <li>• All the bed nets are torn, but there is no money to buy news</li> </ul>

	<p>6.5 The dependency created by programme for free bed nets distribution hinder the use of traditional practices for Malaria prevention.</p>	<ul style="list-style-type: none"> <li>• Waiting for free net from the government.</li> <li>• Do not see the need to use herbs and others traditional practices</li> <li>• The names has been submitted after years for free bed nets.</li> <li>• Sometimes if mosquitoes are abundant we burn tradition herbs and plants.</li> </ul>

The next step is to discuss findings and at the same time to perform literature control on the themes and subthemes in order to give meaning to study findings. Because of the nature of the study, discussion of results follows the strategies of relating, comparing and validating of data(21).

The following paragraphs are for the full detailed presentation of the themes and sub themes.

The opinions of the respondents on traditional and cultural methods of Malaria prevention show different expressions. The expressed ideas are divided in two groups. There are respondents who indicated that they do not value the traditional practices while on the other hand there are respondents who indicated appreciation and respect for the use of traditional methods in Malaria prevention. This was indicated by the following quotes:

***Some of the positive value toward traditional practices use in malaria prevention***

*“I use etwelakuku (tumble-weed), put it in the clay pot container with hot coal to burn and produce smoke.”*

*“This herb is popular in our culture and is commonly used when is fresh and wet.”*

*“I prepare various containers, depending on the number of sleeping huts or rooms.”*

*Except the burning process, I inserted fresh branches of the tumble weed in the roof and place some branches between the roof and top of the wall to prevent mosquitoes from entering while we are sleeping. This way the herb protecting us for longer period”.*

*There are many herbs used to prevent mosquito bites but such herbs are not available in some places, an example is eingamwe.”*

“I use traditional herbs, because these herb and plants has been used by our forefathers successful”.

#### **4 .4.1.1 Traditional and Cultural Methods of Malaria Prevention Widely Available but not Applied.**

The theme is confirmed by the following quotes from participants during interviews:

*“There are many cultural practices used in generating smoke, we have plenty of these practices and herbs”.*

*“We also use to burn dry marula fruit skin”.*

*“Cattle and donkey dung and herb with small thorns, they all are used to producing smoke”.*

*“Most people in our community use to burn tumble weed and bitter bush before they sleep.”*

*“It normally takes 30 minutes”*

*“Yes I support the previous speaker, but when there is a lot of mosquitoes, time can be extended up to 2hours.”*

*“We prevent malaria by use tumble weeds and bitter bushes, if we see that the two herbs are not enough to prevent mosquito bite, we also use small amount hot chili and bran, we mix the two items and put it in container to produce smoke inside the sleeping rooms”.*

*“I also use to burn bitter bushes in the same way as tumble weed, however the bitter bush is a shrub.”*

*"The bitter bush produce very strong smell when burnt." Its branches are also inserted in roof and placed between the roof and the wall of the sleeping hut."*

*"Cultural practices were used successful before the modern practices in Malaria prevention. Our forefathers were using the indigenous knowledge, inherited from one generation and pass on to the next generation by word of mouth. "There was no written information but the elders teach their sibling during socializing at evening while sitting around the fire."*

Sleeping under a treated mosquito net is one of the effective ways of preventing malaria.

It was revealed that some messaging discouraged the use of traditional methods for the prevention of malaria.

*"We were discouraged from using traditional methods by some HEWs".*

Available literature agrees with the view that the autonomy of community members is not considered and imposing of ideas is due to lack of understanding, which is a sign of cultural shock(17).

Biomedical practices advocate for the use of bed nets as a universal prevention method for malaria(61) however(41) disagrees, stating that the magnitude of the problem of malaria is caused by human behaviour and socio structures, yet socio cultural practices on prevention and control of malaria at community level among nomadic tribes where the disease is endemic remain on the blind eye and kept neglected. It is a known fact that Malaria is influenced by many factors, but its prevention and control is dominated by donor funded strategies(61).

*“Culturally the fire was also used inside the sleeping huts, and the purpose to set fire was serving multiple purposes, such as keeping the room warm, producing smoke that keep mosquitoes away and produce light.”*

*“I burn tumble-weed and bitter bushes to chase mosquitoes away every evening between 5 and 7 toward the evening”.*

*“I found the time suitable to prevent the mosquito entrance”.*

*“The timing is also good to keep the scent in the room throughout the night and serve as a repellent”.*

*“Malaria is prevented by using a traditional herbs. The most used one is tumble- weed”.*

*“The other herb is “Eingamwe”.*

*“The rest are shrubs, such as bitter bush, blue bush and a green leaves plant with white and pink flowers.”*



*Figure 30: Plant with white and pink flowers (source: Researcher's own Picture)*



*Figure 31: Plant with white flowers used as repellent (source: Researcher's own Picture)*

*“Malaria is prevented with traditional herbs and plants”. “The most used one is tumble-weed”.  
“The other herb is “Eingamwe”.*



*Figure 32: The bitter bush plant (source: Researcher's own Picture)*

*“The example of herbs and plants are such as tumble-weed, bitter bush, marula fruit skin”.*

*“They also use leaves of blue bush and bran”*

*“I also use marula fruit outer covers, animal dung from domestic animals and wild animal such as elephants”. “The elephant dung are best repellent, the only problem is that these animals are kept in protect zoo”.*

*“The people who use nets are acquiring it from the Ministry of Health and Social Services (MoHSS) or receiving it free from Non-Governmental Organizations like Red Cross and Trans Kunene Initiative Malaria Project”.*

*“Some villages received indoor residual spraying on yearly basis from the team send by the Ministry of Health and Social Services”.*

*“We only use the hospital”.*

*“I also use hospital services”.*

*“Now in the developed modern era we receive assistance of nets, from Health Extension Workers”*

*“I use mosquito nets but they are very old now”.*

Many respondents indicated that a bed net was not a priority and it is connected to the following quotes:

*“Me to buy net while my household has no food, I rather buy food and school needs for my children”*

*“We have no sufficient money, money available we spent on buying food as you see there is drought, money is spent of human and animal food, nothing left for nets”*

*“I cannot afford to generate income for nets”*

*“We use nets and doom”. “We are in modern developed world”.*

*“In the past were given nets free of charge from Government free distributed from MoHSS and some NGO such as Red Cross, but know there is no more this offer”.*

*“It come to an end”.*

*“Doom sprays has just emerged recently. We are now addicted by the doom spray and as a result we are no more using our cultural methods”.*

*“I don’t see the need to use herbs and others traditional practices, But*

*“I also bought mosquito repellent coils sometimes.”*

*“But I need assistance with nets.”*

*“Nowadays we have nets distributed free of charge from the MoHSS”.*

*“Some community members are resistant to change and they believe in local available practices”.*

**Feeling of helplessness, undermining and cultural imposition of biomedical prevention:**

*“I am informed that mosquito nets are the best method in prevent Malaria transmission and it protect us from mosquito bites.*

*“Nets are scarce, I have been three years without nets”*

*“But I am hoping to receive nets from our community nurse when free distribution start”*

*“Lack of knowledge is high among rural communities”.*

*“Discrimination and undermining the use of traditional practices”.*

**4.4.1. 2 Malaria is a seasonal disease and so are the Traditional Herbs or Medicines.**

The participants indicated the following during the interview process:

*“It grow during rain season, but it can also use dry, however when it is used in its dry form the scent is not strong enough”.*

*“Except shrubs, tumble weed and all the herbs grow during summer when it is rainy season”.*

*“I have never seen a person suffering from malaria at this time of the year. Malaria is not common during spring; malaria is only common during winter and summer time”.*

*“I don’t see mosquitoes or experience malaria in this hot weather, you will not find tumble weed this time of the year.*

*“I only see mosquitoes during summer and heard Malaria at the same season”.*

*“I can say is bitter bushes and partly tumble weeds, but the problem with tumble weeds is that it is only available during rainy season”*

*“Not every time, it only grow during rainy season”.*

*“Not every time of the year, tumble weed can only grow during rainy season”*

*“I can say yes for marula fruit skin and tumble-weed, these are common especially during rainy season”.*

*“We use also bitter bushes because etwelakuku is only available during rainy season. Sometimes we mix bitter bushes and tumble weed to make the smoke scent very strong to repel mosquito”.*

*“We also use marula dry skin. Let them dry and put it in the container to produce smoke and we just use it as first help”.*

*“I can say yes for tumble weed, this herb is readily available especially during rainy season”.*

*“I use bitter bushes because it is present throughout the year”.*

*I use the mixture of bran and chili when mosquitoes are abundant. The use of cultural methods is determined by magnitude of mosquitoes.*

*“No we have various plants depending on your location”.*

#### **4.4.1.3 Economic status**

The economic status of the participants cannot accord them chance to own mosquito nets as revealed by the following direct quotes:

*“I have no resources to buy lotion repellents. I have no enough money to buy dooms coils, sprays and nets. I am unemployed and has no means of income. I am poor and not able to afford any of those modern methods”.*

*“Poverty and lack of income”*

*“Nets are not affordable. I wish if I can even buy from Chinese local shop, but due to poverty I am not able to buy nets for my household”.*

*“There is lack of mosquito nets and available nets are old”.*

*“nets are most of the time out of stock and when nets are available, they are not enough for everybody.*

*“For me to use tumble-weed and bitter bush shrubs, I noticed that there are lot of mosquitoes in sleeping rooms. I cannot afford to let children sleep in rooms with a lot of mosquitoes. I burn tumble-weed and bitter bush to chase mosquitoes away and to kill these insects.”*

*“The good thing on traditional practices, the herbs and plants are local available and cost no money”*

*“What force us to use traditional herbs, is mosquito bite in the evening. In the past there was no other methods available. We don't have money to use modern material”.*

*“I am poor, not able to afford a net. I only acquire net if there is free distribution offered from MoHSS and NGO “.*

*“I have no money. I do not know how much the price of one net is”.*

*“No, I am unemployed and has no other source of income and buying nets is burden to me”.*

*“Mh... I do not have any income. I am poor I have no money. If I am going to buy net I am only able to buy a net for myself but I will not able to buy for each member. I have 12 household members and we sleep in different hut, depending on our age. Sometimes a net can cater for 3or two or one person per net 4”.*

*“As it was said earlier, the first point is poverty, many people have no source of income and they are unemployed”.*

“This people are very poor and many lack money to go to town and buy nets”.

I use the elephant dung because it is best than all other traditional methods. The problem is money and the elephant dung is very scarce.

The majority of respondents were unemployed (62.6 %). The region was also rated as one of the poorest(30). The finding reveals that the high rate of unemployment in the rural community results in poverty at household levels. Poverty revealed by this study is also experienced in other regions in Namibia(30). Unemployment causes poverty and this might be one of the cardinal reasons for the persistence of Malaria in Ohangwena region. Respondents could not afford to buy mosquito nets for example:

*“I only buy it [mosquito net] if a Good Samaritan gives me money”. “ I have no resources to buy repellents. “I have no money to buy doom or coils, sprays and nets”. “I am unemployed and have no means of income”. “I am poor and not able to afford any of those”.*

Several authors in other parts of the world indicated that malaria is the disease of the poor; therefore they indicated strongly that there is a relationship between Malaria disease and poverty(41,65).

I only buy elephant dung if a Good Samaritan give me money”.

*“We use smoke inside the sleeping hut”.*

*“We take bitter bush and tumble bush to produce smoke inside the rooms. The smoke smell will remain in the room to keep it free from mosquito entrance. The smoke keep the mosquitoes away and when we enter the sleeping rooms we are not finding any single mosquito”.*

*“We use a old traditional clay pot container, put bitter bushes and hot coal to produce smoke”.*

*“This smoke act as a repellent to repel mosquitoes. This is only help to control and prevent malaria”.*

*“We also use tumble weed, burn it in the clay pot containers to produce a smoke to repel mosquito.*

*It is also used outside open space and is effective”.*

*“It used indoor and helps you to sleep peaceful”.*

#### **4.4.1.4 Barriers of access to care**

The participants verbalised the following information as barriers to reach health care in rural areas:

*“Besides poverty, they travel long distances to reach area where better services are available”.*

*“These people has limited means of transport, many lack money to go to town and buy nets”.*

*“They travel long distances to reach area where better services are available”.*

*“Long distances is also a challenges. Community members travel long distances to reach health facilities. The long distances between community and health facilities prevent people to come for help earlier. Even we Health Extension Workers experience problem with referral of cases to health facilities”.*

One challenge is long distance to health facilities and retail shops where nets are available.

Barriers associated to social and economic status:

*“Poverty is a problem and many people here in our villages are poor and unemployed”.*

*“I know, lack of resources and high level of poverty among rural communities delay the process of roll out malaria in the villages”.*

*“Lack of money and non-availability of shops in villages make it difficult to access this preventative methods”.*

*“As we indicated earlier on, people are poor; they have no source of income to buy better protective items”.*

*“Lack of money and long distance between village and town make it difficult to buy repellents”.*

*“Some of local herbs, plants and materials are scarce. For instance here we do not have elephant dung available for communities use, no marula tree and water is big challenge make it difficult for people to make home garden to produce chili”.*

*“Even tumble-weed is scarce during winter and spring and not available because is not a rainy season”.*

*“Bitter bush and blue bush are available throughout the year but only available in some villages”.*

*“In addition to that, due to drought bitter bushes are eaten by animal. People and animal are both competing for bitter bushes to meet their needs”.*

*“Tumble weed is very rare in many villages at winter”*

*Bitter bushes are not growing in some villages. They are only available to some communities.*

*Barriers associated to structural factors”.*

*“There are many barriers, such as lack of resources. The local herbs, for example  
tumble-weed is only availability during rain time”.*

*“Lack of technical support and knowledge on how to come up with a garden as well as lack of  
information and exposure”.*

*“Poverty is the main cause, non-availability of free mosquito net from the government and  
donors”.*

. The findings from the interviews concur with the assertion that cultural competence is a requirement for holistic and folk care(17,37).

*“...because of fear we stick to the advice we receive from health workers. We are advised  
to keep our doors and windows closed”. “But our traditional sleeping huts have no proper  
doors”.*

Due to inadequate information and a lack of knowledge of technical care and handling of the net, respondents indicated that they are uncomfortable with the use of bed nets. This presents a challenge related to low risk perception. Similar factors were identified in the study done by(58).

*“People sleep in traditional hut with small window without mesh to prevent entrance of mosquitoes. Many a time we find out that sleeping room made from corrugated zinc has no windows. But when we give health education of close doors and windows, community members are just agree.”*

Achieving a holistic approach in fighting malaria requires that the HEWs are prepared in all aspects of culture. Proper knowledge and comprehension of culture protects the provider and recipient of care equally. What is needed is cultural preservation, maintenance, accommodation, negotiation skills patterning and restructuring(17).

*“The people are unemployed and cannot afford to buy mosquito net, or what to call that, that thing people applying on the skin as cream, mosquito repellent”.*

*“The shops are very far and people have no money to buy and travel to towns”.*

*“The dependency on free net from government and donor is another problem”.*

*“The worst part is that , some of the people are undermining the traditional practices and is also the same people who use nets for other purposes like shading , drying and cover their millet as well as building chicken cage and covering their traditional bath room, just to mention a few”.*

*“Another barrier is the way sleeping rooms are designed, built with wide space and too open gap between the roof and wall. Sometimes there is also a big gap between door and door frame it.*

*The other problem I am worried about is the use of empty bottles as window frame materials”.*

*“These materials are used by mosquitos as a hiding sites”. some of local herbs, plants and materials are scarce”. “For instance here we do not have elephant dung available for community members’ use, and water to make home garden to produce chili”.*

*“Water is also expensive and clean piped water is recommended for human and animal consumption only due to scarcity and drought.*

*“Another challenge is affordability to pay water bill and the process of water distribution is very slow to reach rural communities.*

### **Barrier linked to limited access to information**

*“Some community member has no information about other methods such as mosquito repellent”.*

The level of education is associated with health and wealth because the level of literacy facilitates the comprehension of awareness messages about malaria. The level of education plays a role in Malaria prevention and control.. This equally explains the low levels of employment. There is a need to strengthen the traditional practices in malaria prevention. However, a study of this nature is limited despite the fact that biomedical strategies have their own challenges in terms of affordability, sustainability, acceptability, accessibility, equity and coverage. Studies argue that biomedical practices are dominating the fight against malaria(39,40). Another argument is that there are limited scientific studies conducted in Africa on socio cultural practices to prevent and

control malaria, and there is little publication done on traditional practices relating to malaria prevention and treatment(39).There is no harmony and partnership between social science publications and studies on socio cultural as well as traditional practices(39). However, respondents argued that changing and adopting the biomedical strategies in place will not come easy:

*Some community members are resistant to change and they believe in locally available practices. Lack of knowledge is high among rural communities*

#### **Barrier linked to border crossing and traveling**

*“Internal movement of community members between Namibia and Angola is a big challenge”.*

*“There is no control on crossing border between Namibia and Angola”.*

*“People use to migrate between Namibia and Angola to visit their family members. Like us we very close to the border and people need not to have passport to enter interior of the two neighboring countries”.*

*Barrier linked to limited infrastructure and slow development*

*“We are left behind in reference to development”.*

#### **4.4.1.5 Mosquito nets generally available but not used**

Mosquito nets are generally respected as the best method in prevention of Malaria but they are available to community members through free donations, as only few community members can

afford to buy them. Some donated nets are not used by all the household members as it indicated in the next paragraph.

*“We are 12 and not all of us is having net in our sleeping room, and we share net depends on our age”.*

*“I am humbly requesting the government to give us additional nets”.*

*“Each one in the house own a net. We also use long sleeves clothes*

*“We try to go to bed early in bed. We are not saying we prevent malaria 100% but we are trying”.*

*We also cook early to prevent mosquito bite”.*

*“We know that mosquito are wise insect, they try to come early before we go to bed. At that time we all wear long sleeves clothes”.*

*“Besides poverty, they travel long distances to reach area where better services are available”.*

#### **4.4.1.6 Perceptions**

There are various perceptions around the use of Malaria prevention and control and these are based on the following:

Perceptions linked to indigenous knowledge

*“We also use the elephant dung, it is the best method. It is also use elephant dung for other purposes in our traditional”.*

*“If the dung is from elephant, it is regarded as the best repellent.”*

*“For instances we use animal dung, burn it to repel mosquitoes, however, dung can be also serve other purposes such as used as a source of fuel for cooking, burning traditional clay pots.”*

*If we are outside we burn animal dung, tumble-weed, thorn bush and bitter bush”.*

*“My colleagues mentioned animal dung, the community use dung for cattle, and elephant”.*

*“The dung from our domestic animals are easy to obtain from the field, but for elephant is very rare, because elephants are protected and are kept separated from human contact”.*

*“The other cultural practice is mixing bran with chili”.*

*“Some use marula fruit skin”.*

Malaria is prevented with traditional herbs such as tumble-weed and bitter bushes.

Normally, community member use tumble-weed and bitter bushes. Sometimes they use animal dung. These materials are used as mosquito repellent. What they do in the community is to burn the herbs at sundown between six and seven but sometimes the time frame can be extended to late in the evening.

### **Perceptions linked to preference:**

*“When we are in sleeping rooms we use nets and lotions as repellent “I use nets but there is also creams and lotions”.*

*“We are in the modern world. We use doom spray, repellent lotion and we are given nets from the government”.*

### **Perceptions linked to timing duration of effectiveness, efficacy and efficiency:**

*“They normally burn the herbs during the evening time, between 6h00 and 7h00, but sometimes the time containers can stay inside the rooms until at 8h00 at night”.*

*“It normally takes 30 minutes during the evening”.*

*‘yes I agree but when there is a lot of mosquitoes time can be extended up to 2hours*

*“To add on previous speakers the time duration of the burning will also depend on the nature and type of plants used, if the plant or herb is wet, fresh or dry”.*

*The mixture of bran with hot chili is allowed to burn inside the closed sleeping room for 30 minutes to one hour”.*

*“Especially if you use wet and fresh tumble-weed it produce a strong smell that repel mosquitoes, but at the same time you can sleep comfortable without any disturbances”.*

*“The dry tumble-weed produce light smell and last for short duration. This create a chance for mosquitoes to return to the sleeping room in midnight”.*

*“Community members’ reveals that a dry tumble-weed produce a light smell and its effectiveness is not last longer”.*

*“Elephant dung and mixture of bran and chili are best traditional practices that kill mosquitoes”.*

*“On the other hand, bitter bush whether burn fresh or dry it produce a very strong smell”.*

*“The bitter bush smoke repels mosquitoes for 24-48 hours”.*

*“The problem with bitter bush smell is very much irritating”.*

**Perceptions linked to availability of local materials:**

*“As result on non-existence of plants and herbs, community members are only use what is available in their villages”.*

*“On the other hand it more visible during January to April because the people are busy cultivating millet”.*

*“This is the good time for this herb to be spotted and easily separated from other plants”.*

*“The bitter bushes are present for the whole year. The other good part with bitter bushes are abundantly available local, and it does not cost anything. You need no permission from anybody to use it, you just use it freely”.*

*“These plants and herbs are locally available and cost no money, to compare with most of modern repellent in market industry”.*

*“Most people in our community use to burn dry marula fruit skin, tumble-weed and bitter bush before they sleep.”*

**Perceptions linked to heritage:**

*“They use it because is what they find used by their forefather in the past.”*

*“I have no courage to do it. The process of producing marula oil is time consuming and require a lot of energy. It will waste my time and I know money generated from marula oil will not enough to buy nets for every sleeping rooms.”*

*“ We are many in the house”.*

*“I prefer to use fresh tumble weed, burnt it in an old clay pot container. Usually we call this container “Oshikangwa” in the vernacular language. But if I do not have enough broken clay pot, any heat resistant available containers can be used”.*

*Some information are like clean environment, keep environment free from water and close all containers of water. Close doors and windows before sundown.”*

*“I was taught by my grandmother to use etwelakuku. I put the container with etwelakuku between 5 or 5h30 to 6 . It chases all the mosquitoes. It produce smoke to chase away mosquitoes.*

*”The community members perform this activity inside the room with closed doors and windows”.*

*“They have to wait until smoke disappear and the same time mosquitoes are also run away”.*

*When we enter the room we sleep peaceful. The procedure of burning tumble herbs is daily activities.*

*“The strong smell repel these insects and keep them away”.*

### **Perceptions on risk linked to gender:**

*“Social events among the community members expose them to mosquito bite, such as men spent long hours at shebeen till late in the evening.*

*“Women in the community at home level spent long hours outside for supper preparation and primary socialization at open fire during the evening”.*

*“Some community members fetch water from far and travel during early dark hours in the morning”.*

*“Farming, collecting wood and cut wood from the forest are also performed during dusk and dawn.*

*“I prefer tumble weed, hot chili mixed with bran by burnt these materials to producing strong scent and smoke, therefore they are good in controlling mosquito bites”.*

*“They all good and effective in Malaria control because all repel and kill mosquitoes”.*

*“We also have nets, buy mosquito coils, and use lotions to apply on the skin and wearing long sleeves clothes and trousers”.*

*“We cover are body with long clothes. We also prepare our supper and go to bed early”*

*“I only use tumble weed to repel mosquitoes when we sit outside at night”*

*“Some community members are resistant to change and they believe in local available practices”.*

*“This plants and herbs are locally available and cost no money, to compare with most of modern repellent in market industry”.*

**Perceptions linked to personal protection knowledge:**

*“Community use long sleeves clothes, burn coils and apply mosquito repellents on the skin”.*

**Perceptions linked to acquired knowledge on environmental hygiene and control:**

*“Cleaning the surroundings, removing of empty bottles and tins so that they will not collect water during rain seasons”.*

*“Some close door and window before sundown.”*

**Perceptions linked to free service from government and non-governmental organization:**

*“Some villages are benefiting from the residual spray from the MoHSS spraying team started around September to November”*

In general, the majority of the households had 7-9 members as the smaller ones had 4-6 members. Bigger households had over 10 members. Most houses were constructed using wood, sticks, reeds, millet stalks, grass and thatch. In some households, cow dung and mud were used to build the houses. Very few houses had brick and cement walls and corrugated iron roofs. The majority of households used radio as a means of communication as well as cellular phones. There was very limited use of newspapers and televisions as sources of information. There were some local herbs which were used for malaria prevention including bitter bushes and the tumble weed. Respondents expressed that they used the smoke of the tumble weed as an insect repellent to deter mosquitos from entering their houses. A respondent remarked that: *“I use tumble weed, burn it to produce smoke inside the rooms.”*

Respondents also used the marula skin, other local plants like the blue bush, plants with white and cerise flowers, chili, millet bran, animal dung, as well as *eingamwe* (a shrub with little thorns and green small leaves). One of the respondents submitted the:

*I use traditional methods, because these plants have been used by our forefathers successfully.*

In another instance, a respondent stated that:

*In the past we did not know and we were not aware of malaria, however, our grandparents knew the condition known as 'ombwela' (febrile disease). We treated "ombwela with herbs. We only got to learn the term malaria recently.*

Households had animal dung commonly available which served a dual purpose namely, as a source of fuel/energy and an insect repellent. As such, households burnt animal dung regularly for other purposes. It was said by a respondent that:

*We perform burning activities [of animal dung] before sundown to chase the insects away and to kill them. We keep the doors closed for a while to kill the insects.*

On the other hand, households also had mosquito nets available to them, particularly the doom shaped net. Rectangular and square shaped nets were seen in a few households. Where they existed, the mosquito nets were observed for quality with particular reference to whether the net was intact, clean, had holes, was clean and/or treated. The majority of the bed nets were intact and clean. There were a few that had holes and dirty. A key finding was that most nets were shared some by more than five people:

*"I am the only one with a net which I share with my five grandchildren. Many people in the house do not have nets, their nets are too old to use".*

As a remedy, the family then uses traditional means to prevent mosquito bites:

*"I use tumble weed and bitter bushes in the rooms of other family members as nets are not affordable. Traditional practices are helpful, it is only that our people are having preferences, and the way we get information makes us to believe that nets are the only solution to prevent mosquito bites".*

## **4.5 Check list**

The next paragraph presents the result from observation, information generated to back up findings from the interviews (ANNEXURE G).

### **4.5.1 Mosquito net usage**

The majority of the bed nets were found in rooms where mothers and children below the age of 5 years as well elderly females slept. A few households kept reserve nets that remained unopened. Approximately half of the respondents slept under a mosquito net the night preceding the interview. In terms of age related risk, it was noticed that the age group 0-59 months usually slept under a mosquito net. This was the case particularly because infants, more often than not, shared a bed with their mothers and the mothers, as indicated earlier, commonly had bed nets. Also, where a grandparent took care of an infant, they most likely had a bed net. Older age groups such as 5-14 and older were more likely to have no bed nets.

In households with bed nets being used, most were used inappropriately.

### **4.5.2 Inappropriate use of mosquito nets**

The most common inappropriate use of bed nets noticed was shedding and shading, fishing, drying domestic food and drying the net in direct and extreme sunlight.

