INFLUENCE OF DEFINITIONS OF MALARIA ILLNESS ON HEALTH-SEEKING BEHAVIOR IN HOMABAY COUNTY, KENYA

BY

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DECLARATION

This thesis is my original work and has not been presented for a degree in any other university or for any other award.

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To the Almighty God who inspires me to do all things through Christ.

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OPERATIONAL DEFINITION OF TERMS

This section documents the operational meaning of the terms used in the study.

Definition of illness: This refers to the way an individual or people in a community view or conceptualizes a situation of ill-health. Illness is the state of being unwell and not only experienced physically through symptoms but also socially through community reactions. Malaria illness was measured through the number of respondents who chose different definitions perceived to cause the disease.

Family advice: This refers to directions given by immediate members of a family regarding the type of action that should be taken in dealing with illness.

Health-seeking behavior: This refers to a series of actions undertaken by individuals affected or infected by malaria in the pursuit of wellness. These actions may include but are not limited to the use of herbal medicine, over the counter drugs, home remedies and professional healthcare. Health-seeking behavior was measured by the percentage of residents who admitted to having used the above options.

Herbal treatment: The use of indigenous knowledge in the diagnosis and treatment of malaria. In this case, herbal treatment meant the use of barks, stems and leaves of indigenous trees in the treatment of malaria. This was measured by the percentage of respondents who admitted to having used herbal treatment in the management and treatment of malaria.

Influence: The ripple effect that one variable has on the other. In this case, it was the effect that the definition of malaria illness has on health-seeking behavior. This

was measured by the actions that were taken by individuals after recognizing that they were suffering from malaria.

Lay-referral: This refers to non-professionals such as family members, friends, neighbors, and others in the society who help an ill person in the interpretation of symptoms and identification of disease and treatment choices.

Malaria: This is a disease caused by a bite of a female anopheles mosquito.

Perception: This refers to how a situation of illness is conceptualized through interpretation and understanding and how this affects the behavior and interaction of members of a community. This study measured perceptions through respondents' views on how others in the community viewed them and how this affected their interaction in the community.

Prevalence: The degree to which a population is affected by malaria. This was measured by the number of respondents who admitted to having suffered from malaria in the last 6 months.

Self-care: This refers to a process whereby a person takes an initiative in preventing, diagnosing and treating a disease without seeking professional advice. In this study, it was measured through analyzing the number of respondents who indicated they use herbal medicines, home remedies and purchase of over the counter drugs as their first option in dealing with malaria symptoms.

Severity: This refers to the seriousness that an illness has on the life of an individual. In the case of malaria, the seriousness can be viewed through incidences of complicated malaria that can lead to death.

Social networks: These refer to an individual social relationship in the form of friends, family, and others outside the family who are consulted for opinions and knowledge on the appropriate care. The social networks were measured by asking the respondents who they consulted when they felt ill before seeking professional help.

Social roles: This refers to the expected behavior of an individual occupying a certain position or status in a social group in the community. They are socially approved and culture-specific. They form the basis upon which an individual is placed in the social structure. This study measured social roles through respondents' responses to how malaria illness had affected their performance of duties in their households and the community.

Susceptibility: This refers to the risk or the likelihood of an individual being affected or infected by a particular disease in this case malaria.

ABBREVIATIONS AND ACRONYMS

AIDS	Acquired Immunodeficiency Syndrome
AL	Artemether Lumefantrine
CHO	Community Health Officer
CHV	Community Health Volunteer
CIDP	County Development Integrated Plan
ESTS	Express Scribe Transcription Software
FGD	Focus Group Discussion
HIV	Human Immunodeficiency Virus
IPT	Intermittent Preventive Treatment
ITNs	Insecticide Treated Nets
KDHS	Kenya Demographic and Health Survey
KEMRI	Kenya Medical Research Institute
KII	Key Informant Interview
KMIS	Kenya Malaria Indicator Survey
KNBS	Kenya National Bureau of Statistics
KUERC	Kenyatta University Ethical Review Committee
MDGs	Millennium Development Goals
MOE	Ministry of Education
MOF	Ministry of Finance
MOH	Ministry of Health

MOP	Ministry of Planning
NACOSTI	National Commission for Science, Technology, and Innovation
NGOs	Non-governmental Organizations
NMCP	National Malaria Control Programme
RBM	Roll Back Malaria Partnership
RDT	Rapid Diagnostic Test
SPSS	Statistical Package for Social Sciences
SDGs	Sustainable Development Goals
UNDP	United Nations Development Program
UNICEF	United Nations Children Education Fund
WHO	World Health Organization