### **4.5.3 Livelihood, sanitations and environmental factors**

The researcher observed that some environmental factors contributed to mosquito breeding. Conditions such as humidity, where households were built close to a source of stagnant water, increased the risk of mosquito breeding in the vicinity of such households. In some households, open water storage containers kept around the household increased the same risk. Gardens and

other vegetation too close to the household, including open shallow sunlight puddles, swamps and ponds were other environmental factors of concern. In addition, sanitation facilities such as latrines and open bathrooms were considered risk factors. Most of the households were surrounded by bushes, shrubs and trees. Most households were generally clean, although waste disposal practices in turn cause additional risk factors. Garbage heaps were seen close to households with scattered tins, bottles, and old clothing materials.

#### **4.5.4 Home and sleeping room conditions**

Most sleeping rooms did not have their windows fitted with mesh, had no door covers and other rooms had no doors at all except a piece of cloth that was used to curtain the door. Where rooms were constructed with walls, cracks were common. Desperate households used traditional methods to prevent mosquitos from accessing their dwelling places:

*For the windows we were advised to put an old cloth. For the cracks in the walls and the roof, it is a challenge to use old cloths because we don't have enough. We only use fresh bitter bush branches as a first aid.*

Animal cages and kraals could be seen close to the majority of households, where domestic animals were kept. This provided added mosquito breeding grounds particularly during the rainy season, with a heightened risk for mosquito bites and malaria.

Table 9 : Summary of the findings, conclusion theories and Central concepts

quantitative	Qualitative	conclusion	Theories	Central concepts
Age play role in bed net ownership and usage.	Age play role in bed net ownership and usage	Bed nets ownership was associated with programmes targeted risk and vulnerable groups	Cultural awareness, knowledge, skills and desire Negotiation	Integration
Gender difference play important part on malaria prevention activities among respondents.	Lack of interest in participation in malaria activities among male participants Nets are given to women and children.	Stigma and gender based perception associated with the use of bed nets and net distribution.	Dynamics, lack of consultation, transformation, Communication and lack of programme ownership.	Empowerment Sustainability
Majority of bed nets usage is found among infants women of child bearing age and elderly.	Pattern of bed nets usage were observed among babies, mothers and grand mother	Risk is associated with perception of malaria as a disease for females and children	Restructuring, accommodation, repatterning, competent recipient.	Integration Empowerment.
Lack of employment and income.	Lack of employment and income	Lack of working opportunities and development in the region .	Dynamics, limited technology and education.	Empowerment.
Level of education influence understanding on bed	Level of education has influence of bed nets use.	Education increase understanding.	Knowledge and skills.	Empowerment.

<p>nets usage and purchasing.</p> <p>Few people are affording to buy nets.</p> <p>Majority of the bed nets were acquired by free net campaign from the MoHSS and other NGOs.</p> <p>Emphasis is given more on use of modern practices.</p> <p>Always use bed nets.</p>	<p>Bed nets are expensive.</p> <p>Receiving bed net from government and Red cross.</p> <p>Advice community member to believe that bed nets are the only best protectors</p> <p>Discouraging community members not to use traditional practices.</p> <p>Lack of decision making in selecting suitable</p>	<p>Lack of equity, access and limited protection</p> <p>Dependence.</p> <p>Lack of trust in of traditional methods.</p> <p>Imposing ideas.</p> <p>Lack of autonomy and decision making.</p>	<p>Dynamics.</p> <p>Cultural skills</p> <p>Cultural desire and cultural encounter. Modification and repatterning. Holistic and comprehensive view.</p> <p>Autonomous being, Collective decision making, cultural</p>	<p>Empowerment</p> <p>Integration.</p> <p>Sustainability Integration.</p> <p>Empowerment. Sustainability.</p>
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<p>Traditional methods are widely available, but limited in use.</p> <p>Lack of income generating projects</p> <p>Traveling long distances.</p> <p>Lack of transport</p>	<p>methods in Malaria prevention.</p> <p>Community members not prepared to initiate and continue buying net if donor funded distribution stops.</p> <p>Traveling of long distances</p> <p>Lack of transport.</p> <p>Limited knowledge on risk factors to Malaria</p> <p>Perception of Malaria seen as a disease of other people.</p> <p>Low confidence among HEWs in advocating for use of traditional practices.</p> <p>Low self-esteem and negative attitudes among</p>	<p>Lack of skill training and capacity building.</p> <p>Lack of adequate infrastructure and limited political commitment.</p> <p>Low level of knowledge.</p>	<p>awareness, knowledge and encounter.</p> <p>Agents, terminus.</p> <p>Accommodation, restructuring, agent, sensitivity</p> <p>Observations, skills; knowledge.</p>	<p>Empowerment and integration.</p> <p>Empowerment.</p> <p>Empowerment</p>
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	<p>HEWS on use of traditional prevention practices</p> <p>Powerlessness over life choices.</p> <p>Lack of research evidence of efficacy on the use of traditional practice.</p> <p>Limited knowledge among HEWs in use of local traditional practices</p>	<p>Devalue of traditional practices</p>	<p>Mutual understanding, flexibility, repatterning</p>	<p>Empowerment and integration.</p>
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#### 4.6 SUMMARY

The findings from the study revealed lack of empowerment that lead to difficult to sustain and integrate the modern and tradition practice in the prevention of Malaria in Ohangwena region. HEWs and community members both have different perception with reference to use of traditional methods use in malaria prevention. The train model of current curriculum put more emphasis on net use and remain silent on advocate for traditional methods, resulting in devalue of socio-cultural practice used by community in malaria prevent.

The lack comprehensive integration during training made HEWs to doubt effective use of traditional methods. This result in HEWs impose people ton use nets despite that net are not always readily available and the fact that nets are expensive for community members who are not employed to generate fund.

The study finding also revealed that available nets are from free distribution, most from MoHSS and NGO', only few respondents indicated that they bought nets for their households, yet still they stated clearly that they only afford to purchase few nets despite the numbers of people live in a house. This call for effort to empowerment, sustainability and integration of model to train the HEWs to render comprehensive Malaria care the meet the need of rural community in Ohangwena.

## **CHAPTER FIVE**

### **CONCEPTUAL FRAMEWORK FOR THE STUDY AND DEFINITIONS OF THE CONCEPTS AND STATEMENTS**

#### **5.1 Introduction**

The purpose of this chapter is to identify, define and conceptualise the central concepts. The definition need to be clear (84). Concept framework is an organised set of ideas and theories that help the researcher to identify research problem accurately(82). The source further describe a conceptual framework as a n integral process for generating a prolong efforts as a way of constructing ideas while viewqng the phenomena analytically(82).

#### **5.2 Concepts development**

The next step is clarification and analysis of the concepts. The main concepts derived from the study findings were empowerment, integration and sustainability. The steps used to undertake concepts analysis is borrowed from literature(84).In the next discussion the used steps are described in detail.

##### **5.2.1 Identification of Central Concepts**

The definitions of the main concepts of this study were done with the assistance of utilization of various dictionaries that provide detailed meaning by tracing synonyms of empowerment, sustainability and integration. The following part of the discussion of the main concepts will commence with definitions according to dictionary language explanation and usage and conclude with subject definitions where appropriate. Concepts are defined as collective keywords, uses of the conceptual terms in the context and the definitions involve both explicit and implicit aspects(82). For clarification purposes, the researcher needs to develop attribute quality, antecedents and consequences of the main concepts(84). The following central concepts were

derived from the perception of the people in association with the world around them. The central concepts were identified after data analysis and indicated in table 5, chapter 4 as feeling of helplessness, undermining and cultural imposition of biomedical prevention (**empowerment**).

Traditional and cultural methods of Malaria prevention widely available but not applied (**integration**). Malaria is a seasonal disease and so are the traditional herbs or medicines (**sustainability**). The social status of community members in the region is badly affected by low economy as there is no advance development and no good infrastructure in term of in adequate health facilities, low industries and high rate of unemployment, poor roads and poor network coverage that hampered communication. The themes that emerged from the study indicated that there is need for empowerment in reference to knowledge of traditional methods to strengthen it as majority of the people are not affording to buy net, moreover they have local plants, herbs and traditional natural resources to rely on.

There is a need to endorse **integration** of traditional practices that are effective in the training to facilitate **sustainability** of indigenous knowledge that influence Malaria prevention.

### **5.2.2 Determine the purpose of the concepts**

The researcher value the purpose of the analysis as it assists to focus on the intended use of concepts. The purpose of analysis concepts was to identify defining attributes, to clarify vague concepts, to propose theoretical definition and to explain usage of the identified concepts in the study, in order to reach clarity and comprehend of these concepts(84). In addition, this was done to recommend a specific operational definition of concepts that simplified the process of model development.

### **5.2.3 Identification of the use of concepts**

The use of the concepts were derived from existing theories, professional and academic literature. This assists in validate the researcher decision of choice in defining the attributes of the concepts(84).The use of multiple sources was to identify the use of concepts as many as possible and to expand the use of definition beyond its limits of common linguistic usage of the concepts **“empowerment, sustainability and integration”**(82). Various dictionaries were used to define and provide synonyms for the concepts.

### **5.2.4 Definition of central concepts**

The identification of central concepts create the necessity to define them, so that denotative definition is explored in details. Central concepts were also defined by subject. Definitions were made by list and narrative form(82) In this study theoretical definitions were derived from dictionaries, enable the researcher chance to introduced essential attributes, antecedents, and consequences of the identified concepts. The next discussion below led to detailed definitions of concepts

#### **5.2.4.1 Empowerment**

Empowerment is defined as “giving someone power or authority to do something”(91). The concept ‘empowerment’ also means to do something in a formal way, like giving somebody the power or authority to do something, formal obligation with a mandate(91,92). Community members are morally obliged to take responsibility and accountability for their own health. However, there is a need for a degree of endorsement by the government to safeguard daily execution of Malaria prevention activities.

Empowerment referred as “to do something formal”(92). According to (93) empower means to give someone more control over their own life or situation. Commonly-used synonyms for empowerment include: authorize, accredit, allow, certify, commission, delegate, enable, entitle, equip, license, mandate, permit, sanction, warrant and qualify.

Empowerment is defined from various sources and subjects such as education, economy, health and psychology. Studies of empowerment can also be found in a variety of disciplines, including health, education, humanity, sociology, science, political science, social welfare, management, and community psychology. This study used a wide range of information from these related selected disciplines and subjects. From the educational point of view, empowerment evaluation focuses on use of concepts, techniques and findings to facilitate improvement and self-determination (94). Empowerment is a process that bears outcomes and these processes are fundamental for attempts to gain control, obtain needed resources and logical understanding of the social environment. Empowerment outcomes refer to operationalization of empowerment that enables researchers to study the end products of a community’s effort to gain greater control in their environment and the effects of interventions designed to encourage participation. Empowerment is applied to individuals, communities, cultures and organizations with the focus on programs development.(94).

Empowerment means different things to different people(95) and empowerment takes different forms for different people . Empowerment in politics is defined as a process of social and political empowerment whose long term objective is to re-balance the structure of power in society by making state action more accountable and strengthening the powers of civil society in management

of its own affairs, while making corporate business more socially responsive. Empowerment can be psychological or social and both are important for success when working with civil society (95). Empowerment in health and welfare is explained as people working to gain control of their own lives by trying at the level of their capability to empower themselves(96). The Concise Oxford Dictionary, as cited by (96) defines empowerment as “authorize, license a person to do, give power to, make able person to do”. The source further indicates that the concept of empowerment has double meaning, namely “enablement and empowerment”. Thus empowerment is to authorize, license or make able. It is a process whereby someone uses their power to enable someone else to do something. Psychological empowerment encompasses three constructs namely, critical awareness of power structures, perceived control over one’s life, and citizen participation. Empowerment is described as a process by which individuals, groups, and communities become able to take control of their circumstances and achieve their goals as well as being able to work towards maximizing the quality of their lives(96). Empowerment means to achieve much-needed social and cultural liberation. Structural empowerment and psychological empowerment are interrelated and promote professional growth in an organization(97). There are advantages in empowering somebody and the advantages of empowerment are to “enculturate” or nurture staff to think logically and critically, solve problems and develop a leadership attitude among others(97). Empowerment is also examined from a gender perspective and agricultural point of view. (98) defines empowerment as “expanding people’s ability to make strategic life choices, particularly in contexts in which this ability had been denied to them”. In practice, the ability to exercise choice encompasses three dimensions:

- Resources, not only access but also income and future claims to material, human, and social resources;
- Agency, processes of decision-making and negotiation;
- Achievements well-being outcomes, educational levels.

In Zimmerman empowerment theory as cited by(99) defines psychological empowerment from the employee perspective as a cognitive state characterized by a sense of perceived control, perceptions of competence, and goal internalization. The psychology industry recognizes that the psychological empowerment framework plays a vital role in community empowerment through social media, advertising and information from various corners of the world. Psychological empowerment has two components: intrapersonal empowerment and interactional empowerment. These two focal components of the empowerment process are observed mostly at the individual level. However, empowerment is a multi-level, open-ended construct that includes the individual level, organizational level and community level. Empowerment is viewed as a process and an outcome. The empowerment theory by Zimmerman, 1995 as cited by (99) revealed that psychological empowerment includes intrapersonal, interactional, and behavioral components. Empowerment could refer to the act of empowering and the internal mental process of the individual being empowered. Psychological empowerment is described as “the connection between a sense of personal competence, a desire for, and a willingness to take action in the public domain”. There are underlying assumptions for psychological empowerment such as:

- Individual characteristics such as age, gender, and socioeconomic status affect how empowerment is perceived and acted upon.
- Another consideration regarding the concept of empowerment is that it takes different forms in different contexts.
- Psychological empowerment is not a static trait; rather it is dynamic process that fluctuates over time. This suggests that individuals, families and community may become more empowered over time to develop assertiveness.

In the next paragraph some of the characters of empowerment are described by the various authors (97,99,100) as follows:

- Empowerment promotes leadership, collegueship, self-respect and professionalism.
- Empowerment liberates staff from mechanical thinking and encourages problem solving.
- Staff motivation and autonomy are embedded in empowerment.
- It is a dynamic process.
- Developing knowledge and skills
- Develop a sense of professional responsibility
- Assertiveness in work performance
- Providing employees with opportunities
- Provides the team with capacity and authority
- Plan, coordinate and communicate
- Decision making
- To achieve team goal
- Nurse participation
- Control over daily life
- Shared decision-making
- Planning for future
- Evaluate the progress of achieving goals

#### **5.2.4.2 Sustainability**

According to(93) sustain is defined as providing enough of what somebody needs in order to live or exist. Sustain means continuing to do something; maintaining it or keeping it in existence, over a period of time(101). Sustain means:

Maintain

- Uphold
- Bear(91,92).
- Keep up
- Keep going(101).

The concept sustain is describes as:

- Activities and strategies that anchored prevention interventions
- Something to make something continue for some time without becoming less
- To maintain economic growth
- A period of sustained economic growth
- A program that manages to sustain everyone's interest until the end of the activity
- Something to provide evidence to support an opinion or theory
- Involving the use of natural products and energy
- Sustainable forest management
- An environmentally sustainable society(91–93).

Experts in the field of Public health define sustainable development as a development that meets the current needs without jeopardizing the ability of future generations to meet their own needs, in terms of time, place and people(102). HEWs should use relevant channels of communication to advise and motivate rural community members regarding the use of traditional practices and old nets with holes and encourage them to continue using long-lasting insecticidal nets as long as the holes are repaired (103). For sustainable environment (103) indicated that residents need to be advised not to discard worn LLINs in any water source to avoid toxic to aquatic organisms. If the worn out LLINs are to be collected from the community members, arrangements should be put in

place to ensure replacement with new ones so that protection is maintained through universal coverage (103).

It is not permissible to burn plastic bags and packaging materials used for LLINs in open air. These materials should be burned with high temperature incineration equipment if it is available. In its absence, the best method is to bury the materials away from water sources, in non-permeable soil. Proper disposal and waste management of materials from LLINs calls for understanding of the relationship between empathy and sustainability of the environment(104). It calls for a balance of positive behavior that promotes human interactions with the ecosystem, while conserving a healthy environment. Consolidation of human-environment interaction is shaped by social, cultural, economic structures and values that empathize with nature, promote sustainability and prevent ill health from air pollution and toxic soil and water(104). According to WHO (105) the physical environment should be complemented with proper access to services in terms walking distance, preferably one hour to reach. Economic access should also be considered by providing Malaria control services free of charge to community members.

#### **5.2.4.3 Integration**

Integration takes place when two services are run parallel on several fronts, known as “horizontal and vertical”. Horizontal integration is aiming to combine coordination of a range of developmental services such as health, education, agriculture, water supply and sanitation, transport, communication and technology(106). Integration is described as the explicit conversation between or interrelating, combination, effectively combined, bringing together of different ways (107). Social integration refers to the degree of individual participation in a social relationship, and it is linked to presence and extent of relationship. Durkheim as cited by (108) revealed that higher social integration safeguards the society from devaluation and destruction of

regulations, as well as distorted beliefs or norms. Characteristics of integration(106) point- out that efficient integration is as important as promoting comprehensive care. Essential features for the concept integration include the following:

- Political commitment to health and equity in health care for all;
- Community involvement and participation;
- Inter-sectorial coordination and effective use of the work force;
- Transformation;
- Expanded coverage;
- Use of appropriate technology;
- Support services;
- Built on community resources;
- Creative in problem solving; □ Promote positive psychological state;
- Increase motivation to care for oneself.

(109)pointed out that integration refers to equal opportunity policy and creation of a conducive environment that enhances learning for everyone. The physical environment influences access, policy statement, equality of opportunity for learning, including curriculum, resources and extracurricular activities. All these activities need collaboration, teamwork, and joint resources to produce useful results in development of integrated Malaria prevention care programs at community level. The government and Non–governmental Organizations collaborate with trainers and community at grass root levels.

The researcher, guided by(82,84), put more emphasis on selecting stand alone and critical reflections that form an integral component of developing creativity and imagination of ideas that construct a model. Thus, grouping of concepts permits broader meaning and seeks interrelatedness

of the concepts with reference to their characteristics in different situations(84). Based on this knowledge, the researcher identified group features most associated to and used in relation with “empowerment, sustainability and integration.”

Trainers are seen as agents of change, who possess all the experiential learning in theory and practice. They are entrusted to impart knowledge to HEWs and try to empower them to transform the rural community in Malaria prevention and care. Rural community members are autonomous and have a wide range of sociocultural lived experiences that the HEWs need to observe through listening skills and observing. Hence the stop, see and listen skill plays a big role in the life of all health workers, if their interest is to empower the community in health matters that affect their daily life. Empowering of HEWs helps in taking collective decisions for them to develop and be immersed in the process of cultural competence. However, for empowerment of HEWs to take place and use proper of traditional and modern practices to occur among rural community members, the trainers should be experts who display the following features: harmonization, giving, planning, organizing, integrating, transformation, improving, participation, involvement, autonomy and sharing.

Table 10: Defining attributes of “empowerment”

	Empowerment
Defining Attributes	<p>Harmony between the use of natural resources, modern technology resources and human resources;</p> <p>Autonomy, interest in partnership, Social cohesiveness, mutual trust relationship, creativity-improved team work, independence, inspiration consultation, networking, decision-making and community participation. Plan, organize, erecting, coordinating, management of resource and decentralization of authority</p> <p>Satisfaction, perceived quality of care, facilitated competence/increased experiences, ownership, self-reliance, active involvement in advocacy, Collaborate and look for opportunities.</p> <p>Authorize somebody to do something, legal right, give formal power and more control over own life</p> <p>Political commitment on health policies and health aspects that affect the community, leadership promoting positive work environment</p>

Sustainability is a global issue that involves the environment, socio-cultural activities and the economy(110,111).

Sustainable development optimizes human survival and minimizes risk at the same time. This situation makes people aware that there is a need to create a healthy relationship and (112)emphasizes the importance of maintaining the natural environment and minimizing ill health through waste management, in order to improve human welfare worldwide.

Table 11: Defining attributes for sustainability

Sustainability	
Defining Attributes	<p>Social and cultural reputation, strengthen social, cultural, and economic motivations, recognition of traditional rights.</p> <p>Natural resources in the environment, maintain quality of the environment, exploitation of resources, active usage, inclusive, safe appropriate service meet community needs.</p> <p>Political commitment community resource mobilization, create shared resources poverty reduction, growth in harmony, equity, shared activities, social structure connectivity, create new values through knowledge shared, feeling of belonging and community engagement.</p> <p>Flexible, tolerant, cohesive with strong local culture</p> <p>Communication linking people to health and other services</p> <p>Record development in orientation of technological evolution, accessible service for all with reference to growth</p> <p>Improved standard of living, local quality of life</p> <p>Mutual understanding, social justice, direction of investments, planning consistent with present and future needs, affordability, leadership, directives that involve making of painful choices</p>

Integration is a broad and complex concept. It plays a role in pooling of resources for effective use in limited-resource settings to produce a better outcome. Therefore “social support and integration are key aspects of social relationships”(108). Integration can be vertical and/or horizontal in nature.

The table 7 below displays the attributes of integration.

*Table 12: Defining attributes for “integration”*

Integration	
Defining Attributes	<p>Act in harmony, insertion, collaboration and work together</p> <p>Merger, coordinator, planner, and organizer, managing responsiveness, infrastructure, advocate for resources</p> <p>Working and supervision others, function productive, interactions, community mobilization, strengthen partnership</p> <p>Positive policy environment, to become formally-accepted, process of uniting people who have been separated, social support, effective communication and consultation</p> <p>Working together for common goal, to combine two or more thing so that they work together, making various parts closely connected and work successfully together joined and incorporated, amalgamated, comprehensive, fullness</p> <p>To integrate the program in the existing services, whole, entire</p> <p>Combine resources, getting together, to fit things together</p> <p>Integrated networking, sharing of resources and information, collective concurrence about something</p> <p>Coordinated implementation of effective communication, transparent role model management, caring attitude</p> <p>Inter-sectorial collaboration and coherent process</p> <p>Engage, inclusive creating of opportunities and organizing</p> <p>Involvement, bring in ownership and willingness to work</p>

### **5.3 Statement Development**

The purpose of statement derivation is to merge the concepts together for meaning and clarity pertaining to study findings. The process seeks to Construction of the relationship statements. Phases 2 statement that demonstrates the link and relationship of the central concepts in a manner that facilitates the contribution of new knowledge generated from two or three factors(84).This combination process of statements generated from the three central concepts enhances the formulation and development of a model.

The full description of statements will be provided in chapter 6.

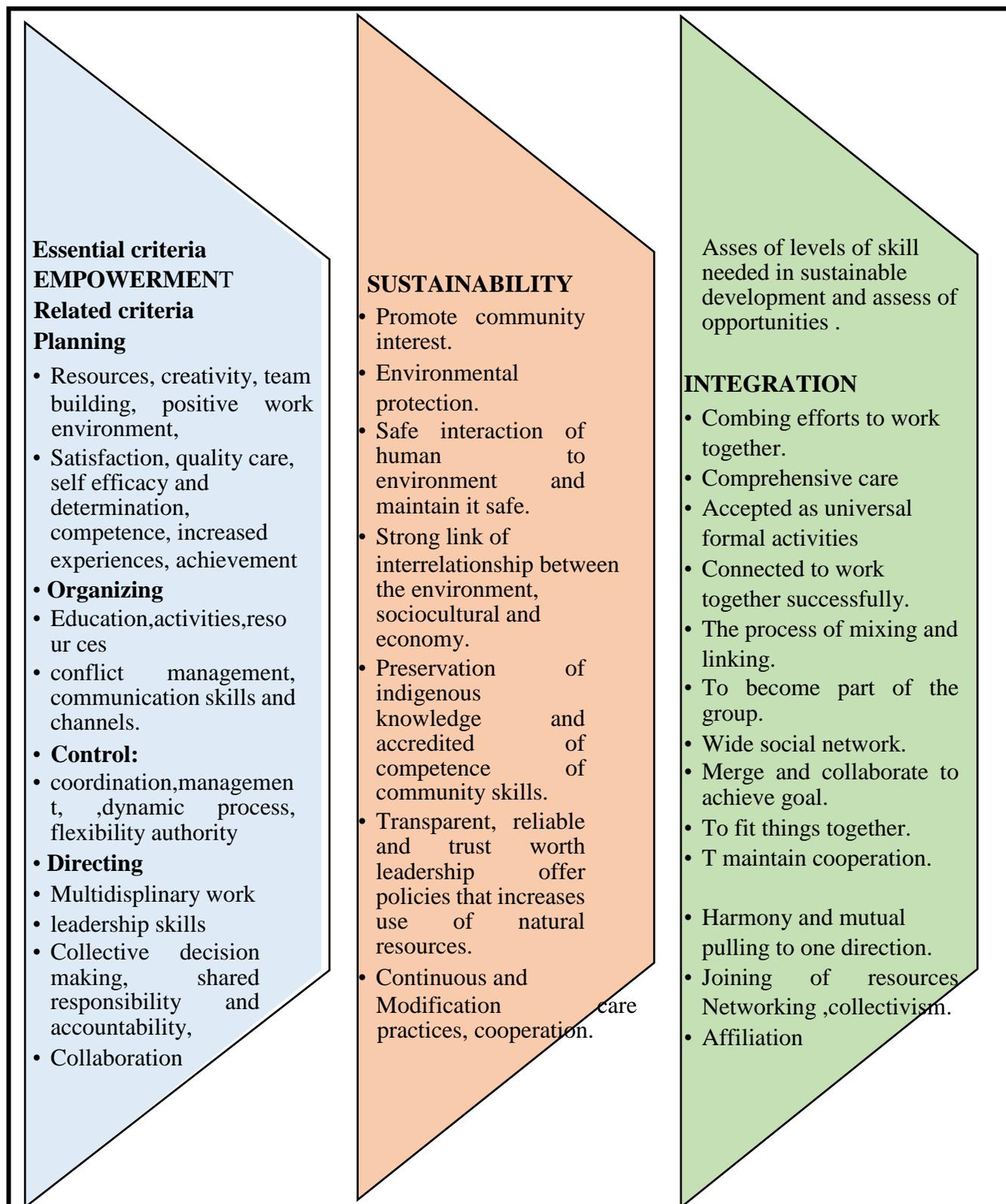


Figure 33: Defining attributes for the statement “empowerment to sustain integration” care

Figure 38 above defining attributes for the statement “empowerment to sustain integration” care.

The identified concepts need to be aligned with the purpose of the study, therefore the concept needs to be narrowed down to generate meaning and be linked to the use of the concepts in the study. While it is important to select central concepts and define them, it is equally vital to indicate their utility and application to this study. The meaning of the central concepts used in the study is extracted from various dictionary definitions, while care was taken to select and adopt various uses of these concepts in different disciplines, as explained by different authors. The process of narrowing the concepts is the backbone criterion for intended meaning as reflection of main concepts(82).

Trainers of HEWs are professional nurses from recognized categories of prominent health workers caring for healthy, ill and dying people as well as their families. Trainers are seen as agents of change, capable of planning, organizing, controlling and directing all the activities and resources needed to empower the sustainability of the integration care related to Malaria prevention and control in rural communities. Trainers are experts; they possess creativity on team building activities that facilitate a positive working environment and provide the community with quality care as evidenced by the determination, increased experiences and competent HEWs.

IT is expected from the trainers to impart knowledge and practical skills about sociocultural and modern practices to the HEWS during the training. For empowerment to bear fruit, education should be tailored to meet the needs of the rural community that is being served. It is the responsibility and accountability of the trainers to ensure that the HEWs are equipped with communication and conflict management skills and demonstrate a degree of flexibility in their daily life of rendering service to the rural community. Therefore, empowerment plays a role in collective decision making by facilitating a spirit of collaboration and liaison, which demonstrates leadership skills and enhances multidisciplinary work. Empowerment is a dynamic process, which

makes smooth coordination possible even in complex situations. As leaders, trainers seek to coordinate use of resources effectively in order to achieve harmony and get activities done through others. This indicates that power is effective if vested within the people. Empowerment of HEWs motivates the individual to take charge of the environment around them, thereby promoting self-efficacy, social and personal change, improving healthy behavior and promoting mutually beneficial relationships. Trainers empower the HEWs and rural community to dig deep to the roots of the Malaria problem and work towards effective solutions.

Sustainability promotes community interest. This involves environmental protection and promotion of safe interaction of human beings to the surrounding natural resources to sustain life. An experienced HEW sustains, supports and cares for the community members, while keeping in mind the process of becoming, so that they avoid imposition of ideas on rural communities by all means. This is the result of the assistance provided to HEWs by expert trainers to develop their thinking capacity through ideas about situations they are likely to encounter and to help them to comprehend the culture and social structures of the community they are serving. The HEWs learn the diverse culture and strive to narrow the gap of culture shock, while establishing effective therapeutic relationships.

Sustainability is about creating balance and developing a link of interrelationship between the environment and its natural resources, preservation of indigenous knowledge, accrediting of competence of community skills and the economic status of the local people. Sustainability is a process that requires continuous modification of care, depending on cooperation with the served community and assessment of levels of available skills in order to assess availability of opportunities that support the use of sustainable natural resources. It requires transparency, reliability and trustworthy leadership that offers inclusive policies and advocates for use of local

natural resources and modern resources. Sustainability calls for the issue of cultural factors and social structure that influence local care, expression, patterns and practices to be addressed. Such aspects include shared values, rules, ideas, symbols, traditional ceremonies, languages, care practices, beliefs, kinship, religious and philosophical factors, technology, political, economic and educational factors. Knowledge of these aspect helps in sustaining traditional care and modern care practices through maintenance, negotiation, re-patterning and accommodation so that comprehensive care can take place and the needs of the rural community can be met.

Integration is the combined efforts to work together between Management (government and nongovernmental organization), Trainer (agent), Trainee (HEW) and stakeholders, (recipients of service can be rural community at individual level, families and community). Integration of Malaria care addresses the problem by using a holistic approach, whereby equal weight is accorded to both traditional and modern prevention practices, especially in limited resource settings. The purpose of integrated care is to achieve zero local Malaria transmission among rural communities using whatever resources are available without favoring modern preventive practices and discriminating against or devaluing local natural resources and indigenous knowledge. The process of integration requires wide social networking and merging of collaborative efforts in the fight against Malaria transmission among the community. Integration is needed to join resources and to harmonize traditional and modern practices by conducting collaborative research. The integration process of sociocultural Malaria care requires coordination, leadership skills, collectivism, affiliation and policies that support pulling in the same direction in joining of resources. This means formal inclusive policy that advocates for incorporation of socio cultural prevention practices in the existing modern care programme, backed by research, to enhance accepted universal formal activities and connected services to promote successful collaboration.

## **5.4 Designing of Model and Borderline Cases**

The model construction can be done simultaneously with attributes or come later after the determination of the attributes (84). The model described in this study is constructed from data analysis and concept analysis and is constructed by the researcher. Based on the experience of the researcher, the constructed model represents the utility of the defined characteristics for empowerment, sustainability and integration.

### **5.4.1 Construction of Model Case Study**

An old woman aged 62, who depends on an old age grant, is the head of a household of 10 family members. She is unemployed and has no other source of income except the old age grant. The household received four (4) free LLINs from net mass campaign of MoHSS. There are four adults living in the household and nets were allocated according to the age of the adults, without considering the number of people sleeping in a room per night. The grandmother is challenged to make a decision whether to use the net reserved for her daughter who works away from home and is afraid to ask her pregnant daughter to use the LLIN to protect herself from mosquitoes. The idea of receiving four LLINs is so that they can be used effectively in the household although it is not enough to cover the number of small children. The old woman is always worried when sleeping time approaches, thinking how best she can protect her grandchildren and how to convince her daughter to start using the LLIN before her baby is born. It would be good if the pregnant woman starts using her net and shares it with at least one child before she gives birth to reduce the risk for the overcrowded children who share one LLIN with her mother. It is a challenge to the HEW who visits this family every second week. She has no trust in traditional practices and has little knowledge on cultural aspects, which makes her afraid to emphasize the use of additional

practices such traditional herbs, plants and animal dung, considering the age of the children and space inside the sleeping hut.

This HEW is always favored and encouraging the family members to trust LLIN use, as traditional practices are less effective and are reliant on word-of-mouth rather than documented research findings. It has been like this: the HEW just imposed the information that she learned during her training. While the HEW was visiting one day, she found the pregnant woman in labour. The HEW quickly remembered a certain nurse in the neighbourhood who was still on annual leave. The HEW sent a messenger to call the nurse and request her to help them to inform the PHC supervisor and to call an ambulance to come and take this young lady to the hospital. The Midwife stayed with the family until the ambulance arrived. She learnt about the problem of overcrowding and poverty at this home and saw the net laying on top of the case still in its plastic cover inside the hut. She also overheard the health education of the HEW discouraging use of traditional practices and emphasizing the use of LLINs. The advice provided was that LLIN is the best ever method to rely on for 100% protection against mosquito bites and that other methods available were not as good as the net. Beside the advice favouring modern practices, she felt helpless in this situation. She was aware of the challenged posed by poverty and unemployment among the sibling. The nurse quickly assessed the situation and concluded that the money the grandmother received from the old age grant was for food and other basic needs. She had many people to take care of. She thanked the HEW for the good job. Nevertheless, she decided to share her evidence and concern with PHC supervisor on how to help the HEW and the affected family. The PHC supervisor decided to organise a one day seminar to hear the perception of HEWS on Malaria prevention to assess their experiences on advice about Malaria prevention. It is during this session that the supervisor heard that more emphasis was placed on LLIN use as the best method for

malaria prevention and very little was said by a few HEWs on other methods, specifically traditional practices. He decided to call for a meeting for PHC team Health workers, leaders and all key stakeholders to share information about available local resources and methods used in traditional practices to prevent Malaria. The participants of the meeting felt that teamwork was needed and a steering committee at community level was suggested. The meeting participants felt that they needed to share local resources that were used in the past, before the commencement of modern practices, but the process needed combined effort, commitment and support from political leaders. They started planning to participate in a radio talk show and to place advertisements on radio. To achieve this, they needed adequate resources and good indigenous knowledge, skills and expertise. By planning together, they would be able to make an impact because sharing of responsibility would help the new generation, including the HEWs, to start using locally-available natural resources. The next concern was how to make a link that would empower HEWs in the region to sustain mobilization of the community for Malaria prevention by integrating the traditional and modern practices for malaria prevention as many seemed to devalue the use of traditional practices. The concern was turned into an opportunity to initiate knowledge sharing from the experienced elders who had used the natural resources for a long time and giving them the opportunity to explain their evidence in community meetings and places where big gatherings were taking place. This information-sharing create opportunities for collaboration and coordination of responsibility and endorsement to traditional and political leaders. Through collective decision-making, community involvement took place and the promotion of ownership and autonomy was revived.

The PHC supervisor seized this training opportunity and informed the stakeholders that: “I believe that it is the responsibility of every citizen to facilitate development at community level. Creativity is

a capability that resides in each human being but it varies from person to person”. Interpersonal skills facilitate proper organizing and directing and they facilitate the transfer of power and authority to other stakeholders so that activities can be undertaken in harmony with others. Consultation and communication linking people to health are needed to create a positive and enabling environment in which respect, teamwork, flexibility, tolerance and cohesion with strong local socio-culture prevail. The Nurse Manager contributed by saying: “Views and ideas of community members should be accorded respect”. She emphasized the need for ‘stop, assess, look and listen’ skills from the health workers. Another expert posed an important question to motivate critical thinking and minimize cultural shock: “How does one become more vigilant?” One Nurse suggested that if “we support HEWs fully; they develop a process of becoming but not seeing themselves as experts of every culture by imposing their culture on community members”. The health team and stakeholders who attended the meeting agreed that they would work together to achieve the common goal of empowerment to sustain the integrated care needed in Malaria prevention at community level.

### **5.9.2 Construction of a Borderline Case Study**

A 24-year male youth was staying with his parents and his two sisters. Out of the three siblings, two were unemployed and they stayed at their parents’ home. One young woman, who was 22 years old, was pregnant with her first child. The one who was working was earning a very low salary and stayed far from home and this made it difficult to commute daily back home. However, during free net distribution, she was also given a net. In her absence, the net was locked up in her sleeping room, unused. The net for the pregnant lady was kept in its plastic wrap, awaiting the arrival of the newborn baby. The pregnant woman perceived the Malaria transmission as a problem for others that would not affect her while she was pregnant. The gentleman owned a net, but made no attempt to use it, as he associated net use with gender, age, stigma and vulnerability.

This was based on past experience, when LLINs were only distributed among pregnant, lactating mothers and children under the age of five years (Perception bias increases the risk to malaria transmission). The two siblings were experiencing problem in net use. The pregnant woman was afraid that the net would become old and she would not have money to buy a new one and might end up using a torn or worn out net which would compromise protection of her newborn baby. She decided not to use the LLIN until she gave birth (which increased the risk of exposure to mosquito bites during pregnancy). In both situations, it is clear that there is resistance to change and lack of utilization of natural local resources. Traditional practices are not respected by young generation. The HEWs are not good at negotiation skills and have limited interpersonal skills. HEWs believe that they are trained to educate community on malaria prevention, specifically on biomedical interventions, which are well documented. However, if they go to areas where known traditional practices are not visible, as most of these herbs and plants are seasonal, they tend to de-emphasize these preventive practices. In addition to non-availability, their training manual has limited visual material to show examples of traditional practices. Most of the time the practices are explained verbally without any practical or visual demonstration (Lack of empowerment). The training authority failed to provide evidence-based information on available traditional methods (lack of sustainability). There is a need for the research information to support traditional practices used for Malaria prevention. Based on these limitations, HEWs only recommend modern preventive practices irrespective of social status of the community (lack of integration). Youth employment is hampered by limited infrastructure in the region and collaboration is difficult due to limited projects and limited skill training opportunities. Due to non-availability of budget, regional councilors find it difficult to promote development of industry. The councilors work together by organizing youth forums and write letters to various government departments

(effective communication, interpersonal skill development) requesting them to assist in job creation and other forms of support for the youth, but the response is always the same: insufficient budget. Such situations lead to high unemployment, making it difficult for youth to afford basic necessities like long-lasting treated insecticide nets.

## 5.5 Identify Antecedents and Consequences

In these paragraphs I will explore some experiences, events and incidents that occurred prior to certain interventions(95) (antecedents) and also describe the concepts that emerged from the establishment of the interventions( consequences) to strengthen Malaria care prevention and control(95). The antecedents are helpful to identify the gap in knowledge while consequences provide a tracking tool for solutions to the identified gaps in knowledge and make the solutions comprehensible for all interested parties. The figure below demonstrates the antecedent and consequences of empowerment

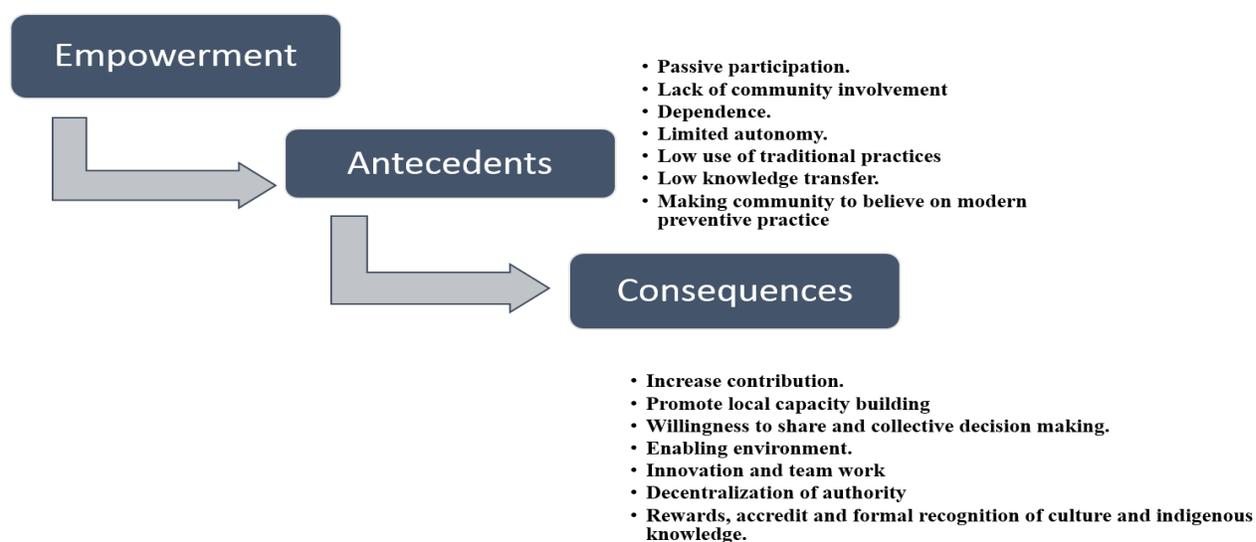
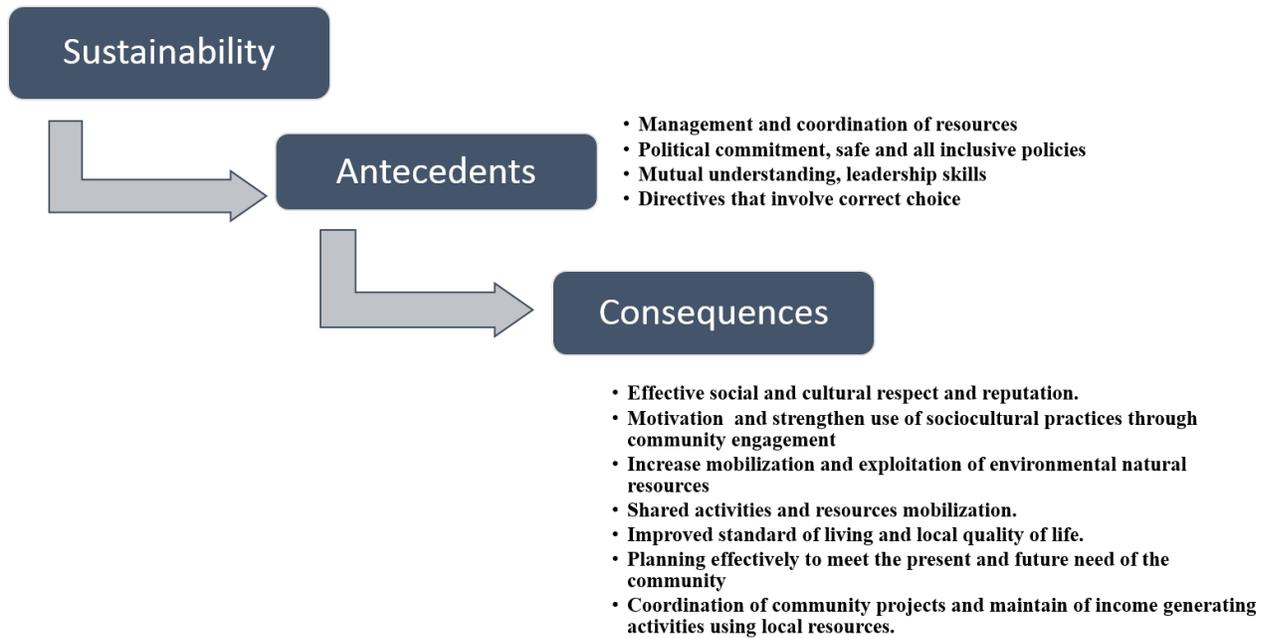


Figure 34: Antecedent and consequences of empowerment



*Figure 35: Antecedents and consequences of sustainability*

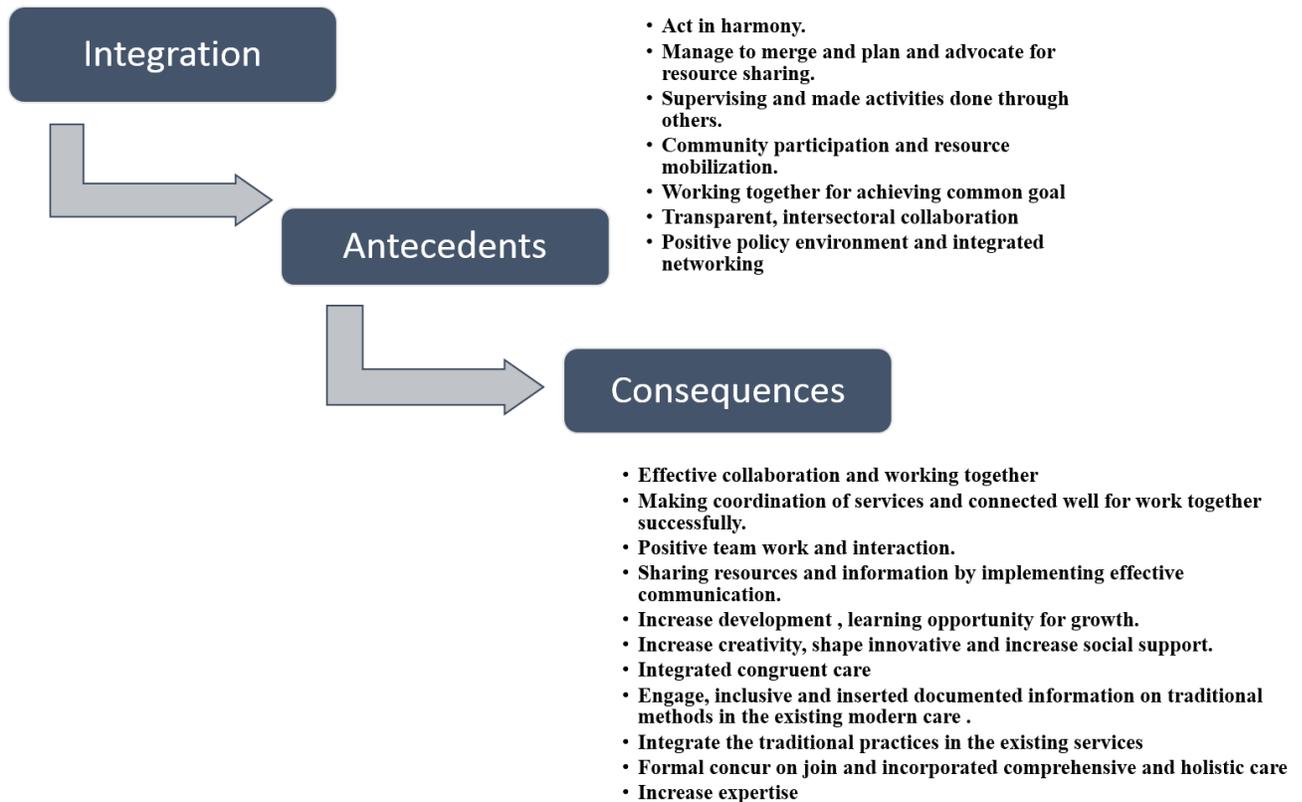


Figure 36: Antecedent and consequences of integration

## 5.6 Define Empirical Referents

Empirical referents enable the researcher to establish if the concepts under discussion can be measured and analyzed to determine the existence of the concepts in the real world(84). Empirical referents are classes or categories of real phenomena whose presence makes it possible to demonstrate the existence of the concepts (84). In this study, authority and ability might be utilized as empirical referents for the concept of empowerment. Another important example is to emphasize how the presence of preservation, interactions, link and support are influencing the occurrence of concept sustainability. While combined effort, universal, connected, working together, teamwork, collectivism, merge, fit, joining, affiliation and networking supported the existence of the concept integration. The continuum of care for Malaria should be aligned and

carried out in the same way that healthcare deals with Tuberculosis, HIV and AIDS. If a client tests positive for TB the likelihood is that this person will be sent for counselling and testing and connected to a continuum of care that is initiated by the healthcare provider. This might involve community care, home-based care or the wider community link, utilizing established structures. Similar treatment is recommended to deal with prevention and control of Malaria to enhance integration that facilitates holistic and comprehensive care. The aim of training HEWs in Malaria care is goal oriented, therefore they need to be empowered to sustain the integration of care based on experience and primary knowledge of the community.

Empirical referents supports to declare if to measure the concepts analyzed or to determine the existence of the concepts in the real world(84) .Empirical referents means classes or categories of real phenomena that its presence makes it possible to demonstrate the occurrence of the concepts itself (84). In this study, authority and ability might be utilized as empirical referents for the concept empowerment. Another example found important is to emphasis on the presence of preservation, interactions, link and support are influencing the occurrence of concept sustainability.

While combined effort, universal, connected, working together, teamwork, collectivism, merge, fit, joining, affiliation and networking alluded the existence of the concept integration. The continuum of care for Malaria should be aligned and carried out like the way the health care deals with Tuberculosis, HIV and AIDS, if a client test positive for TB the likely hood for send this person to counselling and testing and connected to continuum of care is health provider initiated, either it community care, home based care and wider involvement community link utilizing established structures, so the similar treatment is expected to deal with prevention and control of

Malaria to enhance integration that facilitate holistic and comprehensive care. The aim of training HEWs in the Malaria care is goal oriented, therefore they need to be empowered to sustain the integration of care based on experience and possess primary knowledge of the community.

Moreover, this interrelatedness of the three central concepts is back up by coordination, planning, management and collaboration for the benefits and interest of rural community. With respect accorded to beliefs, values, norms and opinions as seen important by rural community members, then harmonization between modern and traditional practices in prevention and control Malaria becomes a reality. The empowerment of rural community to sustain integration of traditional practices into modern practices that help realization of holistic care through coordination of responsibilities and use of local natural resources.

In addition, this interrelatedness of the three central concepts is backed up by coordination, planning, management and collaboration for the benefit and interest of the rural community, with respect accorded to beliefs, values, norms and opinions as deemed important by rural community members. Only then will harmonization between modern and traditional practices in prevention and control Malaria become a reality. The empowerment of rural community members will sustain integration of traditional practices into modern practices and aid the realization of holistic care through coordination of responsibilities and use of local natural resources.

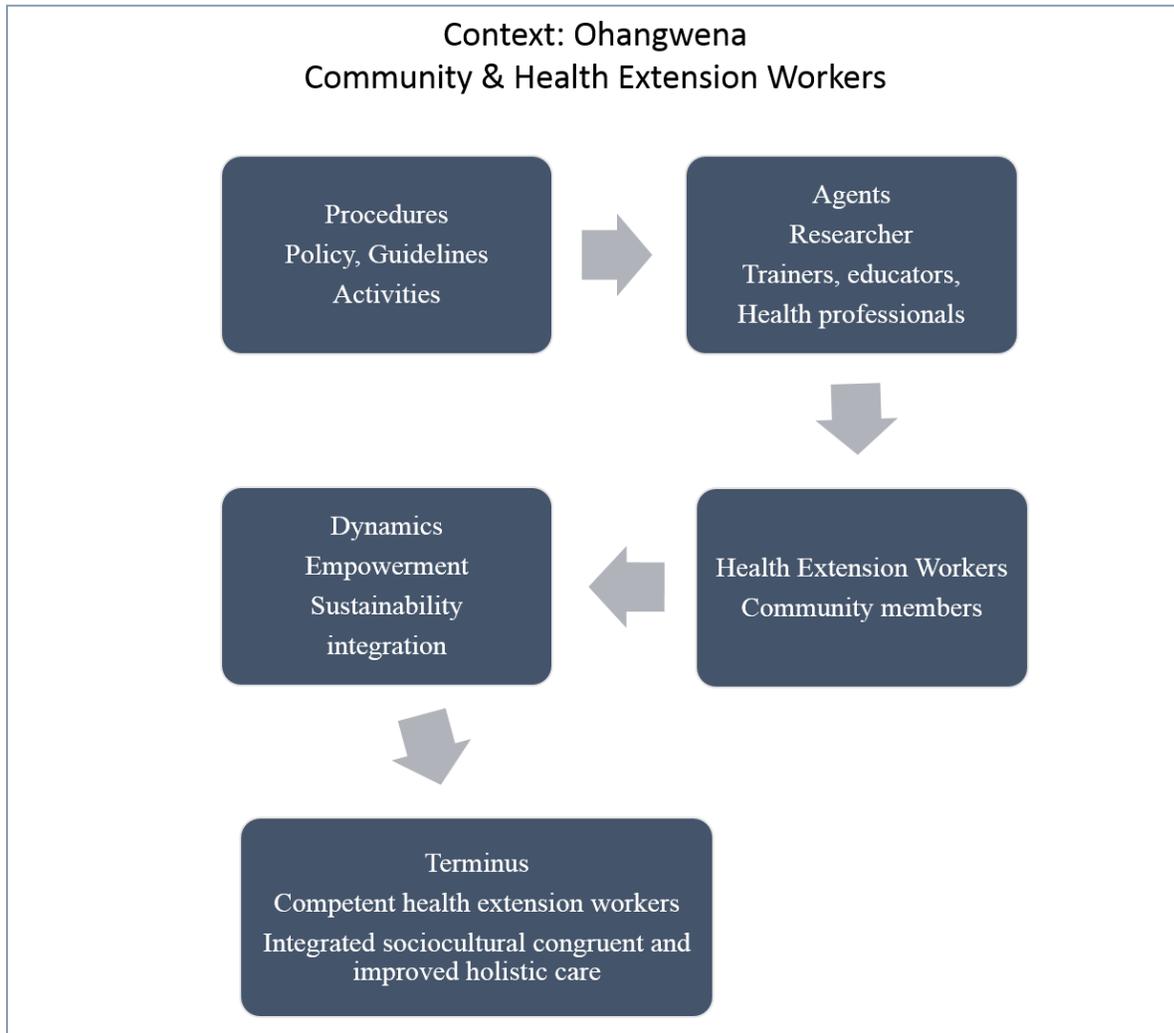
## **5.7 Development of the Conceptual Framework**

The conceptual framework used in this study was developed in relation to the focal concepts and supported by the practice oriented theory(36); transcultural theory(37), theory of culture care

diversity and universality(17). In line with the practice-oriented theory, the solution to the research problem should be based on the survey list. In the survey list, the following question can be asked:

- Who performs the activity? (Agent)
- Who is to receive the activity? (The recipient)
- In what context is the activity performed? (The context)
- What is the energy source of the activity? (The dynamic)
- What is the guiding procedure, technique or protocols of the activity? (Procedure)
- What is the outcome or end point of the activity? (Terminus)

To help the recipient to resist challenges of cultural shock and imposing of own culture, knowledge of cultural aspects with reference to similarity and differences should be considered. The driver to motivate the recipient of activity to stay abreast with the dynamic care training should incorporate culture competence. The use of the three theories build a foundation for the development of the Model that facilitate the Empowerment of HEW and community to sustain integration of socio cultural congruent care in Malaria prevention. The next discussion is oriented and provided guidance on how logic reasoning was used to develop a model that enhance the empowerment of HEW and rural community to sustain integration of sociocultural congruent care in the prevention and control of Malaria.