ABSTRACT

Malaria poses a great challenge to countries in the world. In sub-Saharan Africa, malaria is among the leading causes of mortality and morbidity. This disease kills many people despite the interventions that have been put in place. This study explored the influence of definitions of malaria illness on health-seeking behavior in Homabay County, Kenya. The objectives of this study were to document the socio-demographic characteristics of residents of Homabay County, to establish the definitions of malaria illness held by the residents of Homabay County, to determine the health-seeking behavior adopted during malaria illness and to analyze the relationship between definitions of illness and health-seeking behavior for malaria. The study adopted the Symbolic Interaction Theory, Health Belief Model (HBM) and Suchman Stages of Illness and Medicare Model. The study employed a cross-sectional survey research design utilizing both qualitative and quantitative approaches in data collection. It utilized a sample size of (384) respondents from Suba South Constituency in Homabay County. Qualitative data was collected using key informant interviews and focus group discussions. Four key informant interviews and four focus group discussions together with the open-ended questions in the questionnaire provided qualitative data. Closed-ended questions in the questionnaire provided quantitative data which was analyzed descriptively using Statistical Package for Social Science (SPSS) version 21 and presented in form of tables and charts. Qualitative data, on the other hand, was transcribed and presented in themes as per the objective of the study. The study revealed that a majority of the respondents had the correct definition of malaria illness which they linked to mosquito bites however there were misconceptions surrounding the disease such as malaria being caused by staying long in water and drinking dirty water among others. The study also revealed that respondents used pain killers together with other drugs bought from chemists as their first point of action when they had symptoms of malaria. The use of health facilities in rectifying ill health was considered when over the counter drugs did not cure illness. This study also revealed a relationship between the definitions of malaria illness and health-seeking behavior through analysis of the number of respondents' definitions of malaria illness and the action they took. Those who defined malaria to be caused by mosquitoes went to local shops or chemists and health facilities to seek treatment. This study, therefore, concluded that respondents had the correct etiology of malaria coupled with other definitions arising out of social experiences with the disease. The study recommended the need for sensitization of malaria through vernacular radio stations and the participation of community members during health talks to improve on knowledge, health-seeking behavior and demystify misconceptions. Through this, interventions geared towards mitigating malaria can be accepted and be more effective.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

In the year 2000, malaria was identified as one of the greatest obstacles to world development and therefore, became a major target of the Millennium Development Goals (MDGs) as shown by WHO & UNICEF (2015). Subsequently, it was included as goal number six which sought to combat Human Immunodeficiency Virus and Acquired Immunodeficiency Syndrome (HIV/AIDS), malaria and other infectious diseases. Indeed, target 6c was set to have malaria and other major diseases halted by the year 2015 (Amouzou, Buj, Carvajal, Cibulskis, & Fergus, 2015). The MDGs have since then been succeeded by the Sustainable Development Goals (SDGs) with goal 3 seeking to ensure healthy lives and promoting well-being for all ages. Indeed, targets 3.3 of goal 3 of the SDGs seek to ensure the end of malaria together with other epidemics by the year 2030 (Sachs, 2012).

Between 2000 and 2015, the rate of new malaria infections declined by 37% globally, translating to 6.2 million lives saved in the same period with 16 countries reporting zero cases and three countries reporting below ten cases (WHO & UNICEF, 2015). This has been attributed to interventions that include vector control, provision of Insecticide Treated Nets (ITNs), Intermittent Preventive Treatments (IPTs) of malaria during pregnancy and Rapid Diagnostic Tests (RDTs) among others (WHO, 2016). Despite the gains made so far at the global stage, the sub-Saharan African region still lags behind in the achievement of the target. In 2015, it was estimated that the top 13 countries in infection rates were from the region and collectively accounted for 80% of world malaria cases and 78% deaths. These countries included Nigeria, Mali, Niger,

Cameroon, Democratic Republic of Congo, Tanzania, Uganda, Kenya, Ghana, Mozambique, Burkina Faso, and Cote D' Ivoire. This represented a lag behind the other regions of the world by 22% in terms of infection rates (WHO, 2016).