*Figure 37: Reasoning map based on practice-oriented theory*

The framework is a yardstick to support in directing the discussion around the research process of this study. The meaning attached to logical reasoning comes out clearly by contextualizing the relationship and linkage between components of the three theories used in this study to support findings. Each theory is described separately but the researcher tried to establish the interrelatedness. The characteristics of the components of the survey list as depicted above in figure: 36 will be described in detail as follows:

### **5.7.1 The Practice Oriented Theory**

The theory is composed of six components and they are all useful in practice at all healthcare levels.

#### **5.7.1.1 The Agent**

Agent refers to the person who conducts the activity to achieve the desired goal(36). For the knowledge and skills to be transferred comprehensively, this study has many agents that play role in transforming and imparting information to the HEWs and community members, namely, the researcher as lecturer and educator, trainers and health professionals (nurses and doctors).

The trainers, educators and health professionals are competent and skillful professionals who are interact with HEWs and community on daily activities, whereas the researcher is a lecturer with comprehensive competence in facilitating and mobilizing community participation to enhance potential capacity building. In addition, the researcher has the capability of empowering HEWs and rural community members in the use of locally-available resources by integrating the traditional practices into existing modern practices utilized in Malaria prevention and control interventions. With long-term experience in community based activities the researcher, who is one of the agents in this study, has the capacity to facilitate coordination, management, planning, collaboration, liaison and control of activities that will result in achieving the goal of this study. The agent is enriched with experiential learning from a wide range of disciplines and has gained knowledge from direct exposure and experience from active participation in clinical practice and field work. Many authors make reference to experiential learning across various disciplines(104,113–116). It is referred to as a continuous process of learning in human beings, which develops critical thinking(104); collaborative problem solving(113), creativity, communication and collaboration (114); acquisition of experience(115), focused reflection to increase knowledge, skills and clarify values(116) leading to mastery of practical techniques and

acquisition of new skills(113). The agent uses the experience to prepare an environment that is conducive for the facilitation of interaction with the participants during interviews. The agent, as a knowledgeable agent of change, believes in support from policies, standard operation procedures, guidelines, techniques and other resources.

The researcher is a specialist public and community health nurse, qualified in General, Midwifery, Psychiatric and Lecturer. For the current study the agent shared her experience by facilitating the development of a model that will enhance empowerment of HEWs and community members to sustain integration of sociocultural congruent care in Malaria prevention and control in Ohangwena region.

The agent portrays certain qualities that act as internal resources and add value to the conduct of this study. These qualities include knowledge, analytic skills of the subject content and sound understanding of culture, beliefs, norms, values, vigilant, listening skills, respect, pro-active, tolerance, flexible, good interpersonal relationships and effective communication. For clarification, the following characteristic are elaborated below to describe the agent for this study.

#### **5.7.1.2. Respect**

During conduct of the study, the agent showed respect to all involved, from authority bodies to participants. The principles of ethics concerning obtaining approval and consent, privacy, confidentiality, fairness and justice prevailed throughout the study process. In addition, the researcher was non-judgmental and human dignity was respected. Furthermore, participants were afforded autonomy and freedom of expression of views, which made it easy for the researcher to obtain rich information on lived experiences of rural community and HEWs. The agent intended to enhance capacity building, facilitate improvement and self-determination. To achieve this, it was necessary to inspire self-reliance, independence, development and growth and to motivate

rural communities to work as a team to gain control of their own lives by trying at the level of their capability to empower themselves.

### **5.7.12.3 Pro-active**

The agent has a clear goal, mission and vision of the potential of the HEWS and rural community members in future, provided that they are supported fully through the creation of an enabling environment. Therefore, being aware of the activities that needed to be conducted, a vision statement had to be put in place and all members involved in planning, coordination, and management, collaboration and implementation process had to be informed. The agent conceptualized the process of formal inclusion of traditional practices into the existing healthcare Malaria programme in order for holistic care to take place. Once this occurs, the development of a training model for empowerment to sustain integration of sociocultural congruent care for Malaria prevention and control will become a reality.

### **5.7.1.4 Knowledge and Skills of the Agent**

The agent took into consideration the potential of the HEWs and rural community members and once these attributes were revealed to them, the agent made every effort to assist them to develop self-pride, self-reliance and confidence. The agent used her knowledge and skills to develop this while at the same time building good interpersonal relationships through communication about therapy between Trainers and HEWs. This was done to promote strong relationships and to avoid conflict as the trainers need to concur about the suggested content to be added in the training curriculum of HEWs, using the new model that emphasizes empowerment to sustain integrated congruent care and the importance of comprehensive Malaria control. The agent is aiming for use of a combination of traditional and modern practice to equip the HEWs during training so that

they can offer the option of using locally-available resources in prevention and control Malaria to community members who are cannot afford to buy nets. The agent demonstrated the capability of ‘stop, observe, look and listening’ while keeping the talking at a minimal level. These features helped the agent to conduct the study and pave way to successfully develop the model.

The agent ensured focus and a goal oriented approach by promoting inter-sectorial collaboration, maximizing the potential of all available resources. The agent further imparted the skill of coordinating the execution of activities by supervising and delegating responsibilities to the relevant people. The knowledge learned and transformed into practice was used to observe any gaps that needed to be bridged through training and clarification of information to the recipients. The aim of this skills transfer process was to empower the recipients to implement integration of care to promote an inclusive and safe environment.

#### **5.7.1.5 Tolerance and Flexibility**

The agent has a high degree of tolerance and flexibility. Being dynamic helped the agent to appreciate perseverance in the process of re-patterning and accommodating both modern and traditional practices in the prevention and control of Malaria among limited resource setting rural community. The agent remained vigilant and through observation, she realized that there was limited development in the region in terms of education, technology and infrastructure. Despite progress made, a lot needs to be done to reduce poverty, as local natural resources are not fully explored and to improve job-related skills that might help rural communities to gain income so that they can generate money to buy basic necessities like nets.

### **5.7.2. The Recipients**

The recipients for this study are HEWs and community members in Ohangwena. The recipients of this study are also the beneficiaries of the model that the researcher has developed. According to practice-oriented theory, a recipient is somebody who is receiving something(36). The recipients involved in this study experienced different problems but they had one common goal - to prevent and control malaria in the Ohangwena region. The HEWs are trained to promote the use of nets and information about net use is well documented and validated. However, they have limited training on promoting traditional practices(113) states that social learning is enhanced through sharing of information, shared decision making and brainstorming of ideas. The information on traditional practices is in the form of word of mouth. There is little documented and researched information on traditional practices. This is a challenge that makes it difficult for HEWs to confidently promote usage of these practices among rural community members. This area of concern is where the expertise of the agent was needed to address the identified problems as a team and to develop mechanisms to deal with them by planning, organizing, managing and coordinating the necessary activities in consultation with relevant authority.

HEWs need to learn the process of culture competence by practicing it and getting actively involved in concrete experiences. Being immersed in learning will stimulate curiosity and inspire the HEWs to pursue knowledge related to traditional practice and also promote critical thinking and problem solving. This will require experience and skills to incorporate new material into existing knowledge by doing, reflecting, thinking ,and applying(104). HEWs need to participate, reflect and apply integrated knowledge and skills for them to render congruent, holistic and comprehensive Malaria care to rural the community in Ohangwena. Imparting knowledge to the

HEWs will transform their experiences (104) by educating HEWs to be at the forefront of delivering quality Malaria care. Malaria is a challenge in all areas where it is endemic. Combined efforts and collaboration are required to prevent mosquito bites and Malaria transmission among rural community members in Ohangwena.

HEWs need to be equipped with adequate knowledge on sociocultural aspects to increase job satisfaction and decrease cultural imposition and culture shock that may result in low self-esteem among HEWs. Imposing the use of nets, despite the low socio economic status of the community they are serving, is not a solution. They need knowledge and skill to harmonize the traditional and modern practices in order to render holistic Malaria care. The harmonization can be achieved if research on traditional practices, beliefs, values, norms and indigenous knowledge is made known to donor organization and formally incorporated in the Health care programme. Policy is silent on promoting indigenous knowledge, whereas positive influence is needed to sponsor research tailored to convert the traditional practices and indigenous knowledge into written form. The agent is purposefully developing a model that will help to retain, attain and maintain balance so that traditional practices and modern practices carry the same weight and work hand in hand simultaneously if the Malaria problem is to be eliminated in the Ohangwena region. The recipients need to learn both professional care and generic care (17). They must go beyond advocating for modern prevention but consider traditional practices and their integration in the existing Malaria programme.

The recipients, HEWs should acquire competence with regard to culture in order to provide better service to community members. In addition to their current training they need to become aware and sensitive to the culture of the community they are serving. Furthermore, HEWs need to develop good listening skills and be willing to immerse themselves in learning about culture and

also be prepared to acquire culture awareness, knowledge, skills, encounter and desire when they encounter diverse cultures(116). As recipients, HEWs will not survive in diverse cultures if experience on values, norms, lifestyles, rituals and treatment practices is not learned and internalized(37). The researcher hopes that if the proposed training model is integrated in the current curriculum, it will benefit HEWs and enhance optimum learning, increase awareness that will discourage them from imposing their own culture on the communities they serve. Experience will influence the HEWs' judgement and ability to practice without biases and prejudices(117). The HEWs will display features of maturity in rendering care to cross-cultural communities with confidence and self-esteem and guide them to use available and accessible resources without favouring one over the other. Once the HEWs become aware of their own and other people's culture, then it will be easy to accommodate, re-pattern, negotiate and be flexible in rendering congruent Malaria care(17).

### **5.7.3 The Context**

The setting where this study was conducted is Ohangwena region. The setting is regarded as environment (36) and for the purpose of this study the context was divided into settings, namely health facilities and households of participants. The health facilities were used because that is where HEWs report in for their weekly and monthly Malaria activities and services they offered to the rural community. The households' environment was considered in this study as a place where primary Malaria care and primary socialization takes place and plays an integral part in influencing interaction and social behavior of community members participating in the care experience.

Environmental context is described as "the totality of an event, situation, or particular experience that gives meaning to people's expressions, interpretations, and social interactions within

particular geographical, ecological, spiritual, sociopolitical and technological factors in specific cultural settings (17) . The environment is composed of internal and external structures. The health facilities were considered conducive to conduct FGDs hence the circumstances of reporting and notification took place at health facilities. The HEWs are supervised by PHC nurses and they are guided and supported by supervisors when it comes to reporting and notification, so their meeting and participation was influenced by the scheduled reporting date for the month reporting due to the fact that they travel long distances and have limited communication infrastructure. It was important for the researcher to consider the setting where HEWs worked so that she could plan in advance and align the interviews with the programme of the recipients.

#### **5.7.4 The Dynamics**

The dynamics in this study refer to the findings and lived experiences of the participants toward socio-cultural congruent care pertaining to Malaria prevention and care. Literature revealed various challenges experienced by community members: namely empowerment challenges, challenge associated with sustainability and integration challenges.

##### **Empowerment challenges:**

- Lack of culture awareness, knowledge, sensitivity and skills(117), where an outsider lacks knowledge and understanding of the community's culture, resulting in culture shock and cultural imposition(17);
- Limitation in knowledge, lack of focus on indigenous knowledge, persistence, preservation(36);
- Lack of formalized enactment of traditional practices that impede its integration in existing Malaria programme;

- Lack of job satisfaction and low motivation; HEWs need job satisfactions to perform their community service.
- Reduced self-motivation to learn new knowledge
- Lack of access and affordability of modern practices by poor rural community;
- Technical use of nets in traditional sleeping huts creates other problems in hanging them up;
- Lack knowledge on how worn-out nets are discarded;
- Limited knowledge on net maintenance and repair resulting in inappropriate use;
- Dependence on and favoring donor-funded and western practices;
- Lack of development, job opportunities and infrastructure;
- Lack of knowledge resulting from limited training and experience on socio-cultural aspects.

**.Challenges associated with sustainability:**

- Lack of creativity ;
- Reduced self-motivation;
- Lack of desire to offer and use local traditional practices;
- Low pride in using local traditional practices in delivering quality care;
- Devaluing of traditional practices and use of local resource;
- Decreased motivation to sustain community participation in use of local resources to generate income to buy nets to compliment traditional practices;
- HEWs have no capacity to advocate for consistent use of traditional practices, whereas the community cannot afford to access modern practices

**Integration challenges:**

- Difficulties in implementing of sociocultural congruent care;
- Lack of culture competence and maladaptation to cross-culture in the diverse transcultural society.

- Low confidence and low self-esteem in conceptualizing the incorporation of traditional care into the existing modern care Malaria programme

Although there are many challenges, they need to be motivated and linked to intrinsic and extrinsic factors, namely increase in self-motivation to learn new knowledge, awareness, desire and pride in delivering quality care(17). In addition to gaining knowledge, they need skills transfer and exposure to opportunities to gain experience. This challenge impedes integration and implementation of socio-cultural congruent care that serves as holistic care because HEWs demonstrate low confidence and low self-esteem in conceptualizing the incorporation of traditional care in combination with existing modern care, despite lack of access and affordable among poor rural communities. In addition, technical use of nets in traditional sleeping huts creates other problems when it comes to hanging them up.

Besides technical use, affordability is another challenge. In addition, the number of people sharing a net exceeds the number recommended per World Health organization of just two people per net per night. Because the training does not offer knowledge on how worn out nets should be discarded, nets are often misused or used inappropriately. Favoring donor-funded, western practices creates a challenge because it makes HEWs devalue the use of traditional practices and local resources. Community members are not prepared to be independent and this creates a problem of dependence. The community waits for free net distribution; there is no empowerment and little motivation to sustain community participation in the use of local resources to generate income to buy nets to traditional practices. HEWs have no capacity to advocate for consistent use of traditional practices where communities cannot afford to access modern practices. This was revealed by findings of this study, where some participants stated: “tumble weeds and other traditional practices are things of the past; we are in the modern era of net use”; a male HEW

participant, who seemed to be feeling uncomfortable and helpless, argued that “traditional practices are not scientifically proven; they are just narrated and passed from generation to generation by word of mouth, not recorded anywhere”. This is a challenge for HEWs because their lack of knowledge is due to limited training and experience. Reflecting and attaching meaning to culture care, emic care, folk care and caring is defined as “culturally learned and transmitted lay (non-professional) care” (17). Such differences in cultural values, beliefs and practice result in HEWs imposing modern practices on individuals, families and rural communities are the result of lack of culture competence and maladaptation to cross-cultural practices found in a diverse transcultural society. In addition, other challenges are based on lack of empowerment, sustainability and integration. In every culture, both traditional practices and modern practices can be learned and used, because both offer sources of care(17). In this case, HEWs feel helpless, but (36) stated that if the desire for self-esteem and job satisfaction are developed, it is more likely to increase productivity, sustain activity and assist in goal attainment. It also increases creativity and service motivation.

The HEWs need orientation on culture competence to gain experience on the process of becoming (37,38,117), while at the same time learning to cope with similarities, differences, culture care universality and aspects of cultural and social structure(17), because caring refers to both humanistic and scientific care. For Malaria care to attain its goal, traditional practices should be integrate into the existing Malaria programme. The power source here is harmony and combining the two types of Malaria care and giving them equal weight in implementation. The challenges that affect the HEWs and community members’ activities and functions is embedded in the broader framework(36). The power source that has input into health service system is training and

the expected outcome of improved quality care, aimed at uplifting the standard of care rendered to poor rural communities.

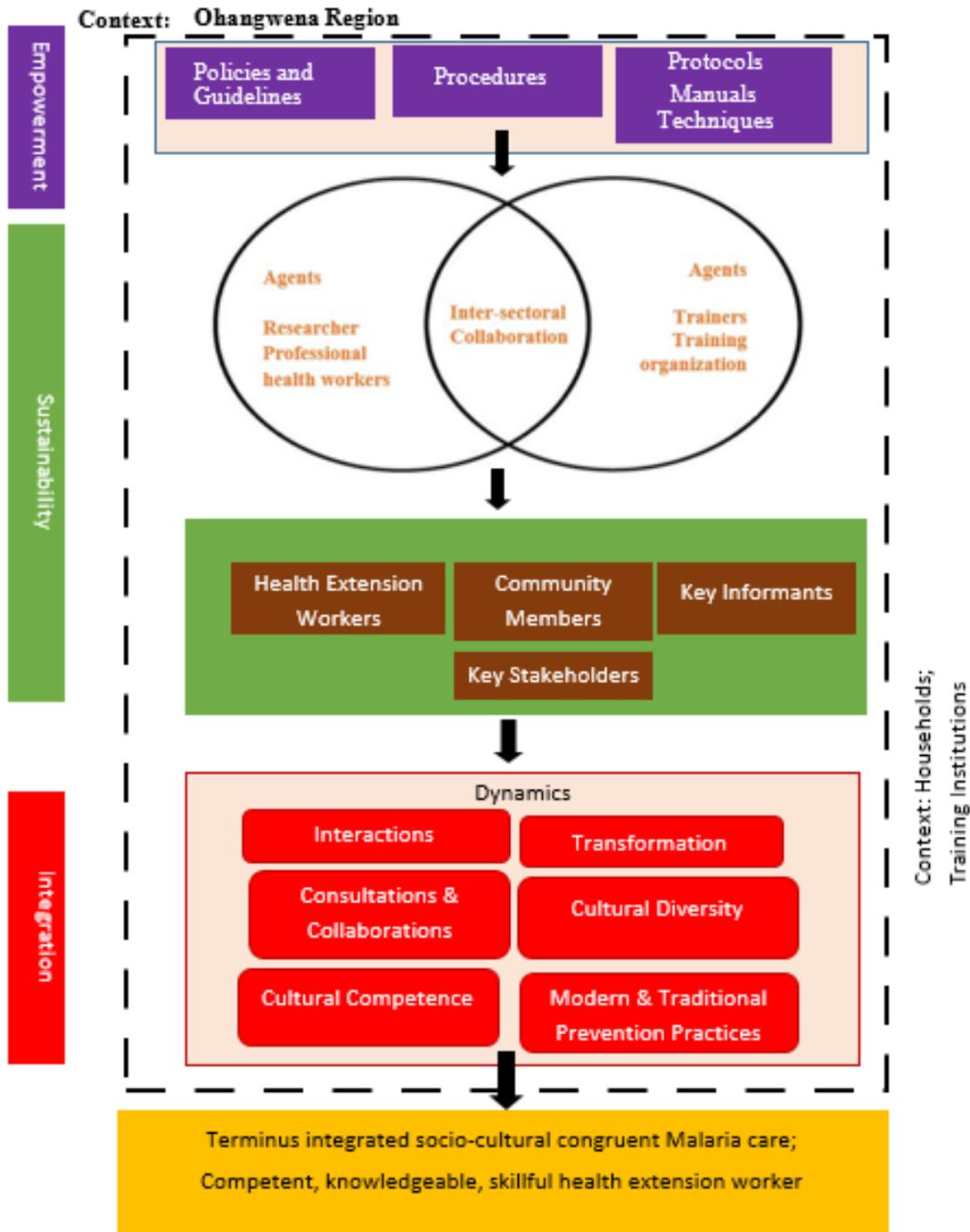


Figure 38: The aligning of the survey list, process for cultural competence and cultural diversity

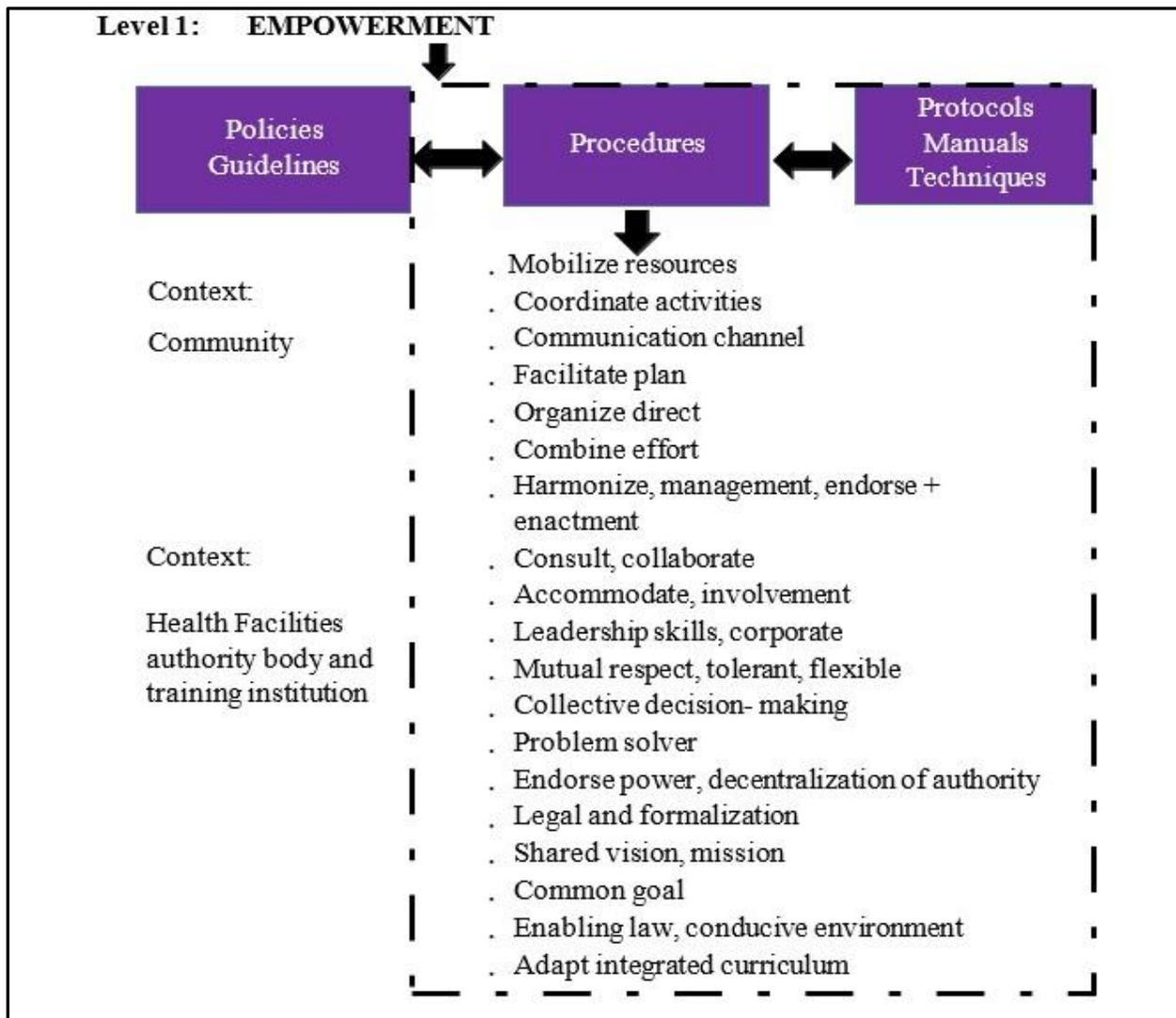


Figure 39: Facilitation of empowerment

### 5.7.5 The Procedure

Procedure describes the steps to be taken towards some accomplishment or the equipment, and conditions needed for conducting the activity, usually accompanied by written instructions. The procedure consists of printed steps that guide the researcher to develop a model that facilitates understanding and clarity during training. The procedure creates the mechanism needed for acceptance and use of both traditional and modern practices. As indicated in the literature,

procedure refers to “protocol, principles and rules governing the activity” (36). Empowerment is required in order to sustain integration of traditional practices into the existing health system on Malaria care in order to achieve holistic and comprehensive socio-cultural congruent care. The developed model is based on the three processes, namely empowerment, sustainability and integration. The results of this study reflect that traditional practices have contributed to the Malaria prevention and control in one way or another.

The procedure followed in this study was to empower HEWs with knowledge and skills on practice, culture competence, cross cultural and culture care diversity needed to gain experience and to adapt in order to serve the rural community. The model will provide patterns to demonstrate how empowerment can be used to provide sustainable and integrated care. The intended model will help the HEWs to get adequate knowledge and offer them the opportunity to gain the experience needed to identify areas and situations where it would be appropriate to use modern and traditional practices for holistic Malaria care, prevention and control at community level. Through coordination of resources and community mobilization the model will set the standard to measure and provide adequate information to enable sustainable integrated Malaria care. The model will clarify the functions of the researcher, trainers and HEWs as recipients and Ministry of Health and Non-governmental organization as beneficiaries. Empowerment, sustainability and integration processes involve all stakeholders and facilitate effective communication on how combining emic and etic care(17) is to be conducted to facilitate harmonization of comprehensive care. The Authority and Trainers in training organizations need to use a simple humanitarian approach in planning, organization, collaboration and sharing of the resources to create a favourable environment that accommodates re-patterning, negotiation and preservation of traditional practices while at the same time appreciating modern scientific practices. Malaria care

should focus on caring and curing; diagnosis and treatment(17) . HEWs need to be supportive in all situations, in health, illness and when death occurs, in order to alleviate suffering and improve human life.

#### **5.7.6 Terminus**

Terminus refers to aspects of activity that signify the end point or accomplishment of the activity (36). The terminus that the researcher is expecting to have in this case is competent HEWs. To achieve this, the researcher will try her level best to develop a training model that is simple and easy to interpret. This will be achieved through empowerment of the HEWs to become agents of change and receive relevant information from knowledgeable and skillful trainers.

However, HEWs should take “ownership of learning”(104). The support from the authority provides a legal framework and an enabling learning and working environment. This model will offer HEWs the opportunity to achieve the following: active participation, reflect on their learning and apply skills and ‘stop, observe and listen attentively’ before acting. The outcome expected will be HEWs with greater understanding of integrated Malaria care, retention of culture competence and problem-solving skills when faced with complex situations. Competent HEWs practice critical thinking, establish unity with the environment and harmonize traditional care and modern care practices(17) through reflecting, theorizing and applying(104) knowledge and skills created from the three theories. It is expected that training the HEWs on culture competence care and culture diversity will empower them to sustain integrated care and result in improved socio-culturally congruent, holistic and comprehensive Malaria care.

#### **5.8 Merging of Statement and Conceptual Framework**

The aim for merging the statement from central concepts and conceptual framework is to reveal how the reasoning map came into existence and how it is linked to the developed model for

empowerment to sustain integrated care. The reasoning map for this study is derived from the components of three theories, namely the practice oriented theory(36), culture competence theory(37) and theory of culture care diversity and universality by Leininger(17). From the practice oriented theory, the survey lists six components: agent, recipient, context, procedures, dynamics and terminus. These were discussed in association with the central concepts identified. It is not adequate to know practice without merging it with culture care. Thus the process of cultural competence and cultural diversity and universality was found to be beneficial if combined with components of the practice oriented theory to provide concrete experience for HEWs. There are five cultural constructs in the theory of culture competence, namely: awareness, knowledge, skill, encounter and desire (37,38). The researcher borrowed concepts from Leininger theory that were found suitable in the training of HEWs. Such concepts are: culture care, care expressions, culture preservations, maintenance, re-patterning, accommodation, negotiation, culturally congruent care, environmental context, cultural and social structure factors (17). The combination of components of the three theories are described and associated with the central concept identified, which is the link. Interrelatedness and interdependence of the components borrowed from the three theories and concepts facilitated the accomplishment and main goal of model development.

## **5.9 Intended Components for the Model Development**

The components intended for the development of the model were generated from the findings of the study, based on the objectives of the study, central concepts and combination of information from the three theories. The following four levels were followed during the process of model development.

Level 1: Empowerment: Trainers collaborate and consult with relevant authorities to enact integrated curriculum

- Level 2: Sustainability: Training of HEWs to sustain holistic and comprehensive care
- Level 3: Integration: Train HEWs to integrate traditional and modern practice to meet the unique needs of rural community
- Level 4: Maintain independent competent, knowledgeable and skillful HEWs who conserve integrated congruent sociocultural, holistic and comprehensive care.

### **5.9.1 Combination of the Components and Constructs of the Three Theories**

The model has components developed from combining components and constructs from three theories. The ideal here is to combine the content extracted from the theories with the study findings and central concepts derived for empowerment to sustain the integrated care model.

#### **Level 1: Trainers facilitate empowerment through collaborate and consult with relevant authorities to enact integrated curriculum**

Trainers collaborate and consult with relevant authorities to enact integrated curriculum used for training to empower HEWs and coordinate resources needed to render congruent holistic and comprehensive care. The trainers are custodians for the implementation process of the model because they play key role in training of HEWs. For training to take place it requires enactment by the authority, therefore a planning, management, coordination, collaboration and consultation process is needed. Learning and caring are influenced by the trainers and other external factors such as enabling environment, guidelines, policies, curriculum, infrastructures and other resources.

The availability of resources supports the role of the trainer in empowering the HEW.

#### **Level 2: Training of HEWs to sustain holistic and comprehensive care**

The training process should offer opportunities for HEWs to learn modern and cultural aspects of malaria prevention and treatment. Trainers should prepare HEWs to learn and understand the

cultural aspects and adapt to working among diverse communities as well as managing complexity. The rationale for deployment of HEWs in community service is to improve access and equity of health service that might help to improve the health standards and social welfare of the rural community. This can be done through planning and management of resources, collaboration and communication with other sectors to provide comprehensive Malaria care.

Trainers should provide holistic training that enhances pragmatic integration of care to improve Malaria control at community level. Teamwork and networking lead to effective working together and collaboration with the government that creates a safe and conducive environment, supported by job satisfaction and increased motivation to perform healthcare. Trainers develop new ways of thinking and acting on activities and strategies for Malaria prevention interventions. Thus, knowledge and skills transfer through information and sharing of ideas enhance HEWs Skill development and know-how to practice cultural care. See figure 45. below.

## Level 2: SUSTAINABILITY

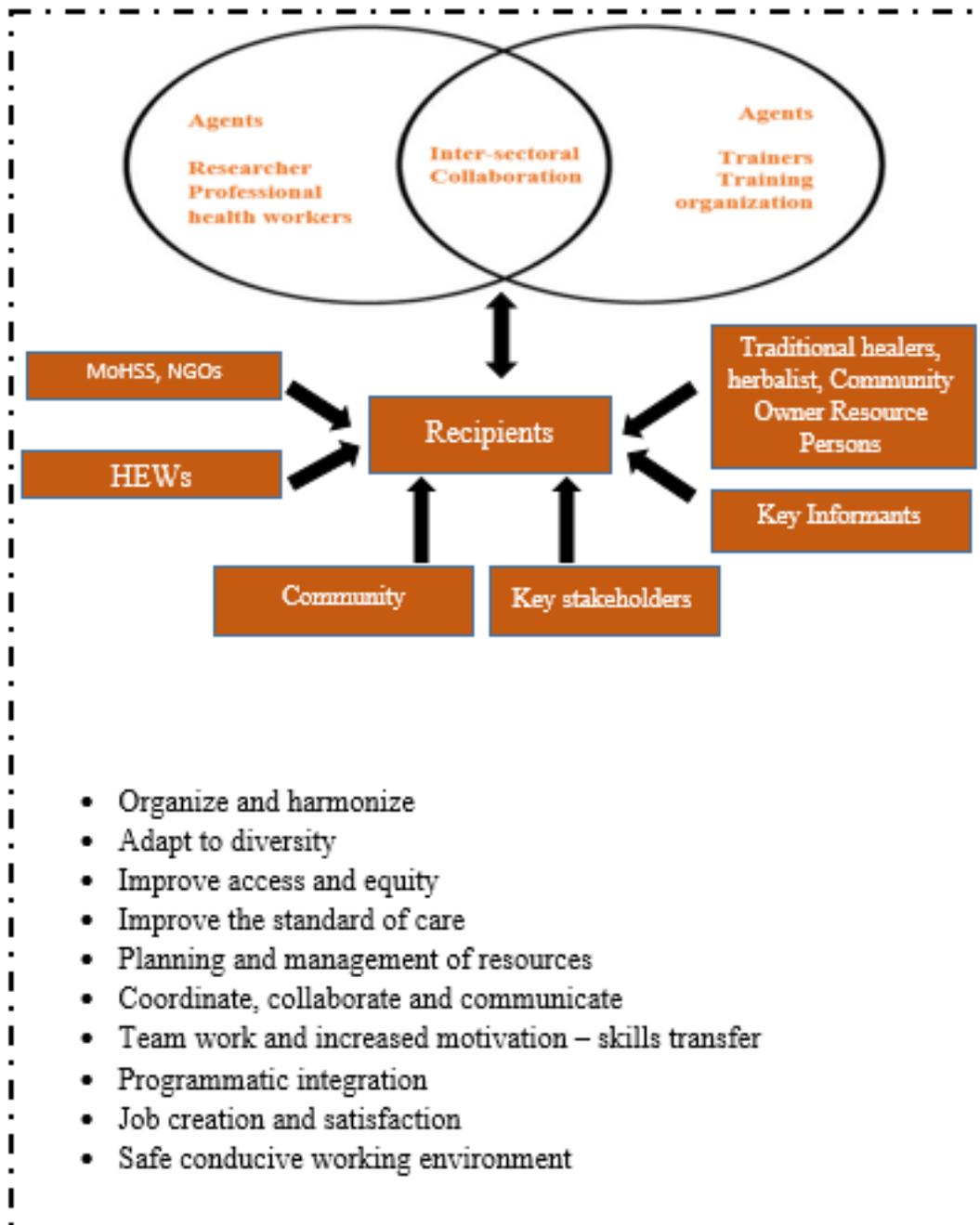
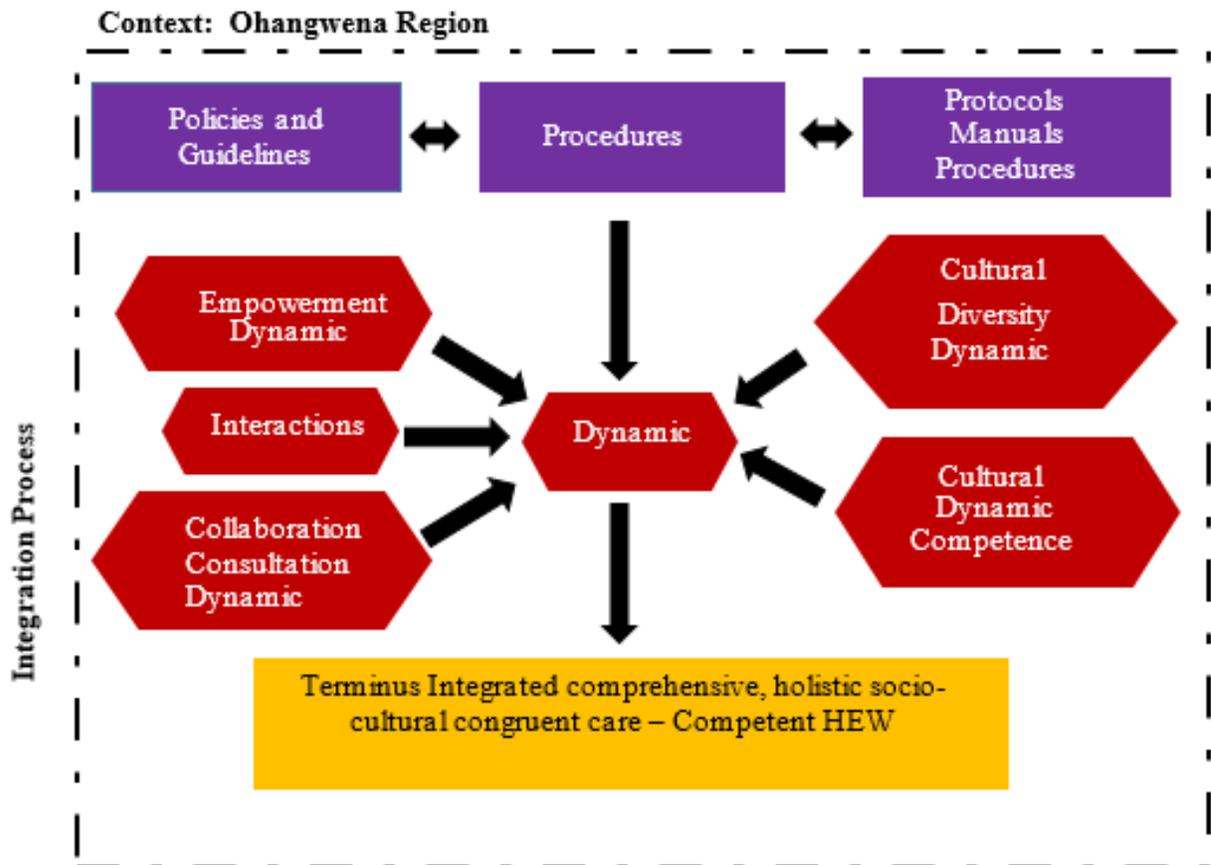


Figure 40: Training of Health Extension Workers to sustain holistic comprehensive Malaria care.

**Level 3: Train HEWs to integrate traditional and modern practice to meet the unique needs of rural community**

HEW requires awareness, knowledge, skill, encounter and desire to want to learn cultural aspects to attract active community involvement and to promote cooperation needed to uplift the care and interventions associated with Malaria prevention and control.



- Awareness, knowledge, skills encounter
- Desire coordinated action plan
- Consistent choice
- Communication – networking connectivity
- Influential decision making
- Positive governance – enabling environment
- Considerate, mutual respect – balance

Figure 41 The Integration process of Socio-Cultural Congruent Care

HEWs need to acquire the cultural awareness, knowledge and skills through attain sound education based on consistent encounter with community and interacting with different cultural groups. There is a need to understood and interpret community activities related to communication, values, practices and diet. With the assistance of cultural encounter the HEWs is safeguarded from bias and unintended cultural offenses that enhance to build trust and promote effective communication. Skills of folk care can be incorporated into care plan when HEWs experience and possess cultural awareness and sensitive. Through experiential learning HEWs will acknowledge culture care influencing decision making and stimulate critical thinking. Health care delivery without cultural competence would directly influence health outcome. Therefore is very crucial to provide safe and quality care. This involve treating individual with respect in order to achieve individual centered care and satisfactory service meet the health needs.

#### **Level 4      Maintain independent competent, knowledgeable and skillful HEW**

Maintain independent competent, knowledgeable and skillful HEWs that conserve integrated congruent sociocultural, holistic and comprehensive care. The HEWs need experience and feeling of belonging and power in order to develop and show growth, leadership, networking through connectivity to corporate with other sectors for the success of integrated care. The trainers should liaise with HEWs and coordinate action plan that indicate the following:

- What need to be done in the community?
- Who should be influenced to use integrated care?
- What need to be change?

The action plan need to be flexible, allowing local traditional practices to be used and facilitate the local flavors to enrich the experiences of HEWS on comprehensive and holistic congruent Malaria care.

With the support of Ministry of Health and Social Services, Ministry of Higher education, Training authority Organizations in collaboration with local stakeholders, the trainers will influence the lobby of donor funded organization for resources. However, care should be taken to create balance by making these organization aware about the indigenous knowledge and traditional practices so that when modern funded intervention introduced it should aligned in a way to incorporate the traditional practices. The integration will planned in a way that harmonizes modern and traditional practices to promote affordability, equity and access to universal comprehensive and holistic congruent integrated care, aim to prevent and eliminate local Malaria transmission.

The trainers should plan, manage, organize and coordinate all relevant resource to meet the training needs of HEWS, so that they render quality care that might led to improve standard of health of poor rural community.

There positive governance should be in place to create resilience, justice and motivate rural community to reduce poverty through community projects, development and education as well as creation job opportunities. The provision of care enhance improve social welfare and should planned to overcome challenges and shortcoming that impede achievement of health goals. In order to achieve integrated comprehensive care, practice, reflect and apply of HEWs should be holistic view and address of the following shortcoming and challenges:

- Lack of culture care and competence information in the training curriculum.
- Lack of documented information on local traditional practices
- Diverse traditional practices and diverse cultural background of HEWs.
- Devalue of traditional practices
- Lack of confidence among HEWs to advocate for traditional practice

- Lack of wide involvement (of traditional healers, Herbalist and other stakeholders).
- Lack of formal enactment for integration of traditional practices into the existing Malaria care.
- Increase gap and disproportion between need, access to and use of quality health care.
- Dependence on external funding sources.
- Imposed structural programme favoring modern practices despite high level poverty and economic crises.
- Lack of resources
- Low socio economic status of rural community
- Lack of inclusive policies, strategic plan and guidelines.
- Lack of development, infrastructure and low education among rural communities.
- Increased intra-regional geographical disparities in rural areas to compare to urban areas counterparts.
- Poorly maintained facilities aggravated by dipartites of long distances and lack of transport.
- Lack of employment
- Non alignment of external support with local practices, priorities led to sustainability challenges.
- Lack of integrating traditional practices and indigenous knowledge into existing and overall Malaria program and health system.
- Lack of projects assistance and non-sustainable after donor funds ceased.
- Lack of focus on providing comprehensive health services
- Lack of research that documents the experience of use and effectiveness, efficacy and efficiency of traditional practice that might attract donor to recognize the values needed to support integrated Malaria holistic care.

- Increased reliance on external funding lead to lack of contextualize and sustainable practices for Malaria care in the health system.
- Conflict of interest between resource allocation and financing organization.
- Limited decision making and lack of autonomy on the allocation of resource from the side of rural community.
- Lack of cultural right and accreditation of cultural knowledge.
- Lack of knowledge on intersectoral collaboration among stakeholders.
- Lack of wider and multi-stakeholder involvement weakening management and planning.
- Lack of ownership aggravated by ineffective governance of Malaria programme
- Poor coordination and segregation of Malaria intervention.
- Lack of mainstreaming and increases of separate fragmented intervention aligned with the interest of donors.
- Lack of harmonize and partnership of formal and informal sectors in Malaria care, prevention and control.

## **5.10 Summary**

The description of this model was breed from the findings of the study, central concepts combined with the framework developed to give clarity.

## CHAPTER SIX

### DESCRIPTION OF THE SOCIO-CULTURAL CONGRUENT MODEL

#### 6.1 Introduction

The construction of the sociocultural congruent Malaria care model was completed as indicated in previously in chapter five. As it was earlier indicated the construction of the model is aligned with concepts borrowed from the three existing theories and research finding and from concepts analysis process.

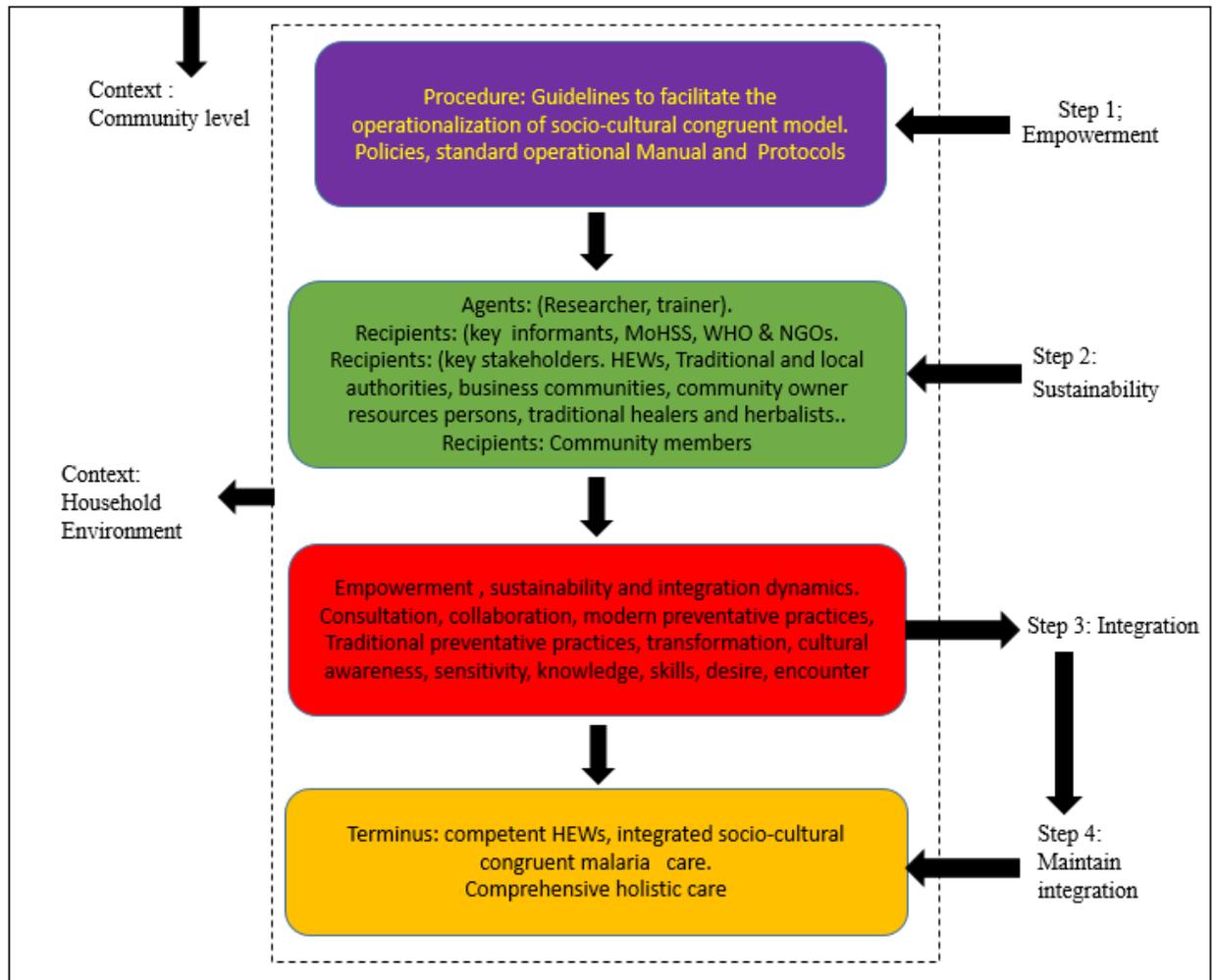


Figure 42: A model to facilitate empowerment to sustain integration of socio-cultural congruent Malaria care in the training of health extension workers in rural communities.

## **6.2 Description of the Model**

The process of designing this model is focus on empirical knowledge as reflected in literature. The six strategies guided the description of the model, namely, the purpose, concepts, definition used the relationships, the structure in this model(82) and statements(84). The model for this study is a schematically figure utilizing symbols and arrows and each component has represent meaning(84). The schema structure illustrate and influence the analysis of concepts, reexamining the current knowledge about practices on Malaria care and helps to facilitate formal integration of traditional practices in the existing Malaria programme. The overview of the model is depicted in figure 41 below Description and evaluation of the model Phase 3

### **6.2.1 The Purpose of the Model**

The purpose of this model is provide framework for trainers, authority bodies, nurses, doctors, HEWs and community members to facilitate empowerment to sustain integrated care that enhance the comprehensive and holistic care for Malaria. The suggested interventions for each level of the model aim to assist the trainers, authorities, NGO and HEWs to be goal focused and support the accomplishment of planned activities.

It is not easy task to create model but the importance of a model override this difficulties, hence the model is value oriented (82) as it has to a purpose to achieve a goal. The common goal for this model is to empower trainers to train HEWs in sustaining the integration of care so that they should render comprehensive and holistic Malaria care, prevention and control as well as treatment. The current practice is more focused on use of modern interventions, excluding the use

of traditional practices and make it difficult to achieve sociocultural congruent care among rural poor community. The use of western interventions and modern practices alone among poor rural community will not make the goal for elimination of Malaria. The purpose of the model plays a key role in context and situation, moreover, the process of model development in this study is driven by problem at hand and recent condition that fail to contextualize the Malaria care and aligned intervention to the needs of the rural community.

The context need to accommodate flexibility in care rendering and allow high degree of application(82,84), allow choice of individual care practice considering access, quality, affordability and equity in the current health care services. Hence the researcher recognize the need to create a model that focus on bridging the gap in Malaria care, so that guidance on transforming the training curriculum to incorporate traditional practices and culture care in the existing health care system. The model was developed to guide integration comprehensive holistic care that appreciate diversity of care, combining culture care and professional care(17).

The comprehensive holistic integrated sociocultural congruent care in Malaria prevent and control can achieved if traditional practice incorporated formally in the existing training curriculum and health care programme. Integration of holistic comprehensive care should be inclusive facilitating universal access and equity.

The execution of action plan and strategies should be in pragmatic view, accept enactment, formal documentation of traditional practices and make provision for universal access of legal written information on local available care for Malaria in all forms storing materials.

### **6.2.2 The Concepts**

The central concepts of this model are “empowerment, sustainability and integration”. The researcher found the three key concepts, empowerment, sustainability and integration are

important to the theory and sub concepts in supporting its components based on research findings(82) . The central concepts used in this model are useful and is practice oriented. The link and interrelatedness of concepts and sub concepts used in this study was identified to support the structure of the model and facilitating understanding and clarity (82). The sub concepts used in describing and construct structure of the model are: transformation, stakeholders' collaboration, coordination, planning, management, emic care, connectivity, combining, authority, consultation, policies, conducive environment, and development. Care was taken to examine and identify the phase where the concepts represented. It is required to conduct the close observation for emerging relationship and structures (82) and concepts within the model need to be tested for quantity and characters.

### **6.2.3 Definition of Concepts**

The concepts in this study for model development and supporting structure utilized the explicit and implicit to help explore widely of the concepts(81).The Central concepts and sub concepts were defined and merged(81,82) to provide understanding and meaning for the purpose it is used in this study. The central concepts defined are: empowerment, sustainability and integration. To start of, empowerment is defined in wide range of discipline in literature.

For the purpose of this study, empowerment is defined as a dynamic process that help people working together to gain control of their own lives during health, illness and dying, by trying at the level of their capability to empower themselves, enable critical thinking and problem solving responsive to their needs. Decentralization of power to trainers, community owner resource person, HEW and community members to express the power in the interest of their own health, development and firm resilient assertiveness. The fundamental for empowerment is conducive environment promoted by good governance. Conducive environment for teaching and learning

requires enactment of training and promotion of transformation of curriculum to meet the needs of trainers and HEW so that the knowledge and skills acquired empower the health provider to offer quality care responsive to the health demands of the community served. Trainers as agents for change use their expertise to facilitate imparting of knowledge and skills through experiences gained from traditional care and modern care. Improved education for HEWs about cultural competence, cross culture care, universality and diversity to create opportunities to foster empowerment in care, prevention and control of malaria.

Empowerment lead to sustainability and it play a key role in protecting the environment. Sustainability promote lifelong learning and development. Sustainable development is one of the global goal and it is observed in all aspect of the environment, from cleanliness, safe water and improvement in environmental contamination. We are fighting to obtain free Malaria environment, however, we are not careful when doing health education of weeding and handling of worn out nets. We need to keep sustainable plants and herbs, employ selective weeding that assist to promote the preserve of tumbleweeds, promote home gardening of chili for consumption, commercial and use it as mosquito repellent.

Some other traditional practices that need to be sustained is use of bran as a mosquito repellent, product for feeding animals and used to brew traditional drinks. The integration of care and curriculum has many benefits that will contribute to improved health, promotes income-generating source using local resources, poverty reduction Malaria care, prevention and control. Transformed curriculum makes it possible integration of traditional care in social research that in return influence the initial documentation of traditional information available to local Health providers and international donors.

Wide involvement and inclusive participation is needed for sharing of knowledge and skill transfer to promote sustainable local practices and indigenous knowledge. Sustainability does not only helping to promote autonomy and ownership, but also to maintain the activities and strategies for care of Malaria. Sustainability of home care to assess coping with malaria transport fees, educating and advocating persistent and consistent use of local traditional practices to promotes resource mobilization across continuum of care, services for referral network, provision of comprehensive policies and guidelines for clinical management and social support. This assist to sustain care with education and integrated prevention strategies.

Integration is defined in this study is defined as pooling of resources together for effective use in limited resource setting to produce a better and desired outcome. The trainers are in good position to harmonizing, planning, organizing and coordinating resources, supervises how the HEWs conduct interventions related to Malaria care among rural community. It is role of trainers to interact with stakeholders in develop strategic plan, aligned it with the needs of the involved community. The agent in this case the researcher, facilitate collaborate with training organizations, Ministries involved in education of HEWS and health of community members to conduct research to promote integration of modern and traditional practices.

However, there is a need for positive governance that provide policies, guidelines and endorse strategic plan to allow productive performance. The integration is likely to success if resources are evenly distributed, connectivity through effective communication and active community involvement in collective decision-making.

Integration of comprehensive and holistic training empower HEW to render quality care. The combine education help the HEW acquire experiential learning enrich blended learning connected to the available resources. Exposure to class integrated knowledge will support creativity when

new learning opportunity presents to HEW. Care embrace culture through encounter, HEW develop cultural knowledge, skills, awareness and sensitivity to others. It is the integration that help them to develop desire to learn traditional practices and recognized relevance for advocating traditional practices during practical placement. Leadership skills promote multi-disciplinary and promote teamwork lead to achieve of intended goal.