Malaria remains a deadly disease that causes high mortality and morbidity around the world making it a great public health challenge, especially for sub-Saharan Africa. The enormity of this disease poses economic and social challenges both at the individual and national level thus being a barrier to economic growth and social development (Ricci, 2012). Sub-Saharan Africa is affected due to a number of factors among them changes in climate that has led to global warming thus allowing for the transmission of malaria to occur all-round the year and scarce resources that have hindered efficient and effective malaria control activities (WHO, 2014).

The severity of malaria in sub-Saharan Africa is seen through cases of cerebral malaria and anemia in children while for pregnant women it could lead to stillbirths, the birth of underweight babies, abortion and maternal mortality among others (Sicuri, Vieta, Lindner, Constenla, & Sauboin, 2013). In Kenya, Malaria is still a public health challenge and is one of the leading causes of morbidity and mortality with more than 70% of the Kenyan population being at risk of infection (Kenya Malaria Indicator Survey, 2015). Malaria still accounts for about 20% of all hospital admissions, 30-50% of all outpatients' attendance and 10% of all deaths in the country second only to Pneumonia (National Malaria Control Programme, 2017). Indeed, before 2015, malaria had been the leading cause of deaths (Kenya Demographic and Health Survey, 2015).

According to WHO (2016), 70% of Kenya is classified as having a rate of more than one infection per thousand people. The highest risks of infection in Kenya lie greatly on children below the ages of 5 years, pregnant women, chronically ill persons and people living with HIV/AIDS (Kvinnoforum & RBM, 2010; MOH, 2014; WHO, 2014). The incidences of malaria in Kenya are determined by altitude, rainfall patterns, and temperatures which are not uniformly distributed. The most affected areas, therefore, are those with low altitude, high temperatures and seasonal rainfall patterns (KDHS, 2014).

According to the Kenya Malaria Indicator Survey (KMIS), malaria epidemiological zones are classified into four which include the highland epidemic, endemic, semi-arid or seasonal and low-risk areas. Based on these classifications, the lake region is classified as endemic thus experiencing high malaria transmissions throughout the year with a prevalence rate of 20-40% (National Malaria Control Programme, Kenya National Bureau of Statistics and ICF International, 2016). Weather patterns in the endemic areas increase the chances of survival for mosquito parasites, thus leading to an increase in malaria transmissions.

Homabay County experiences high incidences of malaria which is estimated at 36%. According to the County Integrated Development Plan (CIDP), Malaria together with other diseases such as diarrhea, pneumonia, upper respiratory tract infections, and HIV/AIDS account for 70% of all mortality and morbidity in the County (CIDP, 2012). The situation of malaria is further aggravated by inadequate health facilities in the County, low doctor and nurse to patient ratio which stood at 1:40,000 and 1:1,500

respectively as of 2012, irregular drug supplies, inadequate staff and high costs of medical services (CIDP, 2012).

The Ministry of Health (MOH) further estimates that malaria cases per 100,000 people in Homabay county stood at 58,820 as of 2015, a number that has risen compared to 2012 when there were 45, 191 cases. Malaria admissions also stood at 12, 479 patients indicating a rise from 9, 135 in 2012 (MOH, 2014). Governments and non-governmental organizations have for a long time rolled out programmes to control and eventually eradicate malaria. The success of these programmes has however been minimal in their rollout and sustainability. This may have been due to among other factors, lack of consideration on how people define illness and the resultant action that follows. This study, therefore, seeks to explore the influence of the definitions of malaria illness on health-seeking behavior in Homabay County, Kenya.

1.2 Statement of the Problem

Despite the elevation of malaria to the MDGs and later to the SDGs and the resultant gains in the fight against its spread, it remains among the main causes of morbidity and mortality in Kenya. The malaria situation in Homabay County stands at 36%. It is further, aggravated by high poverty levels and HIV/AIDS prevalence (County Integrated Plan, 2012). The Government and NGOs have for a long time come up with interventions to control malaria. Such interventions include vector control, provision of ITNs, IPT for pregnant women, and prompt diagnosis of malaria cases and treatment among others. With these interventions, there has been moderate success in the fight against malaria mainly observed through a decline in malaria cases. However, this has

not been completed since the objective of elimination of malaria is yet to be achieved neither have the achievements been uniformly distributed in Kenya.

Most researchers and academicians have concentrated on the effectiveness of interventions towards malaria control as indicated by the literature in this area (Chuma et al., 2009; Ernst et al., 2016; Ojakaa, Jarvis, Matilu, & Thiam, 2014). These interventions have had only moderate success. This scenario could be due to a lack of consideration of the socio-cultural context and the social definitions of illness regarding malaria embraced by communities in this country. The lack of context-specific approaches in addressing malaria may have prompted people in these communities to devise their own ways of defining and dealing with illnesses to include the use of home remedies, herbal medicine and the use of over the counter drugs among others.