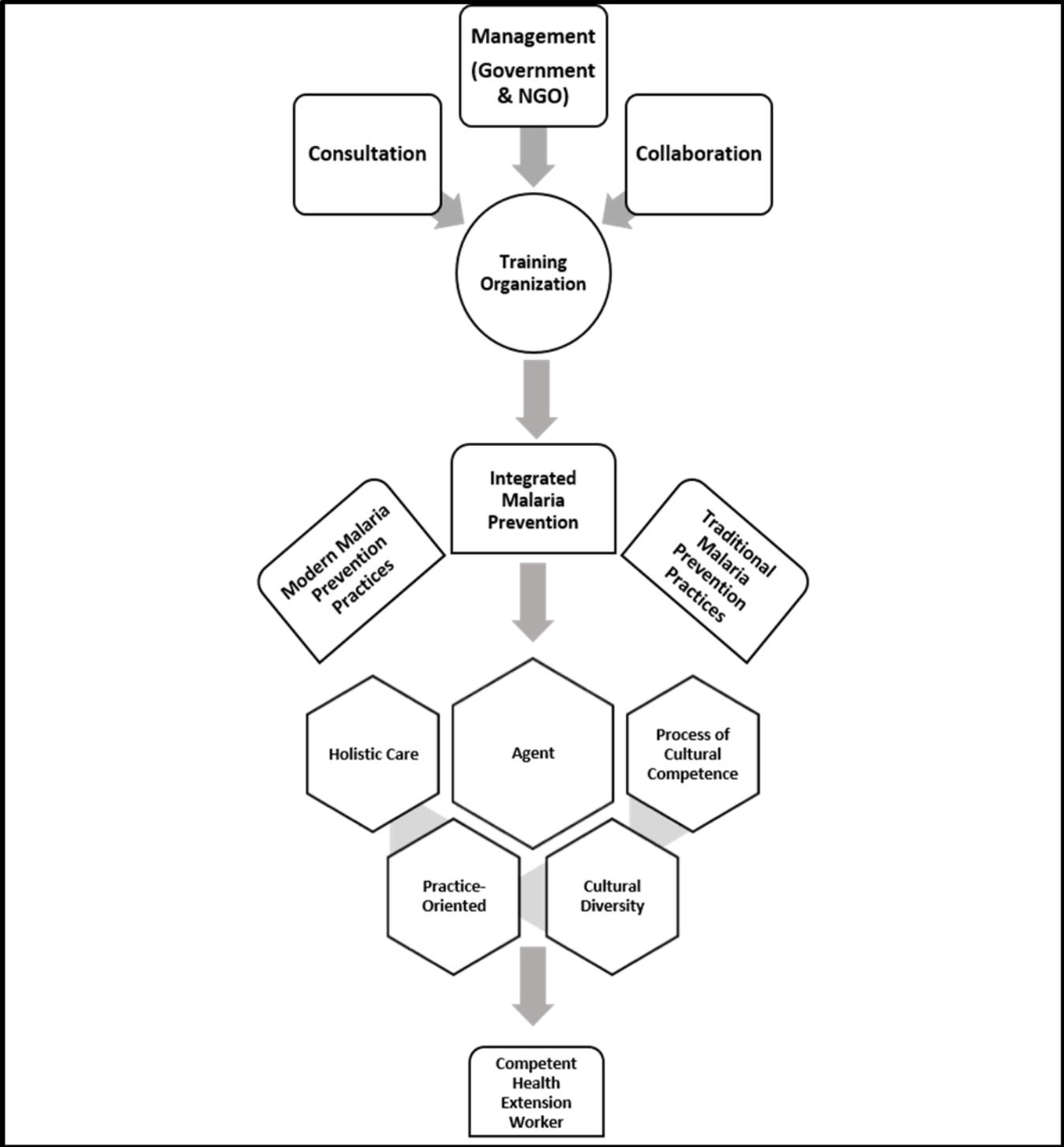


Figure 43: integrated Malaria holistic care

**Transformation** in this study refers to people centered health system, focus on client-provider relationship that promote individual unique care, affordable and effective quality health service.

Reform and reorientation of health services and training curriculum to fit community health needs. Transformation requires competency, proactive, innovation, creativity and coordination of health services. The comprehensive holistic care necessitate the platform to consolidate action plan and strategies to improve community health while reducing gap in equity, access and inequalities in health care system. Strategic plan has potential to accelerate health outcome. The outcome should transparent if there is effective leadership and effective communication focus on people The transforming is sustained through enabling environment, availability of supportive and committed government providing health policies and guidelines. Not only that transformation is multifaceted and dynamic process but other factors need to be considered, such as supervision on resources allocation, including management money, intersectoral collaboration, accountability, interaction with community and other stakeholders and contextualize according economy, development and cultural beliefs, practice, care values and norms.

**Stakeholders** refers to all partners who actively involved in the facilitation of empowerment to sustain integration of comprehensive and holistic care. Consultation is pre requisite for harmonizing interest of stakeholder to achieve a desired outcome.

**Collaboration** is the arrangement done between agents and recipient of care to facilitate planning, management, supervision and coordination of interventions that spearhead collective decision and team work to achieve integrated comprehensive holistic care.

**Emic** care this type care focus on humanistic and utilize the practical experience that are transmitted lay and skill transfer by cultural learning during social interaction.

This care is based in home environment and uses folk remedies. The key features is preservation of indigenous knowledge and skills used by cultures.

#### **6.2.4 The Nature of Relationship**

During model development some relatedness was merged and such link was emphasized in the literature(82,84). According to (82) relationships are referred as the linkage among and between concepts. The following linkages are emerged from central concepts and sub concepts used as constructs of the model.

- Trainers collaborate and consult with relevant authorities to enact integrated curriculum used for training to empower HEW and coordinate resource needed to render congruent holistic and comprehensive care.
- Empower community members to have control over their own health, lifestyle and choice of care that is affordable and accessible to them at their disposal. .
- Integrated care that is reform and reorientation of health services and training to fit community health needs.
- Focus on client-provider relationship that promote individual unique care, affordable and effective quality health service.
- The HEW learns the diverse culture and strives to become, helps to narrow the gap of culture shock while establishing effective therapeutic relationship.
- Sustainability is about creating balance and develop link of interrelationship between the environment and its natural resources, preservation of indigenous knowledge, accrediting of competence of community skills and consider the economic status of the local people.
- Integration of Malaria care address the problem in holistic approach, whereby equally weight is accorded to both traditional and modern prevention practices, without favoring modern preventive practices while discriminating and devalue local natural resources and indigenous knowledge especially in limited resource settings.

- Use combining effort and process of mixing involving wide social networking and merge resources in the fight of Malaria transmission among the community.
- Integration is planned to join resources formal, harmonize traditional and modern practices by conducting collaborative research.

### **6.2.5 Structure of the Model**

The model is enclosed in a green square shaped structure to embrace the environment, a context where livelihood of agents, stakeholders, recipients take place. The green color is a symbol of life and energy, which is similar to the quality of life maintained through quality care. The power needed from health care providers to serve the client is a meaning of commitment and dedication. Green color enhance vision and self-control, and in health care system it is representing stability, growth, and promote harmony. Health care providers aimed to stabilize condition of acute ill patients as many a time it occurred in Malaria sick patients and it is the responsibility of the health care provide to see to it that the patient, families and community are in a safe environment, receive a good standard optimal care that promote healing in a rest full relaxation atmosphere.

The purple color represent the authority bodies such as government and NGO which formed vertical agreement. This color was assigned to represent the government and all authority bodies to indicate that they depend on the safe environment and suitability of natural resources.

The interaction between safe environment and human beings needs balance to promote empowerment, sustainability and integration of health care services. Health environment support health of human beings and nurturing the existence of all creatures.

For the government to pass law they need a space. The space in this study is represented by blue color. Blue is contextualize in this study as space providing areas where procedures are taking

place and its embedded policies, guidelines, protocols, operational manuals, strategic plan and action plan as indicated in the previous paragraph. The contextualization allows and promotes self-expression and freedom, sensitivity, intuition, knowledge expansion, inspiration, trust relationship and keeping balance in care.

The head quarter offices, health facilities, training institutions and households need to occupy a space, piece of land maintaining interaction between environment health activities and natural resources that supply chance for exploitation of natural resources for health benefits. The empowerment of HEWs is taking place in the environment where there is community engagement supported by political will and commitment towards primary health care. The agent, the role of the agent is to assist in contextualize the teaching to enhance understanding and creativity but the efforts from good governance is a requirement, revealed by the following all-inclusive features:

- Availability of public policy statement,
- Written health plan and strategic plan,
- Degree of equity in distribution of resources,
- The availability of decentralized organization for holistic care and management of integrated Health planning services.
- Mechanism for community participation
- Degree of intersectoral coordination in the region for the interest of individual, family and community
- Collaboration between government, NGO, training institutions, key stakeholders and community
- Improved health care coverage

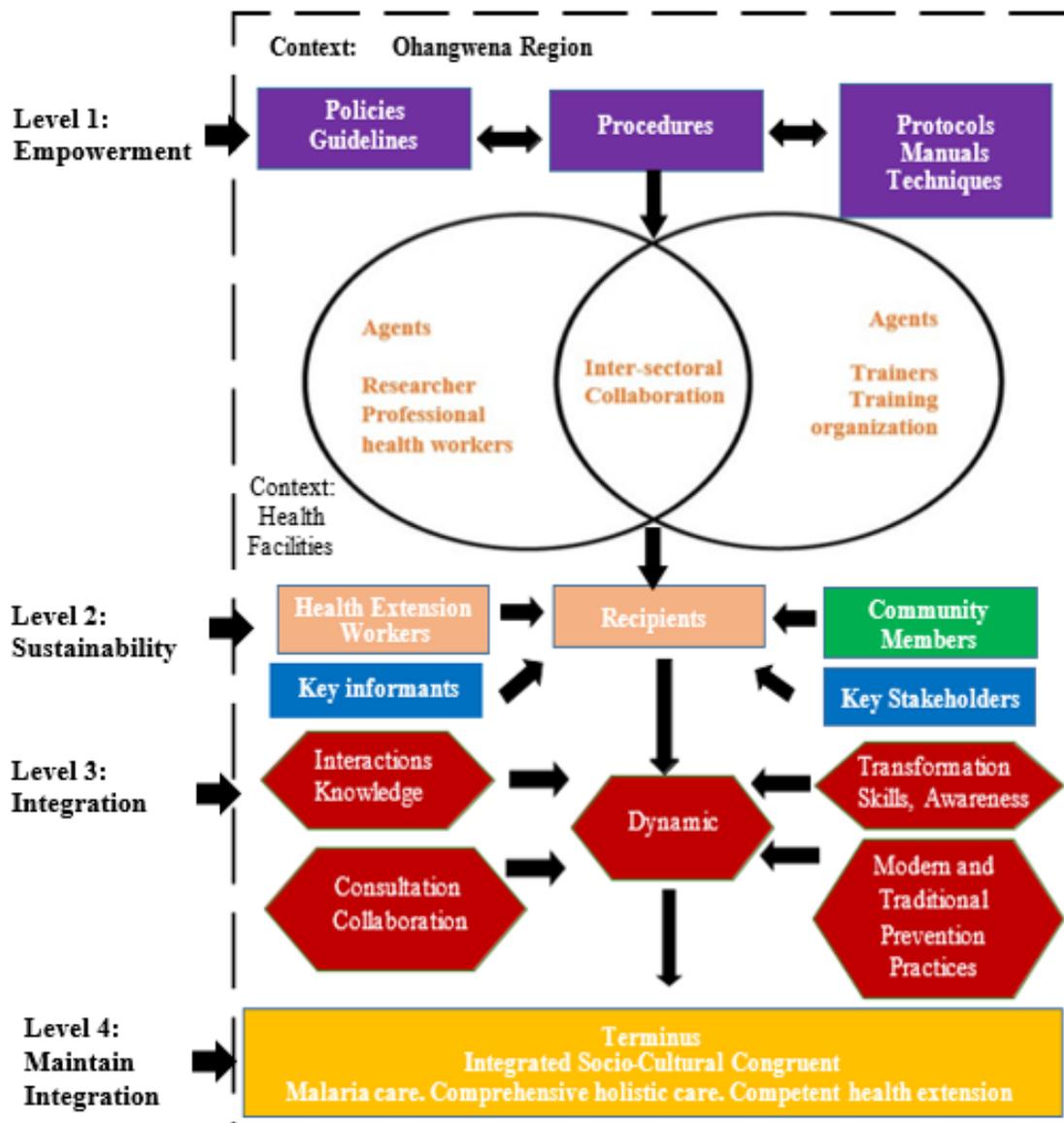


Figure 44: Phases used to construct model for empowerment to facilitate sustain integration socio-cultural congruent Malaria care.

The agent is responsible to sustain integration of holistic and comprehensive care that is socio-culturally and economically acceptable and affordable. Therefore, the agent is held accountable for training of HEWs to be competent in both modern and traditional healthcare. The colour orange in this study is for dual use and represents agents and recipients.

Considering the economic status and education of rural communities, as well as the pace at which infrastructures and development take place, all these factors have a negative impact on the health

status of individuals and families. This model is developed to help government and trainers to empower HEWs during training in order to enable them to render integrated congruent comprehensive care that is responsive to the needs of the community. Sufficient resources need to be allocated in order that Malaria congruent care can be sustainable in the long term and ongoing costs associated with on-going training and supervision can be catered for.

The agents (trainers, researcher, and professional health workers as represented by orange colour) are responsible for offering integrated information in theory and during clinical placement. They need enactment endorsed by legal authorities. HEWs are responsible for visiting individuals and families in their home environment for advice and emergency medical care where fever and minor ailments are detected. Such care is highly valued in the community. Integration of care requires wider involvement and strong community links with the existing structures such as local healers, and acknowledgement of their roles in Malaria prevention and care. Close links need to be maintained with other agencies like Ministry of basic education, local NGOs and community leaders as this provides opportunities for sharing knowledge and perceptions about Malaria. Community participation contributes valuable information on local traditional healers. Linkage to this resource galvanizes people to assist in collecting information on local remedies that alleviate fever and can be used as repellents to prevent mosquito bites. Competent and experienced agents are able to recognize barriers to universal coverage that might hinder access to modern healthcare services.

Therefore, advocating for integration of care will improve the health status of individuals, families and the community.

Public health services are designed from the donor and supply side in the current state of affairs in Namibia. LLIN is seen as the best preventative intervention despite the low socio-economic

status and poverty among rural community, which indicate that it may not meet the demand. There is a need for incorporation of traditional practices and HEWs, as health providers need to allow the patient to choose what they can afford that is readily available at their disposal. Many a time local herbs are available free of charge and the reality is that many patients are treated from home with local remedies. The expertise of agents should be utilized in planning and management for collaboration and partnership with local traditional healers and faith-based organizations and coordinating the activities for efficient and effective Malaria care.

Where possible, the Malaria treatment services should be close to the patients' homes with an appropriate referral system. Inter-sectorial collaboration promotes proper integration of care without competition among partners. Both horizontal and vertical programmes will be harmonized and resources will be evenly distributed without duplication. Combined efforts will uplift the quality of care and promote equity and make the cost of service more affordable. Integrated care prospers well in a therapeutic environment where there is effective communication and well disseminated and understood information on Malaria. Effective communication between HEWs and the community will build the trust and cooperation needed to improve health behavioral change and health-seeking behavior.

The dynamics are alerts to warn the health system on forces that require some form of action; therefore dynamics in this study is labelled in red. The challenges that affect the empowerment, sustainability and integration are influenced by environmental factors, be it social, cultural, economic, political, educational, technological or philosophical factors. The complexity of these factors hinders the delivery of care unless diverse practices are implemented. Diverse care practice focuses on integration to achieve comprehensive and holistic socio-culturally congruent care that

responds to the needs of individuals, families and communities in a diverse Health care environment.

There are multiple challenges that affect the integration of care. Such challenges include societal factors such as lack of preparation to construct flood control infrastructures in the environment, poverty and limited network coverage. All these challenges have a negative impact on the health status of rural communities.

There is a continuous and essential relationship between environment, health and human beings. The environment provides space for human beings to build health facilities, schools, shelters and infrastructure and to cultivate plants. It is also the same environment that accommodates natural resources that maintain the livelihood of human beings. Human beings and all types of living organisms, both fauna and flora, are sustained by the presence of the environment. Both internal and external environment play an important role in this study.

### **Colours used in the model components**

The colours used to denote different components of the model are used in health-related activities for various therapies and interventions to enhance mind and body health. In this model various colours were used and their use in relationship to this model is described below:

#### **Purple**

This colour represents the calm stability of culture and its assets. Culture is heritage and the community is proud to be royal noble citizens of such culture. In health, purple resembles power and ambition. It represents creativity, wisdom and dignity and thus promotes independent health consumers. Purple shows how integration of care uplifts the health standard of the community and how well-informed HEWs, who are sensitive to community culture, are beneficial to community beliefs, customs moral, values, care patterns and traditional practices.

## **Blue**

Healthcare setting and context rely on the environment to provide space. The blue in general represents sky and sea. The health environment supports the health of human beings and nurtures the existence of all creatures. Blue is used in this study to represent self-expression, freedom, sensitivity, intuition, knowledge expansion, inspiration, trust relationship and keeping balance in care. It is also linked to stability, wisdom and intelligence among health providers. Wisdom makes the health providers confident in creating a calm and relaxed atmosphere even in crisis situations, to overcome chaotic conditions. It is the trust and confidence that allows a flow of communication and maintains an atmosphere of trust and honesty during care.

## **Orange**

This colour builds confidence, energy, optimism, positivity, intellect and memory. It plays a role in muscle energy and increases mental activity, enhances memory and vision and encourages communication. It also provides relief from burnout. This colour bears all the features required for health care providers.

## **Gold**

This colour is related to characters of the colour brown and yellow. It is associated with passion, wisdom, wealth, prosperity, spark and glamour. It is believed to increase personal wisdom, power, health and wellness. It also creates success and illuminates the way towards an intended goal. It promotes accomplishment of high quality and excellent outcomes. This colour is fit for the purpose of the study because empowerment leads to sustainable care that is achieved by integrating modern and traditional care to obtain holistic and comprehensive congruent care.

**Green**

It is associated with life and energy. The green colour is associated with harmony, growth, safety and an environment that promotes a healthy lifestyle. It is also associated with healing power and promotes restful relaxation. It enhances vision, stability and self-control.

**Red**

Red is associated with desire, leadership, courage, vigour, willpower and danger. It represents assertiveness and determination. In many occasions, it symbolizes action, confidence and an ability to focus attention quickly. It influences people to make quick decisions. It is also utilized in health and disaster management occasions to indicate danger. In this study it fits well in all features of the model as Malaria outbreak is seen as a threat and public health concern in Ohangwena. Stop signs and traffic lights use the colour red to alert drivers to stop at an upcoming intersection. In health, a Red Cross is used to indicate presence and availability of health facilities. This colour represents the qualities of good listening skills, being observant, vigilant, keeping words to a minimum and learning through experiential skills by doing.

**Grey**

This colour is associated with balance, formality, conservative disposition and sophistication. It indicates smart intelligence and intellectual power as well as wisdom of senior citizens. This colour denotes the need for conservation and sustaining of traditional practices, preservation and respect towards cultural care and accreditation of indigenous knowledge.

**Black**

It is associated with formality, power, strength, authority, elegance and seriousness.

In the next discussion, the researcher will expand on the description of the four phases of the model to shed more clarity on the empowerment to facilitate sustainable integrated comprehensive holistic care model in Ohangwena health facilities and rural community.

**Phase 1: Trainers facilitating empowerment through collaboration and consultation with relevant authorities to enact integrated curriculum**

The trainers use experts to influence the enactment of integrated curriculum and its use in the training of HEWs. This helps to have formal procedures endorsed with policies, guidelines, protocols and standard operational manual that will facilitate integrated training to enhance the ability to render theoretical and practical skills to empower HEWs with knowledge on culture and modern care.

The agent will convince the authorities on the relationship between culture and modern care, focusing on the economic status of the rural communities, availability of local resources and the benefits of incorporating culture-based care in the existing curriculum and health system. Once this phase is attained, the HEWs will be empowered and this will reduce imposition of certain practices and increase flexibility in choice of practices for Malaria prevention and control. It also reduces dependence and increases accountability for individuals' own health within the society. The knowledge and skill acquired by the HEWs will help the rural community to develop ownership and take the lead in health activities. See figure

**Level 2: Training of HEWs to sustain comprehensive holistic care**

Sustainability is an integral component of primary health care. The Trainers use expertise and skill to collaborate with other stakeholders for teamwork and coordination of resources to achieve comprehensive holistic health care to sustain congruent sociocultural care among diverse

practices. There are many challenges in healthcare delivery in Namibia as a country including lack of supervision in healthcare due to shortage of resources in the health sector.

**Level 3: Training of HEWs to integrate traditional and modern practices to meet the unique needs of rural community**

The integration of care focuses on human diversity of norms, beliefs, values, language, practices and meaning attached to care and healing symbols. It enhances participatory democratic governance and respect for human dignity. If integration of care has to succeed, the focus should be on solidarity, ensuring equal opportunity to health care delivery and promotion of active engagement of the community in health-related issues. It requires innovation, creativity, transformation, teamwork, collective decision-making, personal choice and mutual understanding. Facilitating empowerment is the cornerstone for a sustainable integration care model to overcome the challenges of low self-esteem, confidence and subservience associated with inferiority complex among HEWs. HEWs have a choice to create change by utilizing the knowledge gained through experience. Open communication and acceptance of diversity are at the core of freedom of expression of views.

Tolerance shapes freedom of speech in the interest of community development. Flexibility and tolerance are based on the art of care and helping community members to make their own decisions-based on both traditional and professional care practices. This model will help the community to cope with healthcare needs. Creativity and innovation play a key role in integrated health congruent care as this notion is blended from philosophy of meaningful experience acquired through practice. The HEWs have a responsibility to work in conjunction with all stakeholders and community to facilitate active participation in health related matters. As indicated earlier, skills and understanding alert a health provider to listen, stop to observe the practice of culture of

the community in need and learn their culture, while at the same time developing culture awareness, knowledge and sensitivity(36). It is the cultural encounter and desire that make HEWs sensitive (37) to notice the inconsistency in rendering of care, and this art helps the healthcare provider to appreciate preservation and conservation of life and to offer unique individualized care in a holistic way. The integration of care promotes wholeness and maintains the integrity of social and cultural aspects, while motivating HEWs to admire the cascade of culture care diversity and universality(17).

**Level 4: Maintain independent competent, knowledgeable and skillful HEWs that conserve integrated congruent sociocultural, holistic and comprehensive care.**

The empowerment to sustain integrated care is not performed in isolation; it interacts with the environment where both health facilities and households for communities occur and influence care practices and approaches. The main goal for the model is to generate an outcome that satisfies the health needs of the poor rural community, which is integrated comprehensive holistic care.

Integrated comprehensive holistic care is socially and culturally sensitive and offers confidence to HEWs to render quality congruent care. Integrated comprehensive holistic care, in practical terms, shapes the skills of the HEWs to enable them to recognize the disease process that led to the outcome of competence. It enables them to:

- Render comprehensive holistic care as an independent health care provider.
- Use therapeutic communication and interact with community members with confidence.
- Assist the community members to make informed decisions about their health.
- Advocate for equity and access to congruent care based on culture competence in the midst of cultural diversity.

- Allow collective decision-making and flexible choices in readily available care without compromising community rights.
- Promote empowerment of community members by educating them to take up social roles that enable growth and development to maintain sustainable integrated care.
- Promote active community engagement, accountability and ownership with regard to congruent care.

This goal is obtained through communication. Because of mutual understanding, interaction between agent and recipients builds a trust relationship that is conducive for sharing of ideas and expressing concerns, which helps to facilitate collaborative goal setting. The trainers are expected to help the HEWs to achieve this goal and encourage them to accept shared responsibility for social development. It is their responsibility to train community members on skills associated with projects that reduce poverty, such as income generating activities that may lead to improved health and wellbeing as stipulated in Sustainable development goals. Collective effort to fight Malaria, through early detection of symptoms and change in the mindset of community members to improve on health seeking behaviors will help to halt and reverse the incidence of Malaria and its complications. The HEWs use their expertise to establish partnership and cooperate with traditional leaders and people responsible for resource allocation to provide the resources needed to improve infrastructure.

### **6.2.6 The Assumptions**

The researcher at this point is exploring the assumptions further(82) .The assumptions used are based on value and refer to what is right and good for combining care among the rural community. Despite the progress made in the health setting to prevent Malaria, a lot needs to be done to meet the health needs of poor rural communities. It is a fact that care is culture driven, thus

comprehensive holistic care is influenced by culture, norms, beliefs, values, practices, patterns and meaning as well as language. When it comes to improving healthcare service, it is important to integrate cultural competence constructs in the training of HEWs. The empowerment of HEWs will be sustained if the training curriculum will be transformed into an integrated course, enriched with information based on culture care diversity and universality as it was explained in the theory of Leininger in the Sunrise Enabler model. In the following discussion the researcher will reveal how the two theories complement each other to guide and strengthen the model proposed in this study.

#### **6.2.7 The process of cultural competence and culture care diversity and universality theory**

These two theoretical frameworks are combined to guide the researcher in developing a model that will help to address the value of empowering the HEWs and rural community by educating and creating awareness on Malaria prevention using an integrated comprehensive holistic care approach.

In the culturally competent model, the focus is on interrelatedness and care is viewed as whole when health care providers render care to their clients. These clients are unique and need to be respected and accepted. Therefore, these theories are people-oriented in their approach to care.

Both models advocate for optimal care that responds positively to the social and cultural health needs of individuals, family and community. The goal for developing the empowerment for sustainable integration and comprehensive care based on knowledge, activities and decisions need to be sensitive and congruent with cultural beliefs and values while respecting the use of modern care based on accessibility affordability and quality of care.

Good quality of care is achievable through integration, collaboration and coordination of healthcare activities that are performed based on planning, management, supervision, implementation and evaluation.

The assumption of the researcher is that competent Health Extension workers will be able to render comprehensive holistic care once empowered with education that allows creativity, critical thinking and problem solving. The experience will help the HEWs to incorporate traditional care and professional care in response to the health needs of the community and allow choice in selecting care without imposing their own culture while neglecting the client and offer the different ways of rendering care to clients in diverse cultural settings. The HEWs, as healthcare providers working in diverse cultures and contexts, need to understand that they are “becoming culturally competent rather than being”(37,38). This will help them to provide support and assess the health needs of the client in a meaningful way.

The researcher assumed that healthcare services need a conducive environment, to enable healthcare workers to uplift the standard of living and the quality of care by increasing knowledge and satisfaction for both parties involved. The enabling environment guides the action plan and strategies and paves the way for goal attainment. In this study, integrated holistic care is provided by competent health care providers. The context where care is provided needs to be safe and secured. The health facilities and home environment are the context where care is being provided and interaction needs to be friendly, supportive, accommodative, tolerant and flexible. With these features, the trust relationship plays a key role in helping HEWs to deal with similarities and differences among clients. The goal is to explore the possibility of offering integrated care among diverse cultures without discriminating against any client based on differences of culture(17,37,38). Comprehensive holistic care is influenced by many factors and the interaction

of these factors can be of mutual benefit as practices and expressions attached to the meaning of care crop up.

- The benefit can be knowledge of delivering meaningful culturally appropriate care within a diverse context;
- Comprehensive care that is situation-driven;
- Congruent care that preserves, maintains and re-patterns client care through negotiation and allowing clients decide on what best fits their needs;
- An environment that enables the reflection of shared information and networking for effective communication using appropriate technology;
- Appreciating inter-sectorial collaboration and resource mobilization;
- Recognition of potential barriers to effective holistic care and teaming up for amicable collective problem solving;
- Understanding clients' better and inviting active client engagement to increase responsibility and ownership of care.

### **6.3 Evaluation of the Model**

The evaluation process of this model was done by many experts. Since the inception of the development process, my two supervisors were involved in shaping every step. Their comments were valued and incorporated. The researcher consulted experts in model development and sought peer contributions during a seminar presentation at school level to help to give meaning to the proposed model. The detailed manual was sent to five experts with all its full description, the guidelines and evaluation criteria in a printout and electronic version of the model.

The researcher also to conduct face to face consultation with experts and peers for the final version. All the comments received were incorporated upon receiving individual feedback. According to (82) the model should be clear, simple, general, accessible and important. The next paragraph will briefly explain these criteria.

### **6.3.1 The clarity**

The clarity element of the model requires consistence in semantics and structure. The conceptualization of ideas used should be clearly understood and developed consistently. The connectedness should stand out prominently without ambiguous meaning for the readers and help the readers to identify the linkage of structures and meaning within the current model(82). The researcher used the components of the practice-oriented theory, the construct of the cultural competence theory and the concepts from the culture care diversity and universality theory.

### **6.3.2 The simplicity of the model**

Simplicity counteracts overcrowding of the model with complex structure and an overwhelming concept. What is being recommended is to keep a minimal description in a mode(82). This model of empowerment to facilitate sustainable integrated holistic care has a few descriptions but its relationships are simplified in presenting it in diagrammatic presentation.

### **6.3.3 The generality of the model**

The model is general as it can modified and contextualized to be used in any rural community with diverse culture who are in need of integrated holistic care. For the purpose of this study the proposed model is limited to the scope of the objectives of this study. The providers of care are

HEWs and this cadre will benefit equally if the integrated care is used appropriately in the interest of clients. What is needed is flexibility, conceptualization and creativity in problem-solving of healthcare needs of unique individuals, family and clients in need of care. This model has full potential to offer universal healthcare (82) coverage in diverse settings.

#### **6.3.4 The accessibility**

The model is practically-driven and action-oriented. It is empirically accessible and committed to transforming the theoretical knowledge into practice, thus helping to integrate the theory into practice. It is based on hands-on experience and evidence-oriented. As stated by(82) the concept should allow exploration of its ideas and provide an opportunity for understanding. In this case, integration of care is relevant and will significantly improve comprehensive holistic clinical care in both settings.

#### **6.3.5 The importance**

Integration of comprehensive holistic care will have significant impact on the life of a client as it allows flexibility and is pragmatic in the sense that it allows choice in the use of what a client can afford and find acceptable. It focuses on wholeness and unity, while promoting capacity building and use of local resources.

### **6.4 Summary**

This chapter focused on description of the model and its development. A detailed discussion on its purpose, concepts, definitions, relationship, structure and assumptions was provided.

For guidance and framework support, the four guidelines were described in conjunction with the criteria as stipulated in the critical reflection of theory.

## CHAPTER SEVEN

### GUIDELINES FOR THE IMPLEMENTATION OF THE SOCIO-CULTURAL CONGRUENT MODEL

#### 7.1. Introduction

The model is supported by the formulation of guidelines to facilitate the simplicity of the structure and directives that support trainers to impart relevant information to HEWs during training. The objective of this study was taken into account during the selection process of the guidelines, activities and strategies. The guidelines address problems related to hindrances in combining traditional practices with modern malaria prevention practice through HEWs who are equipped with good communication skills, suitable for delivering of health care services to rural community members. For an effective implementation of the socio-cultural congruent model of malaria care, an operational guidelines was developed to facilitate the execution of the model. The activities were conducted in three phases as described below.

- Level 1: Trainers collaborate and consult with relevant authorities to enact integration of curriculum.
- Level 2: training of Health extension workers to sustain integrated holistic and comprehensive Malaria care.
- Level 3: Train health extension workers on integrating traditional and modern practices to meet unique needs of rural communities

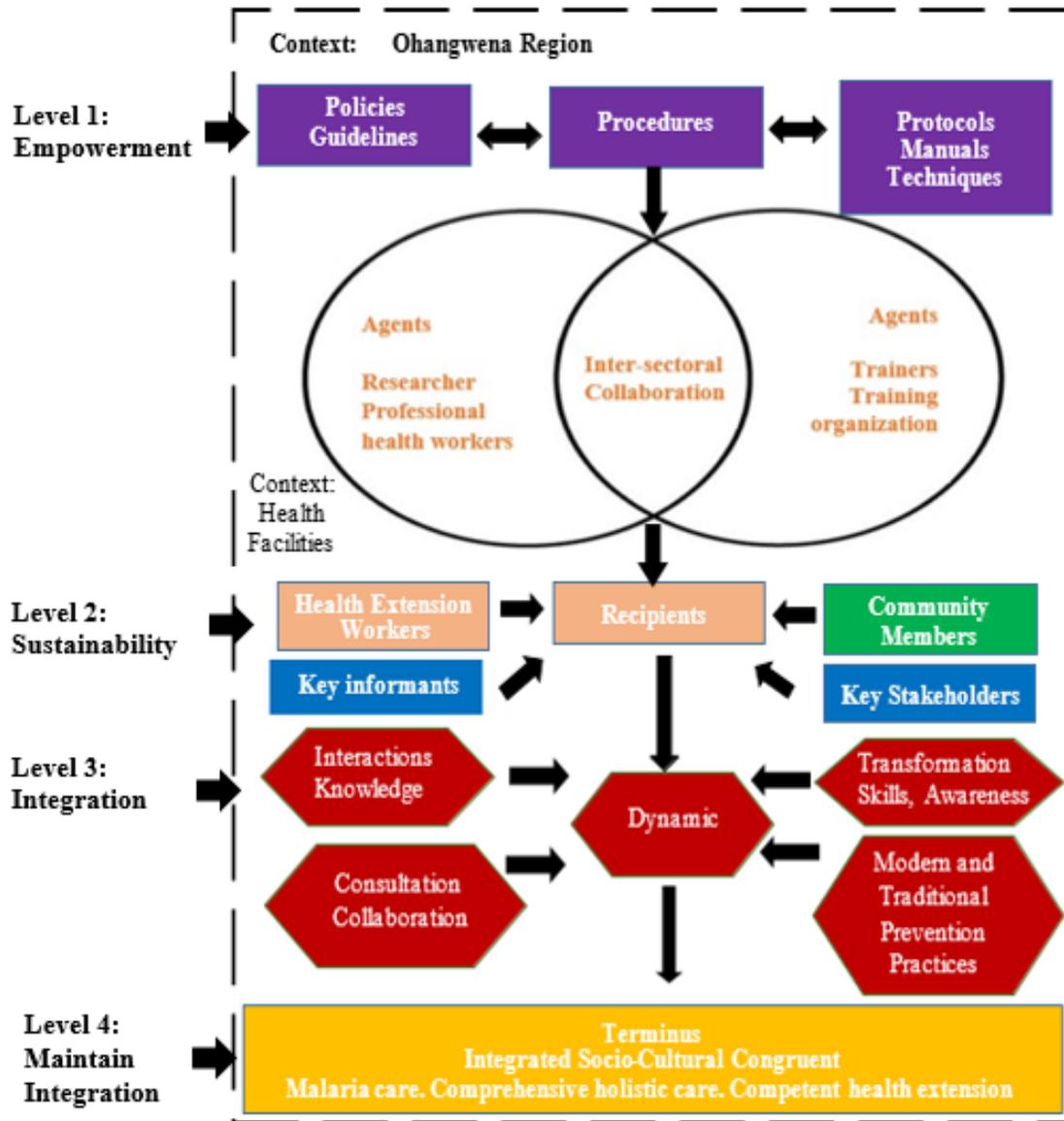


Figure 45: A model to facilitate socio-cultural congruent Malaria care in training of health extension workers

## **7.2 Guidelines for the facilitation of socio-cultural congruent care among rural community.**

### **Level 1: Trainers collaborate and consult with relevant authorities to enact integration of curriculum.**

Empowerment is a continuous process that is sustained through need assessment in order to promote health through human health potential. It is the responsibility of the agent to train and educate HEWs and communities to get knowledge and skills to empower them to manage their own health. For this reason, health promotion is sustained based on community needs and is driven by health reform, collective health needs and public health policies focusing on integration of healthcare. The energy and motivation necessary for change lies within the clients rather than in the health care system. However, clients need to be empowered to sustain this energy and motivated to use integrated approaches to achieve health goals. The following discussion will deliberate on the strategies needed to support activities to make empowerment to sustain integrated congruent care real. The central concepts used in this model are interrelated and there is a degree of interaction, however there is a need to discuss the activities separately.

For an effective implementation of this guidelines, an operationalised mode was established to facilitate the smooth execution of the model. The process is guided by activities and were carried in three phases as it described below:

#### **7.2.1 Strategies and activities to Establish Empowerment of trainers (agents).**

- Enabling environment, Planning, coordinate, advocate organize, collaborate leadership.

### **7.2.1.1 Activities for trainers to facilitate empowerment through collaboration and consultation**

- Train the trainers to become acquainted with the model.
- Ensure training manual resources are available.
- Handing over the model and its guidelines to the trainers.
- Advocate for policies, protocols and standard operational manuals of care are formulated in fashion of integrated curriculum.
- Ensure national policies, protocols and standard care are available at training centre.
- Trainers to identify all agencies involved for consultation to communicate the need for integrating socio-cultural congruent care in the training curriculum.
- Planning for action to achieve partnership with government and non-governmental organizations to collaborate and coordinate training that support integrating of socio-cultural congruent Malaria care.
- Tailoring training towards shared vision and mission.
- Establishment of malaria steering committee at all levels for consultation and active involvement of all agencies.
- Ensure that clear interpretation of policy statement are available to all parts involved.
- Ensure that the train centre have clear and smart objectives on the training policy to articulate its goal.
- Make use of integrated curriculum to train Hews in the malaria prevention and promote of Health through strengthen the health education interventions.
- Establish institutions and community relationship in reference to collaboration.
- Ensure multi-sectoral approach to Malaria health care programmes planning implementation, monitoring and evaluation.

- Negotiate with policy makers to enact traditional practices to be incorporated in current curriculum in written form,
- Link and make copies available to donors to advocate for local practices used in health programmes to prevent malaria;
- Lobby for resources and support for reform current health policies to promote harmonization of disparities and separate Malaria horizontal and vertical care approaches;
- Provision of teaching and learning activities that enhance mutual understanding and trust of traditional Malaria Prevention;
- Consultation to solicit the views of all involved stakeholders for collective decision making;
- Respect for wider involvement to obtain views of traditional healers and herbalists;
- Create a non-dictator and non-directive setting to invite individuals, families, and the community to share and explore feelings regarding Malaria prevention and control;
- Develop and transform the training curriculum to enable HEWs to reflect on integrated knowledge and skills that accommodate both traditional and modern practices.
- Conduct research and disseminate findings to development partners, NGOs', social medias, key stakeholders and communities to keep them informed about the new development, this help to advocate for their support.
- Create a platform for information sharing with local, national and international partners
- Create social media groups to facilitate networking of information sharing by selecting a focal representative key speakers at each level.
- Assign roles of sectoral collaboration to the various ministries and NGOs, private sectors and business community to participate in support of integrated care information sharing.
- Develop strategies to motivate and inspire equal involvement in malaria care without gender biased and stigmatized perceptions.

- Conduct induction to trainers to maintain capacity building in use of integrated model of Malaria care.
- Train HEWs to apply critical thinking and problem solving that meet the community needs.

**Level 2: training of Health extension workers to sustain integrated holistic and comprehensive Malaria care.**

#### **7.2.1.2 Activities to Sustain Holistic and Comprehensive Care**

- Provide an environment that is conducive for self-development of HEWs and community.
- Create opportunities for active community participation in health-related programmes.
- Engage community members in healthcare decisions to promote a client- centered approach and ownership.
- Establish a mechanism to build traditional practices and manage collective resources to promote sustainable integrated Malaria care, prevention and control at community level.
- Supervise, harmonize and coordinate local resources through community-based committee responsible for health related problems that affect livelihood of people.
- Narrow the gap of inequality and inequity in health care.
- Increase awareness among suppliers and recipients of care of benefits of integrated care to reduce competition on the use of resource.
- Build partnerships with local and international private sector players to uplift the quality of care offered to the poor rural community.
- Advocate for budget allocation for continuous support to integrated curriculum to maintain socio-cultural congruent malaria.

- Improve focus of donors to accommodate funds supporting both traditional practices and general healthcare instead of selecting vertical care programme.
- Encourage the use of local traditional practices, promote equity and demonstrate efficiency by adopting cost effective actions targeted rural communities.
- Modify all human behaviour which influence Malaria transmission by social, cultural, economic and political factors.
- Train community members to change their behaviour that are linked to cultural coded pattern, such as interaction between human ,animal host and the environment to minimize host-agent interaction to take place, and reduce malaria transmission.
- Educate communities on the use of combination skills and methods to control Malaria transmission.
- Address the malaria problem in social, cultural, economic and political context to accomplish the fight of Malaria disease.
- Mandate appropriate malaria treatment and care that are grounded in histories and traditions of people, which are formed by cultural and sub cultural ethno medical norms of social group.
- Identify community needs to distribute resources equally so that unmet needs can be addressed that cause socio-economic depression complex that make it difficult for people at community level singling out malaria disease.
- Identify multiple socio-cultural and economic factors that make it difficult for people to singling out unmet needs and concern.
- Give clear messages during health education to make people understand why malaria should be selected for elimination rather than poverty, hunger or any other diseases.

- Identify multiple factors that takes away a good part of the motivation they might have for self-help in controlling and preventing Malaria.
- Identify the order of priority among community when educating rural people on malaria prevention and control.

**Level 3: Train health extension workers on integrating traditional and modern practices to meet unique needs of rural communities**

**7.2.1.3 Activities to integrate traditional practices formally into the existing Malaria programme in health care system at community level.**

- Create platforms to improve management and allocation of resources to support use of both traditional and modern approaches in Malaria prevention.
- Improve organization to make equal access to health care services where combined care option is adopted.
- Advocate for budget allocation for continuous support to integrated training to maintain socio-cultural congruent Malaria care.
- Establish partnership with people at grassroots, community based organization to attain support for improving health of the community and environment.
- Facilitate community involvement in planning and support collective decision making to promote ownership of the integrated training that promote sustainable development.
- Improve decentralization of power to increase willingness of community to participate in health activities of their own affordable services.
- Maintain capacity building by training all people on malaria prevention by conducting refresher course, workshop, seminars and one day symposia.
- Offer skill training and job opportunities to increase satisfaction and efficiency of recipients of care.

The following found relevant activities to maintain independent competent, knowledgeable and skillful HEW:

- Desire to assist individuals, families, and community in choosing prevention methods that are available and affordable without coercion.
- Educate recipients (community) to become aware of behaviours that increase well-being and protection.
- Supervision and involvement of trainers and PHC nurse managers in optimizing positive learning
- Make key message available to community family and individuals.
- Encourage effective community participation and support through community mobilization
- Make relevant information access and available to community, family and individuals via radio talks, symposia, meetings and social gatherings.
- Design leaflets, factsheets and booklets to educate people in local languages.
- Active involvement of practical attachment of HEWs to improve their clinical experience.
- Promote effective communication channel and enhance local empowerment to local contextual malaria programmes.
- Collaboration with traditional leaders, herbalists and healers to hear their perception on Malaria care, prevention and control, and provide malaria supporting information.

Create a forum to bring together people from all levels to build skills on effective information sharing, resource mobilization and mutual support.

The goal of empowerment is to sustain integrated care to enable poor rural community members to prosper in health. The improved social, economic and cultural aspect of rural community members and their livelihood depends on positive political commitment to health investment in order to facilitate visible development needed to improve the quality of life of individuals, families

and community through fair distribution of resources and equity. Empowerment influences sustainability that makes use of local resources. What is needed is to transform current practices to allow communities living in remote areas to enjoy the same benefits in sharing available resources and improve their standard of living. Lack of access to health facilities need to end. Political commitment to health should interact with socio-cultural aspects to satisfy the needs of the local community. It is high time for action to implement effective communication and networking and respect for cultural norms, beliefs, values, customs, that attach meaning to integrated holistic care. This model seeks balance between equity, social justice, integrated care and the conducive environment that maintain quality of life and adaptation to local health needs without discrimination.

### **7.3 Summary**

The guidelines for the facilitation of socio-cultural congruent malaria care training model via empowerment to achieve sustainable integrated care were developed and activities needed to achieve its operationalised process were provided.

## **CHAPTER EIGHT**

### **CONCLUSION, JUSTIFICATIONS, LIMITATIONS AND RECOMMENDATIONS OF THE STUDY**

#### **8 Introduction**

This chapter presents the findings, evaluation, justification, limitations and recommendations for the implementation of the socio-cultural malaria care model to be utilised to support agents/trainers during their training of HEWS. The conclusions and recommendations are based on the findings of the study. The evaluation was conducted to determine the feasibility of meeting the objectives for the study. The outcome for the study was to develop a congruent care model that supports socio-cultural traditional practices that contribute to new knowledge that will make an impact on malaria prevention and control by providing written information that is evidenced-based and backed up by science through research activities.

#### **8.1 Conclusions, Purpose and Objectives**

The purpose of this study was to construct, explore and explain the socio-cultural malaria care model that facilitates the rendering of socio-cultural congruent malaria care that requires HEWs who know and understand the beliefs, values, norms and traditional practices in order to cope with working with the rural community members in the prevention and control of Malaria. A grounded theory approach was utilized to generate findings, and both qualitative and quantitative data was gathered to obtain comprehensive information. A mixed method, convergent parallel design was employed in the collection of research data. A descriptive quantitative approach was utilized to assess the use of modern and traditional practices that help in the description of socio-culturally congruent Malaria care from the participants' points of views.

To obtain more clarity on the insight of participants, an exploratory qualitative approach was employed to gain descriptive data from participants in their own words, based on their lived experiences pertaining to their perceptions and understanding of real life malaria care in their daily life. This led to the point of summary of the four phases of the study, namely concept identification and analysis, construction of the relationship statements, describing of the model, development of guidelines for the implementation of the socio-culturally congruent Malaria care Training model.

### **8.1.2 Phase 1: Concept identification and analysis**

The central concepts identified for this study are consultation, collaboration and integration. The analysis of these concepts was explained in conjunction with the results of chapter four of this study. The usage and definition of the central concept was extracted from the three existing theories, literature and dictionaries.

### **8.1.3 Phase 2: Construction of relationship of statements**

The conceptual framework of this study was born from the use of three theories combined with the findings of this study. As depicted in chapter five, the analysis of central concepts paved the way for construction of a socio-culturally congruent Malaria care training model that will assist in facilitating holistic Malaria care, prevention and control rendered by a competent HEWS among rural community members in Ohangwena Region. The holistic Malaria care is aligned with a cultural competence process. “Cultural Competence is the process of becoming; not a state of being”(37) and it comprises of five constructs, namely cultural awareness, knowledge, skills, encounters and desire. (See figure 3). The theory enhances autonomy and ownership of care because the community is empowered to make decisions related to their care without any coercion. The researcher combined the above theory with theory of culture care diversity and universality.

This theory is enriched and crafted from a discipline with a body of knowledge and practices to attain and maintain the goal of culturally-congruent care for health and wellbeing(17). The theory stressed the importance of knowledge gained directly from experience, or from those who have learned from experience. Such knowledge is referred to as emic, meaning people centered(17). For the purpose of this study, the following constructs were used: care, culture, culture care, professional care, cultural and social structure factors, the environment context, world view, culturally-congruent care. These constructs are integrated into the study to promote the furtherance of understanding and knowledge on socio-cultural practices about malaria. The researcher used the components of Leininger's theory derived from the Sunrise Enabler. The cultural care delivery and universality is a holistic care approach that assists to link generic care and modern care(17). It was clear from the findings that participants feel uncertain and challenged about aligning traditional and modern Malaria prevention practices. They also experienced problems with sustaining development in their area, donor dependence creating a problem of non-sustainable use of treated mosquito nets, feeling helpless, experience of unemployment and poverty, the experience of limited development and low self-esteem in receiving health advice regarding local traditional practices that prevent and control Malaria at community level when there are limited resources. However, for integration to take place, the point of departure for community entry is consultations and collaborations with stakeholders. Therefore, the six survey list was borrowed from the practice-oriented theory to construct socio-culturally congruent Malaria care model that facilitates the outcome of a competent HEWs, able to provide holistic care to rural community members. The survey list is composed of agent, recipient, context, dynamics, procedure and terminus(36)

#### **8.1.4 Phase 3: Describing of the model**

The description of the model, its structures, process and evaluation is portrayed in chapter six. The process of model development was done as stipulated in literature (81).

For clarification purposes see figure 5.

#### **8.1.5 Phase 4 Evaluation of a model**

The evaluation and implementation of the model was based on the objectives. Mechanisms were developed to facilitate cultural competence and training skills tailored to cultural diversity. The guidelines were established to harmonize modern and traditional Malaria prevention for rural community members. The model will help the trainers to incorporate use of traditional Malaria prevention in the training with confidence to equip HEWs with knowledge and practical skills to cope with possible cultural shock and avoid forcing people to use nets despite non affordability and non-availability.

### **8.3 Limitations**

The socio-culturally congruent Malaria care model should not be used as a prescription but rather as a guide because of variations in traditional beliefs, norms, values, assets, local resources and diversity in natural plant resource distribution across rural areas. It is important to note that the meaning might change slightly because the data was transcribed and translated from English to Oshiwambo and vice versa. Some vernacular concepts have no English equivalent. Caution was exercised during sentence construction and care was taken by all means to try to keep meaning as close as possible to the original work. Six themes and their sub-themes were generated and interpreted.

## 8.4 Recommendations

The following organizations need to consider the following recommendations:

### **The Ministry of Health and Social Services**

- Improve on universal distribution of treated nets to improve understanding that every community member is vulnerable to Malaria transmission;
- Increase the numbers of HEWs deployed to rural areas to cut on traveling long distances which hamper service delivery and cause delays in on-time referral of patients;
- To improve on the current referral system of patients to ensure that patients reach health facilities on time;
- Improve on the reporting system between HEWs and health facilities to ensure equitable access to Malaria care and reduce severe and complicated Malaria;
- Utilize inter-sectorial collaboration with available nearest government transport vehicles to help HEWs to refer suspected Malaria cases on time;
- Establish community Health committee coordinator via regional health directorate and regional council to empower the community to take ownership in assisting early reporting and referral.
- Integrate wide range of traditional practices into the curriculum for the training of HEWs;
- Advocate for research collaboration on local traditional practices with social science and western modern care practices;
- Advocate for the strengthening of locally-available resources in Malaria prevention and training.

## **The Development partners and Non-governmental Organization Donors**

- The government needs to collaborate with donor-funded organizations to ensure balance in the use of indigenous knowledge when introducing methods for care and prevention of Malaria in limited resource settings.
- Advocate for sustainable development and income-generating activities to promote and prepare continued utilization of the preventive strategy; to make people aware that they need to take ownership when donor funded programmes cease;
- Advocate for equity and proper infra-structure in rural set up;
- Advocate for meetings at community level to consult and collaborate with stakeholders to discuss how to align traditional and modern practices in prevention strategies in order to prevent confusion and undermining of local knowledge.
- Establish donor-funded research to harmonize cultural care and modern malaria care.

## **Recommendations for Future Research**

- There is a need to have collaborative research so that traditional knowledge and indigenous skills related to Malaria care can be preserved.
- Conduct research to identify all local resources that are used to prevent and control malaria, so that these resources can be written for future use and evidence-based data can be provided to prevent loss of indigenous knowledge;
- Scientists need to test efficacy of all available plants and herbs to preserve the continuation of use;
- There is also need to develop methods of preservation of seasonal plants and herbs to always be available for community use.

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## ANNEXURE A: PERMISSION LETTER FROM MoHSS



### REPUBLIC OF NAMIBIA

#### *Ministry of Health and Social Services*

- Private Bag 13198  
Windhoek  
Namibia

Ministerial Building  
Harvey Street  
Windhoek

Tel: 061 – 203 2562  
Fax: 061 – 222558  
E-mail: [hnangombe@gmail.com](mailto:hnangombe@gmail.com)

#### OFFICE OF THE PERMANENT SECRETARY

Ref: 17/3/3 SU

Enquiries: Dr. H. Nangombe

Date: 06 July 2017

Ms. Selma I. Uushona  
University of Namibia  
PO Box 2149  
Oshakati  
Namibia

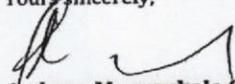
Dear Ms. Uushona

**Re: An investigation of the Socio-Cultural factors that influence the prevention of Malaria in Oshana region, Namibia: A Socio- Cultural Congruent Training model for Health Extension Workers**

1. Reference is made to your application to conduct the above-mentioned study.
2. The proposal has been evaluated and found to have merit.
3. **Kindly be informed that permission to conduct the study has been granted under the following conditions:**
  - 3.1 The data to be collected must only be used for academic purpose;
  - 3.2 No other data should be collected other than the data stated in the proposal;
  - 3.3 Stipulated ethical considerations in the protocol related to the protection of Human Subjects should be observed and adhered to, any violation thereof will lead to termination of the study at any stage;

- 3.4 A quarterly report to be submitted to the Ministry's Research Unit;
- 3.5 Preliminary findings to be submitted upon completion of the study;
- 3.6 Final report to be submitted upon completion of the study;
- 3.7 Separate permission should be sought from the Ministry for the publication of the findings.

Yours sincerely,

  
Andreas Mwoombola (Dr)  
Permanent Secretary



"Health for All"

# ANNEXURE B: PERMISSION LETTER FROM UNIVERSITY OF NAMIBIA

CENTRE FOR POSTGRADUATE STUDIES

University of Namibia, Private Bag 13301, Windhoek, Namibia -  
340 Mandume Ndemufayo Avenue, Pioneers Park  
☎ +264 61 206 3275/4662; Fax +264 61 206 3290; URL: <http://www.unam.edu.na>



## RESEARCH PERMISSION LETTER

Student Name: Selma I Uushona

Student number: 8901376

- Programme: PhD, Public Health

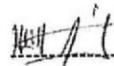
Approved research title: An investigation of the Socio-Cultural factors that influence the prevention of malaria in Ohangwena Region, Namibia: A Socio-Cultural Congruent Training Model for health extension workers

### TO WHOM IT MAY CONCERN

I hereby confirm that the above mentioned student is registered at the University of Namibia for the programme indicated. The proposed study met all the requirements as stipulated in the University guidelines and has been approved by the relevant committees.