How people define illnesses, including malaria and how they seek health care within their local contexts, remains unclear. There has not been much research conducted on the relationship between the definitions of malaria illness and health-seeking behavior. Additionally, programmes and interventions have for a long time been designed and conceptualized from a biomedical viewpoint to the detriment of local culture and context. There is, therefore, a need for an approach that goes beyond the biomedical to incorporate a socio-cultural perspective that encompasses peoples' definitions of health and illness including how malaria is understood and defined.

1.3 Purpose of the Study

This study aimed at exploring the influence of definitions of malaria illness on health-seeking behavior in Homabay County. It is guided by the fact that malaria is

among the leading causes of mortality and morbidity in Homabay County. There remains a need to understand the definitions of malaria illness that residents of Homabay County hold, how they deal with malaria, the barriers that they face concerning dealing with the illness and the possible ways of making the interventions that governments have come up with such as vector control, IPT for pregnant women, prompt diagnosis and treatment of malaria more effective. In doing so, this study aims at contributing to literature in the existing body of knowledge in the area of Sociology of health and illness.

1.4 Objectives of the Study

1.4.1 General Objective

The general objective of this study was to explore the influence of definitions of malaria illness on health-seeking behavior in Homabay County in Kenya.

1.4.2 Specific Objectives.

1. To document the socio-demographic characteristics of the residents of Homabay County.
2. To establish the definitions of malaria illness held by residents of Homabay County.
3. To determine the health-seeking behaviors adopted by residents of Homabay County during malaria illness.
4. To analyze the relationship between definitions of malaria illness and health-seeking behavior.

1.5 Research Questions.

1. What are the socio-demographic characteristics of the residents of Homabay County?
2. How do residents of Homabay County define malaria illness?
3. What are the health-seeking behaviors adopted during malaria illness by residents of Homabay County?
4. What is the relationship between the definitions people have of malaria illness and their health-seeking behavior?

1.6 Significance of the Study

Malaria poses a challenge to the socio-economic well-being of individuals and countries. It is worth noting that the success of malaria-related programs depends heavily on how people define illness, their beliefs, practices in transmission, treatment and the control of diseases (Edessa, Ali, & Enquoselassie, 2003). This is so because how people define illness determines when, how and what health options they pick therefore ultimately determining whether they die or live. Understanding how people define illness will contribute to the existing body of knowledge in social science particularly in the Sociology of health and illness and other disciplines. It may also go a long way in formulating targeted preventive and curative interventions with a view of improving upon the extant practices, response and health outcomes.

Communities have their own ways of defining and interpreting illness. Different communities also respond differently to illness. This study, therefore, aimed at bridging the gap between beliefs and health-seeking behavior for community members, patients and medical practitioners among others. It may also form a platform for policymakers in

developing programmes that are people-centered and inclusive of their needs while maintaining their socio-cultural values. In doing so there may be a change in attitude towards professional healthcare and more acceptance of malaria control programmes thus contributing to efficient and effective malaria control.

The heaviest burden of malaria is witnessed among poor rural households where most malaria cases are managed by home remedies, over the counter drugs, herbal medicine, and professional healthcare as the last resort when the disease has progressed to a greater length (Deressa, Ali, & Enqusellassie, 2003; McCombie, 2002; Metta, Haisma, Kessy, Hutter, & Bailey, 2014). The choice of health options is further influenced by factors such as cost, distance to the health facility and availability of medication among others all of which hamper health-seeking behavior. There is need for an understanding of the factors that deter people from seeking professional healthcare and those that promote self-treatment. Service providers in improving malaria-related interventions may find the findings of this study useful and adopt them.

This study sought to understand the influence of definitions of malaria illness on health-seeking behavior among the residents of Homabay County which is classified as an endemic zone according to Kenya malaria indicator survey 2015 (NMCP, KNBS, & International, 2016). Based on this classification, Homabay County experiences high malaria prevalence satisfying its selection as the site for the study.

1.7 Assumptions of the Study

This study was based on the assumption that every individual in an endemic area is at risk of malaria infection and that such individuals possessed some information

about the disease. Furthermore, individuals were assumed willing to share information about their experience with the disease in terms of its prevention, detection, and health-seeking choices made. The responses were, therefore, assumed truthful and honest. The accuracy of the information provided was assumed to be very high. There was also an assumption that data collection instruments were reliable and valid for the research.

1.8 Scope of the Study

This study limited itself to investigating the influence of definitions of malaria illness on health-seeking behavior in Homabay County in Kenya based on its classification as an endemic area. Participants were drawn from the four wards of Gwassi North, Gwassi South, Kaksingri East and Kaksingri West.

1.9 Limitations of the Study

This study limited itself to the responses of the respondents as per the questions in the questionnaires, key informant interviews and focus group discussions. This study was also limited to Homabay County in Kenya, which is a rural setting with different socio-economic and demographic characteristics thus the finding from this study cannot be generalized to reflect the situation of other Counties in Kenya. This study utilized a cross-sectional survey design which intended to reveal what was happening in this area at that particular time. It was, therefore, limited in time and cannot be used to analyze trends in health care seeking in the area.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction.

This chapter was reviewed based on the objectives of the study which were to document the socio-demographic characteristics of the residents of Homabay County, to establish the definitions of malaria that residents of Homabay County held, to determine the health-seeking behaviors adopted by residents during malaria illness and to explore the relationship between the definitions of malaria illness and health-seeking behavior. Three theories were also reviewed to include Symbolic Interaction, Health Belief Model and Suchman Stages of Illness and Medicare Model. The synthesis of literature and theories led to a diagrammatic representation in the form of the conceptual framework.

2.2 Socio-demographic Characteristics in Relation to Malaria Illness.

Schwartz, Sadetzki, Murad, and Raveh (2001) argue that age is a risk factor for malaria. As such, children and adults both men and women remain vulnerable to malaria however the most vulnerable include children below the ages of five, pregnant women, persons living with HIV/AIDS and travelers especially those moving from regions of low transmission to high transmission of malaria (WHO, 2015). The vulnerability of populations also differs in that in endemic regions the most vulnerable include children and pregnant women (WHO, 2015). Adolescent pregnancy is also said to increase vulnerability to malaria (WHO, 2007).

Mothers and caregivers have the responsibility of taking care of children in the event of illness. Studies have documented the knowledge in identification of malaria and treatment-seeking behavior and found out that a majority of mothers and caregiver can identify symptoms such as fever in children and administer treatment (Mitiku &

Assefa, 2017). The level of competence may also vary depending on whether the primary caregiver lives in a rural or urban setting. In a study conducted in Guinea in both urban and rural areas, it was established that caregivers in rural areas had a one-third chance of recognizing malaria symptoms such as fever as compared to the caregivers in the urban areas (Romay-Barja, Cano, Ncogo, Nseng, Santana-Morales, Valladares, Riloha, & Benito, 2016). Several studies have also documented the perception of mothers and caregivers in the treatment of malaria illness (Laar, Laar, & Dalinjong, 2013; Malik, Hanafi, Ali, Ahmed, & Mohamed, 2006; Mitiku & Assefa, 2017).

Gender norms and societal values influence the division of labor, leisure activities and patterns and sleeping arrangements in communities, factors that may lead to differences in exposure to both men and women to malaria infections (Kvinnoforum and RBM, 2007). Women who wake up very early to perform household chores may be exposed to mosquitoes and risk infection (Vlassoff & Manderson, 1998). Gender differentials also exist in accessing treatment and care for malaria and the use of preventive mechanisms such as bed nets. Where resources and financial authority are in the domains of men, women have to seek permission. The men also decide on the type of action to be taken. Other vulnerabilities such as diseases also increase the chances of infection. Ayisi, Van Eijk, Ter Kuile, Kolczak, Otieno, Misore, Kager, Steketee, and Nahlen (2003) indicate that in the case of HIV/AIDS, women who are HIV positive are at risk of contracting malaria, developing severe anemia as compared to those who are HIV negative.

Conditions and performance of work may result in increased exposure to malaria vector which leads to infection. There are societies where men have a greater occupational risk as compared to women such as working in mines, open fields and fishing. These activities may be performed at peak biting hours thus increasing the risk of infection (Heggenhougen, Hackethal, & Vivek, 2003). Activities performed at peak biting hours pose an equal risk of infection to both men and women (Parks & Bryan, 2001). The instabilities associated with work may also pose a challenge to health-seeking behavior in that where employment is seasonal or temporary, there are times when there are no financial resources as such occurrence of malaria illness during such periods may pose a challenge in the area of treatment (Heggenhougen et al., 2003).