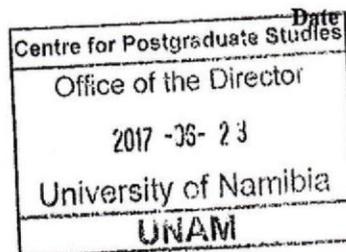
The proposal adheres to ethical principles as per attached Ethical Clearance Certificate. Permission is hereby granted to carry out the research as described in the approved proposal.

Best Regards

  
-----

Name: Dr Marius Hedimbi  
Director: Centre for Postgraduate Studies  
Tel: +264 61 2063275  
E-mail: [directorpgs@unam.na](mailto:directorpgs@unam.na)

23/06/17



**ANNEXURE C: PERMISSION LETTER FROM THE OHANGWENA REGIONAL DIRECTOR**



REPUBLIC OF NAMIBIA

9 - 0 / 0001

**MINISTRY OF HEALTH AND SOCIAL SERVICE  
OHANGWENA REGIONAL DIRECTORATE  
REGIONAL MANAGEMENT TEAM  
EENHANA**

Private Bag 88006  
Eenhana  
Namibia

Tel: 065 - 263239  
Fax: 065 - 263225  
E-mail: opetuhango6006@gmail.com

**OFFICE OF THE REGIONAL DIRECTOR**

Enquiries: John N. Hango

31 October 2017

To:

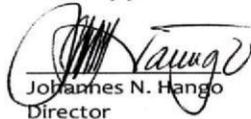
- The Honorable Councilors
- Program Officers
- Heads of Health Districts
- Community Leaders
- Other Organisations

**Re: Academic study by Ms. Selma I. Uushona**

The person with the above-mentioned name is studying her PHD degree and has chosen to come and investigate socio-cultural factors that influence the prevention of malaria in our region (Ohangwena). She will visit different offices, hospitals and communities within Ohangwena region. The study results will also help us (Directorate of Health) to plan malaria prevention better.

Kindly give her assistance as required. She has her identifications as well as the letter from the Ministry of Health which authorized her to conduct the study.

Faithfully yours

  
Johannes N. Hango  
Director



*Your Health Our Concern*

## **ANNEXURE D: QUESTIONNAIRE**

### **AN INVESTIGATION OF THE SOCIO-CULTURAL FACTORS THAT INFLUENCE THE PREVENTION OF MALARIA IN OHANGWENA REGION, NAMIBIA: A SOCIO- CULTURAL CONGRUENT TRAINING MODEL FOR HEALTH EXTENSION WORKERS**

Dear participant,

Thank you for accepting to participate in this important study. This study is an attempt to find out the socio-cultural factors that influence the prevention of malaria in rural areas. This study is of an academic nature. Your answers are important and will remain confidential and will be used as part of an overall body of information. You are therefore not required to give details related to your personal identification such as your name. Should you find it uncomfortable to answer any question in this questionnaire or wish to withdraw completely from the process, you are free to do so. Kindly answer the questions herein as honestly and as completely as possible by selecting the response that best represents your position.

#### **1. To which of the following age-groups do you belong:**

- |              |              |            |           |
|--------------|--------------|------------|-----------|
| a). 18 years | b). 19 -24   | c). 25 -29 | d). 30-34 |
| e). 35-39    | f). 40-44    | g). 45-49  | h). 50-54 |
| i). 55 – 60  | j). Above 60 |            |           |

#### **2. Which of the following best describes your gender?**

- |          |            |
|----------|------------|
| a). Male | b). Female |
|----------|------------|

#### **3. What is your current marital status?**

- a). Single      b). Cohabiting      c). Married      d). Divorced      e). Widowed

**4. What is your current employment status?**

- a). Formal Employment (Job with a salary)      b). Self-Employment  
 c). Unemployed      d) Retired/pensioner

**4.1. If you are employed please state occupation:** \_\_\_\_\_

**5. What is the highest level of education you have achieved?**

- a). Primary education      b). Secondary education  
 c). Tertiary education      d). No education

**Economic factors**

6. Do you own the mosquito net

1. Yes	
2. No	

6.1 If yes how do you acquire it

a. Free from the Ministry of Health and Social Services	
b. Free from friends and family	
c. Bought from a retailer	
d. Other [Specify]	

6.2 If no what prevent you from owning a mosquito net

- e. Net is expensive
- f. Fear of itching
- g. Not comfortable in using a net
- h. Is not a priority

**7. Do you sleep under a treated mosquito net as a way to prevent malaria?**

- a). Yes
- b). No

**7.1 If you answered “yes’ above: What is the current quality of your mosquito net?**

- a). It is intact and clean
- b). It is intact and dirty
- c). It is broken with holes

**8. Has your house ever been sprayed for the prevention of malaria?**

- a). Yes
- b). No

8.1 **If you answered “yes” above, when last was the house sprayed?**

- a). Less than 6 months ago                      b). 7 -12 Months ago                      c). More than 12 months ago

9. **Have you been diagnosed and treated for malaria in the past 12 months?**

- a). Yes                      b). No

10.If yes to 9, who make decision to take a sick or feverish family member to health facility? a.

Head of household

- b. male who is working  
c. Any adult at home  
d. Other specify

**11 Socio-cultural practices and economic conditions**

11.1 How do you perceive the severity of fever?

- a. Vomiting, fit and pass dark little urine.  
b. Loss of alert, change in behavior and confusion  
c. Yellow eyes, vomiting and pass loose stool  
d. Any fever is treated first at home

12. How do you treat fever in your community?

- a. Use of traditional herbs  
b. Use of fever medicine from local shop/pharmacy  
c. Visit a health facility  
d. Consult a traditional healer

13. What do you do if there is no improvement after treating fever with traditional herbs.

- a. Use left-over medicine from previous treatment
- b. Visit health facility/clinic
- c. Consult a private doctor
- d. Buy medicine from local shop
- e. Buy medicine from pharmacy

14. What causes delay in seeking treatment for fever on time?

- a. No money to pay service and transport
- b. Traveling of long distances to reach health facility
- c. Long queues and long waiting hours
- d. Shortage of drugs at health facility
- e. Bad attitude of health workers

## 15 Environmental factors

15.1 Do you have livestock living around your house?

1. yes	
2. no	

15.2 If yes, what is distance between your household and livestock kraal?

a. Attachment to the house	
b. 50m	
c. 100	
d. Other specify	

16. Is the house build close to the following assets?

	1. yes	2. no
a. Millet field		
b. Point of clean water		
c. Point of dirty water from your traditional bathroom/ toilet		
d. Any stagnant water on the near surrounding		
e. Open wells/pond/puddles/swamp		
f. Plantation in the fence at point of source of water		
g. pit latrine		

## **ANNEXURE E: TOOL GUIDE FOR IN-DEPTH INTERVIEW**

Dear participant:

Thank you for accepting to participate in this study. This study is an attempt to find out the sociocultural factors that influence the prevention and control of malaria in rural communities. This study is of an academic nature. Your answers are important and will remain confidential and will be used as part of an overall body of information. You are therefore not required to give details related to your personal identification such as your name. Should you find it uncomfortable to answer any question during this interview, you are free reveal it at any time without fear of reprisal or you may withhold your responses.

This discussion is within the limits of informed consent and confidentiality and you are under no particular obligation to participate. Kindly note that even though I will be taking notes, I will also use a voice recorder during the interview to ensure that as much information as possible is captured. Further note that all information will be treated confidentially.

Date of interview \_\_\_\_\_ Place \_\_\_\_\_

main question as follows:

1. What is your perception on malaria prevention, control and care in your household?

Probing questions were:

1. Can you please tell me the socio-cultural factors that influence the prevention of malaria in your household?
2. With reference to socio cultural factors you explained above, what practices are used to prevent and control malaria?

3. What other malaria prevention and control measures are available to you and your house hold member?
4. Can you please tell me how children aged 5 to 17 years are helped in the use of modern and traditional practices?
5. What are the barriers do you experienced that prohibit you achieving the intended goals of malaria prevention and control practices?
6. How can cultural practices be strengthened to achieve optimum prevention and control of malaria in this community?
7. What is the best way to communicate effective cultural practices in the prevention and control of malaria in this community?

## ANNEXURE F –TOOL GUIDE FOR FOCUS GROUP DISCUSSIONS

Dear participant:

Thank you for accepting to participate in this study. This study is an attempt to find out the sociocultural factors that influence the prevention and control of malaria in rural communities. This study is of an academic nature. Your answers are important and will remain confidential and will be used as part of an overall body of information. You are therefore not required to give details related to your personal identification such as your name. Should you find it uncomfortable to answer any question during this discussion, you are free reveal it at any time without fear of reprisal or you may withhold your responses.

This discussion is within the limits of informed consent and confidentiality and you are under no particular obligation to participate. Kindly note that even though I will be taking notes, I will equally use a voice recorder during the discussion to ensure that as much information as possible is captured. Further note that all information will be treated confidentially.

Date of FGD \_\_\_\_\_ Place \_\_\_\_\_

Number of Participants: \_\_\_\_\_ Male: \_\_\_\_\_ Female: \_\_\_\_\_

1. What is your perception on malaria prevention, control and care in your community?

Probing questions:

2. What cultural practices do you know that are used in the prevention and control of malaria in this community?
3. What other malaria prevention and control strategies are available to this community?

4. How do the cultural practices influence the overall prevention and control of malaria in this community?
5. Can you please tell me how children aged 5 to 17 years are helped in the use of modern and traditional practices?
6. What are the barriers do you experienced that prohibit you achieving the intended goals of malaria prevention and control practices?
7. How can cultural practices be strengthened to achieve optimum prevention and control of malaria in this community?
8. What is the best way to communicate effective cultural practices in the prevention and control of malaria in this

## ANNEXURE G: CHECKLIST

### Demographic data

#### 1. Age group present in the homestead

a. Under 5	
b. 5-17	
c. 18-29	
d. 30-39	
e. 40-49	
f. 50-59	
g. 60+	

#### 2. Gender/ sex

a. <b>female</b>	
b. <b>male</b>	

#### 3. Number of people per household

a. 1-3	.
b. 4-6	
c. 7-9	
d. 10+	

**Physical inspection**

4. Mosquito net available

a. YES	
b. NO	

5. Shape

a. Doom shape	
b. rectangle	
c. square	
d. Other [Specify]	

6. Current quality of net

a. Intact	
-----------	--

b. Hole/s	
c. clean	
d. dirty	

8. Net treated

a. Yes	
b. No	

9. Net physically hanging?

a. YES	
b. NO	

10. Type of supporting material used around the sleeping area

a. Hook	
b. Wood	
c. Stick	
d. Ceiling beam	
e. Others: specify	

11. Reserve net

a. Yes	
b. No	

12. Any unused net that has not been opened since received from the manufacturer

a. Yes	
b. No	

**Mosquito net usage**

13. Sleep under a net the night preceding the survey

a. Yes	
b. No	

14. Age groups use the always

c. 0-59 months	
d. 5-14 years	
e. 15-59 years	

f. 60 years and above	
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**Net users' classification by risk/ vulnerability**

15. Age group uses the net always

g. under 5 years	
h. Older children under 14 years	
i. Women of child bearing age (15-49 years)	
j. Adult 60 years	

16. Frequently use of the net

k. Every night	
l. Some times	
m. Not using it at all	

17. Number of people sleeping in a net a night prior the survey

n. 1- 2	
o. 3-4	
p. 5-6	

q. Others [specify]	
---------------------	--

**Maintenance of mosquito net**

18. Type of soap used for washing the net

r. Sunlight bar	
s. Powder soap	
t. Liquid soap	
u. Other specify	

19. Method of drying a treated mosquito net

a. Hanging it in sunlight	
b. Put it at shaded flat surface inner door	
c. Other specify	

20. Unappropriated uses of the mosquito nets observed:

	YES	NO
a. Fishing		

b. Drying of domestic food in their yards using mosquito nets.		
c. Drying of domestic food in their yards using mosquito nets		
d. Dried in extreme sunlight		

**21 Environmental conditions and sanitations**

Is there presence of the following factors close to homestead?	YES	NO
21.1 Humidity on the site of water source		
21.2 Stagnant water		
21.3 Water storage practices		
21.4 Home garden		
21.5 Ditches to irrigate home garden		

21.6 Other vegetation around the house		
21.7 Open shallow sunlight puddles		

21.8 Ponds		
21.9 Swamps		
21.10 Pit latrine		
21.11 Sewage		
21.12 Open space used for urination		
21.13 Open bath space		
21.14 Bushes		
21.15 Garbage heaps		
21.16 Dirty environment		
21.17 Dry millet stalk		
21.18 Dry thatch bundles		
21.19 Cattle kraal		
21.20 Sleeping hut window with mesh		
21.21. Sleeping hut window without mesh		
21.22 sleeping hut has door cover		
21.23 sleeping hut cover with a cloth		

21.24 crack on the wall		
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**ANNEXURE H: TRANSCRIPTION FROM IN-DEPTH INTERVIEW**

R: My name is Selma Ingandipewa Uushona, A PhD student at the University of Namibia (UNAM), Oshakati Campus, and School of Public Health. I am here today to conducting an individual interviews with you regarding malaria prevention and control at community level. The purpose of information gathered will help institutions to incorporate sociocultural congruent care in the training of HEWs. Your contribution useful ideas needed to improve knowledge of the HEWs on cultural competence and coping with working among diverse culture. It is therefore important for to participate in this interview. You are free to answer questions and the participation is not imposed. Be informed that your voice is being recorded for study purposes only, and you need not to mention your name but I need to know your age. I will also need to take pictures after interview if you allow me to do so with you permission. I will appreciated if you will mentioned the name of your village. The interview session will take 30-45 minutes.

You are free to give oral or written consent. Thank for listening and I hope you understand.

P: *"Yes madam, you can start with you interview session".*

R: **Thank you very much for your permission. I want to ensure you that there is no correct or wrong responses to this interview. Let me start with the first question.**

**Can you please tell me the name of your village?**

P: *"My village is Omundudu."*

R: **How old are you now?**

P: *"I am 62 years old."*

R: **Thank you for the information.**

**Can you please tell me how malaria is prevented in socio cultural perspective?**

P: *“In the past we were not know malaria and not aware of Malaria”.*

*During old times, even our grandparents know only the condition known as “ombwela”.  
We treat “ombwela with herbs”. English word for “Ombwela” is febrile disease. We  
only come to learn the term Malaria recently”.*

**R Now tell me how do you prevent malaria in cultural practices?**

P *“We have hospitals now”.*

**R I want cultural practices, let us keep hospital aside. I appreciate the explanation but  
the question remains how do you prevent Malaria or control mosquitoes in  
sociocultural perspective?**

P *“I use tumble weed, burn it with hot coal, placed herb inside the piece of old broken  
clay pot to produce smoke inside the rooms”.*

**R Where do you get tumble weeds?**

P *“We obtain tumble weed from the field especially it grow under the shades of trees, but  
you can also find the herb at open space in Millet field.”*

**R If I go to the millet field now, am I going to find tumble weed this time?**

P *“You will not find these herbs this time of the year, it is only available during rainy season”.*

P: *“I used also bitter bushes, both wet and dry are helpful”.*

*“The bitter bushes is always available but they produce strong scent to compare user  
friendly smoke produced by tumble weed”*

**R** If you want to prevent malaria this time of spring, what do you use?

P *“I have never seen a person suffering from malaria at this time of the year. Malaria is not common during spring, malaria is only common during winter and summer time”.*

**R** You said you have never seen a person suffering from malaria during this time, now tell me what do you use to prevent malaria during summer and winter time?

P *“This time I do not experience malaria”.*

**R** Let me ask you in a simple form, in the absence of tumble weed and bitter bushes, what else do you use? Is there no mosquitoes around this time of the year?

P *“I don’t see mosquitoes or experience malaria in this hot weather, I only see mosquitoes and malaria during summer”.*

*“ What troubling me a lot this time is chicken louse”.*

**R** Tell me what do you use to prevent malaria despite tumble weed and bitter bushes?

P *“During winter we do not even use this old practices. At present, we left the use of tumbler weed and bitter bushes”.*

*“These traditional practices are outdated, we only use the hospital”.*

**R** I am not asking about hospital treatment and prevention, I want to learn cultural practices?

P *“We if left with no option and the mosquitoes are many we use bitter bushes to chase mosquitoes, but many times we prefer to use tumble weed”.*

**R** Thank you, I want you to repeat for me how do you use tumble weed and bitter bush?

P: *“I put tumble weed and bitter bush in a containers and burn it inside the rooms”.*

**R:** Do you burn bitter bush and tumble weed the whole night or you only burn it for a certain period?

P *“We perform burning activities before sundown to chase the insect away and to kill these insects”.*

*“We keep the doors closed for a while to kills the insects, the fortunate ones escape by flying away”.*

**R** Is the mosquitoes not coming back into the room at night if smoke fade?

P *“Not easily, many of these insects are killed by the smoke”*

*“The mosquitoes are only enter the rooms after the smelling fade away after many day, and if you fail to insert additional herbs in the roof of the sleeping room”.*

**R** Can you please tell me the socio-cultural factors that influence the prevention of malaria in your community?

P: *“I, since my childhood, there was no school to teach us cultural beliefs and customary practices”.*

*“The teaching was acquired through: “Oxungi” (Primary socialization) while sitting around the fire at “Olupale.” The traditional beliefs, has various term for Malaria, as I stated earlier*

*on, we only know terms such as onyango, Oshidu, and these terms traditionally are attached to situational activities”.*

*“Omunhu okwa lya omanuwa ina kola nde ta kwata konyango.” “Okwa kwatwa koshidu shoutalala a danena omeva.”*

(Literally means a person is suffering from acute afebrile disease due to consuming unripe watermelon or from expose to cold water)

**R What other malaria prevention and control measures are available to you and your house hold? What else do you use besides tumble weeds and bitter bush?**

P *“We use don or doom spray what so ever, I don’t how to read, but you can check the correct name of the spray on that container lying on the soil”. (She point the empty container with the name “doom”.*

**R So you use the doom spray, how do you acquire doom spray?**

P *“We buy it from local shops.”*

**R Where do you get money?**

P *“We sometimes receive funds from family members who are working”.*

**R Now that you use tumble weeds and bitter bushes, what prevent you from buying and using doom spray all the time?**

P *“Dooms prays has just emerged recently”.*

*“We are now addicted by the doom spray and as a result we are no more using our cultural methods”.*

**R Do you see the need to use herbs?**

P *“I don’t see the need”.*

**R Do you have adequate resources such as money and doom sprays all the time?**

P *“I have enough for myself, I spray in my own room”.*

**R Do you use doom spray in each room?**

P *“Not all the time”.*

**R What do you use in the rooms of you grandchildren?**

P *“I use traditional methods, because these plants has been used by our forefathers successful”.*

**R You are still valuing the importance of use tumbleweeds and bitter bushes?**

P *“Yes”*

**R What are you going to use if doom spray and money get finish?**

P *“I am going back to cultural methods. I also use hospital services”.*

**R Are you living near the hospital?**

P *“Very much, long distance was a problem of the past. We used to travel long distances because health care services was only at Okatana Roman Catholic and Oshakati hospital”.*

**R: Is there anything do you want to share with me before I come to an end of our interview?**

*P* “No I have no any information to share”.

**R.** Thank you very much for your time and you rich contribution, I wish a fruitful day.

**Stay well.**

## **ANNEXURE I: TRANSCRIPTION OF FOCUS GROUPS DISCUSSION FROM OMUNDAUNGILO CLINIC**

My name is Selma Ingandipewa Uushona, A PhD student at the University of Namibia (UNAM), Oshakati Campus, and School of Public Health. I am here today to conducting focus group discussion with you. The purpose of information gathered will help institutions to incorporate sociocultural congruent care in the training of HEWs. Your contribution useful ideas needed to improve knowledge of the HEWs on cultural competence and coping with working among diverse culture. You are participating voluntary. Be informed that your voice is being recorded for study purposes only, and you need not to mention your name. I will also need to take pictures after interview if you allow me to do so with you permission, and the interview session will take 30-45 minutes

**R** What socio-cultural practices do you know that are used for the prevention and control of malaria in your community? Or can you please tell me how malaria is

**culturally prevented?**

P1 *“Most people in our community use to burn etwelakuku and edimba before they sleep”.*

R **How long they burn etwelakuku and edimba inside the room, in reference to time frame per day?**

P2 *“It normally takes 30 minutes”*

P3 *“yes I support the previous speaker, but when there is a lot of mosquitoes, time can be extended up to 2hours”.*

P4 *“To add on previous speakers the time duration of the burning will also depend on the nature and type of plants used, if the plant or herb is wet, fresh or dry”.*  
*“The dry tumble weed produce light smell and last for short duration”.*

*“On the other hand, edimba whether fresh or dry It produce a very strong smell”.*

*“The edimba smoke repels mosquitoes for 24-48 hours. The problem of edimba is its smell is very much irritating, cause discomfort breathing to children, especially the first night use”.*

R: **Tell me at which time of the day do the community members put the burning herbs in the sleeping room.**

P6 M *“They normally burn the herbs during the evening time, between 6h00 and 7h00, but sometimes the time containers can stay inside the rooms until at 8h00 in the evening”.*

P7 M *“The community members perform this activity inside the room with closed doors at the time when they are busy preparing the supper”.*

*“During this time of supper they close the doors of the rooms”.*

*“They have to wait until smoke disappear and the same time mosquitoes are also run away”.*

*“The wait period helps to provide chance for smoke to leave the room for proper ventilation”.*

**R: Except for tumble weed and bitter bush, is there no other cultural practices used to prevent Malaria in the community?**

P *“No says the whole group”*

**R With reference to socio cultural factors you explained above, what influence the community members to use these methods in the prevention of malaria?**

P10M *“As was said earlier, the first point is poverty, many people have no source of income and they are unemployed”.*

*“This situation make them not able to buy modern material such as nets and sprays like doom, so they opt to “omadimba or etwelakuku”.*

P7M *“They use those methods because is what they find used by their forefather in the past, literally is heritage that pass from generation to generation”.*

P4F *“This people are very poor and many lack money to go to town and buy nets”.*

*“Besides poverty, they travel long distances to reach area where better services are available”.*

P1F *“Some community members are resistant to change and they believe in local available*

*practices. Lack of knowledge is high among rural communities”.*

**R: Is there no other preventative practices used for malaria in the community besides cultural practices?**

P8F *“They wear trousers, long t-shirts and long sleeves clothes that cover the whole body at night”.*

P9M *“In addition to that they also use doom sprays or apply cream and lotion that repel mosquitoes”.*

P10M *“Most community members weed their houses and surroundings”.*

**R What do you mean by weed?**

P10M *“I mean they clean their houses and environments”.*

**R how do the cultural practices influence overall prevention and control of malaria in the community? Are these cultural practices effective and make difference?**

P5F *“Wow! Those cultural ones, yes they are effectives and make difference, because..., especially to herbs, herbs chances away mosquitoes. At least if it is used properly it repel mosquitoes”.*

**R Are the plants and herbs readily available in each village?**

P6M *“I can say yes for etwelakuku, this herb is readily available especially during rainy season”.*

*“The bitter bush is only available in some villages”.*

*“As result on non-existence of plants and herbs, in all villages community members are only use what is available in their villages”.*

**R What are the barriers to the prevention and control of malaria that delay the achievement of zero rate of local malaria transmission and other intended goals?**

P6M *“There are many barriers”.*

*“The biggest and first challenge is non- availability of net”.*

*“There is no net in the government and “etwelakuku” (tumble weed) is very rare in many villages at winter”. “As I said earlier on, etwelakuku is only available during rainy season between January and somewhere around April while mosquitoes are continue to exist beyond summer time”.*

P7M *“To support what was mentioned by the previous speaker on that even those plants, I am referring to Omadimba is not everywhere. They are only available in some communities”.*

P1F *“One challenge is long distance to health facilities and retail shops where nets are available”.*

**R is there no method to preserve etwelakuku for future use?**

P5F *“Oh, No, community members believe only to use it that time when it is fresh”.*

*“On the other hand it more visible during January to April because the people are busy growing millet, doing cleaning of weeds”.*

*“When people are cultivating millet or cleaning the weeds, is the good time for*

*separating etwelakuku from other weeds and it can be spotted easily”.*

P4F “Community members reveal that a dry etwelakuku produce a light smell and its effectiveness is not last longer”.

**R How to strengthen the use of traditional plants and herbs at community level?**

P2F

*“I encourage them to keep on using local available traditional practices because this plants and herbs are effective”.*

*“On the other hand, I know there is no nets, practicing burning of etwelakuku is better than nothing”.*

P10M *I am also concur with my colleague, in sense that I am aware about the level of poverty among our communities, traveling of long distance to reach places where there is better services, I am of the opinion for us as health extension workers not to discourage our people from using local available herbs”.*

P3F “I know these plants and herbs are local available and cost no money, are obtained free of charge. “

“I am supporting the training that put emphasis on preservation of the utility of cultural practices among poor rural communities”.

P8F “In my village I advise them to collect etwelakuku in bulk during rainy season and dry them for future use”.

**R Good people, what about “omadimba”?**

P9M “I know “omadimba” (Bitter bushes) are not available at our local villages, hence the benefit of “omadimba” is equally important in malaria prevent culturally”. I am fully

aware that “omadimba” are available throughout the year, unlike a seasonal etwelakuku that can only available at summer”.

**R Do any one of you advice community members to borrow omadimba from neighboring villages?**

P “No we never think about it, but is a good idea”.

**R Let me take you back to etwelakuku. When you advice community members to collect etwelakuku in bulk for future use, Do they comply or are they adhere to your advice?**

P8F “Is not every one but some do comply”. “The majority are just demanding free net from the government or from donors”.

**R In your health district, do you have adequate nets from government and donors?**

P3F “No nets are most of the time out of stock and when nets are available, they are not enough for everybody”.

**R What is the best way to communicate effective cultural practices in the prevention and control of malaria in the community?**

P6M “We do one to one meeting during the time of we visit their houses”.

“Sometimes we do community meeting with the assistance of village headman”.

“Other method we use opportunities like after church to give the health advice on malaria prevention”.

“We also visited school to educate both teachers and learn during breaks”.

P4F “We use to use poster at all public gathering place for people to access information on their own time”.

**R I see everyone is carrying a cellphones, are you using it as training tool?**

P2 “No we are not yet started training or text health advice messages to our clients”.

“We only use this cellphones to communicate with our supervisor if we experience problem that need urgent attention like if we visit a home and find the patient is critical ill condition”.

“The problem is poor network coverage, most of the time our cellphones are not reachable”.