High levels of knowledge have often been associated with improvement in management and control of malaria. In a study conducted in western Kenya, it was documented that education level, the risk of contracting malaria and knowledge of persons who had died of malaria contributed to high ownership of bed nets in households act as a control measure (Ernst et al., 2016). In another study conducted in Burkina Faso, It was established that women who had undergone secondary and tertiary levels of education had higher and accurate knowledge of malaria estimated at 29% and 93% respectively (Yaya et al., 2017).

Marital status is viewed in relation to decision making in accessing health care services. In a study conducted in Kenya, it was established that mothers responded to childhood malaria within 24 hours of the onset of the symptoms by administering treatments at home. The duration between the onset of the symptoms and visiting health

facilities took five days, a factor that they attributed to issues such as lack of a caregiver to take care of the siblings of the ailing children and their partners being absent (Mwenesi, Harpham, & Snow, 1995). In another study conducted in Zimbabwe utilizing women only focus group discussion revealed that 60% of the respondents noted that, the decision of how, where and when to visit health facility was the responsibility of the heads of the households (Vundule & Mharakurwa, 1996).

Human mobility caused by activities such as religious pilgrimage expose individuals to malaria, especially where those who are not immune pass through malaria-endemic zones during the journey (Prothero, 1965). They may contract malaria illness and also serve as carriers to the areas they are going to. They can also spread malaria to those who are non-immune and are coming from different areas. Those who are going back may also carry the parasite back to their places of origin. Malaria infections are said to be high in pilgrim cites due to the crowding in the cites (Prothero, 1965).

2.3 Definitions of Malaria Illness.

Eckholm (1977), defines illness as a physical and social experience in which the body is not only covered by skin but also open and connected to the world surrounding it. Socially, illness results in the disruption of normal roles thus undesired in the community. The ideas of how to recognize and manage illness are therefore borrowed from the lay views of illness which are detailed and provide the explanations which link the individual experiences of illness to social circumstances in a way that may be

consistent and believable than the explanations of the professional health care provider (Taylor & Field, 2007).

The onset of symptoms in an individual leads to the development of definitions based on a person's knowledge of the illness or from personal experience of others (Petrie & Weinman, 2006). The family and other people outside the nuclear family who form the lay referral system are important during illness since the ill person borrows from their experiences. The lay referral system also plays a crucial role in influencing decisions regarding the perceived seriousness of seeking professional help (Rogers, Prentice-Dunn, & Gochman, 1997). This development of definitions or beliefs, therefore, poses a challenge to prompt diagnosis and drug adherence for patients with malaria (Petrie & Weinman, 2006).

Grover, Kumar, and Jindal (2006) also note that illness is a subjective occurrence in which the affected person may seek care from within or outside the health care system. When people feel ill, they make decisions on where, when and how to seek care. A number of factors influence these decisions. These factors can either enable or deter individuals from seeking care. How people define the nature of their illness and its presentation affects how they and others will cope and deal with the situation thus determining the overall health outcome. This, therefore, means that for a disease to be completely controlled and managed, the individual and the community definitions of illness and health-seeking behavior need to be understood (Bourne, 2009). This is because definitions of illness have an influence on the time taken to act on the symptoms which if not handled properly then an individual can die. It is worth noting

that illness has negative impacts on the economic and social fabrics of any community and the society at large (Malik, Hanafi, Ali, Ahmed, & Mohamed, 2006).

Rumun and Terungwa (2015), note that different communities hold varied definitions and beliefs about the cause and transmission of malaria. These definitions vary across cultures and greatly influence health-seeking behavior. Ill health, therefore, differs from one society to another with views about the treatment of the disease. Such definitions about the cause and transmission of malaria are, therefore, reinforced by the culture of a people. This, therefore, means that illness has a social meaning with culture serving as a tool, which can either restrain or enable interpretation of the signs and symptoms of a disease and consequently treatment of the illness.

Several studies indicate that a majority of respondents have the knowledge about malaria causation and transmission. According to Laar, Laar and Dalinjong (2013) in a study conducted in Ghana using a cross-sectional descriptive survey of households, it estimated that a majority of the respondents had knowledge about malaria causation and transmission, with 65% of the respondents attributing malaria to mosquito bites. This study also indicated a high awareness of malaria signs and symptoms. The high awareness level of malaria has been seen through the ability to recognize symptoms such as fever, vomiting, chills, headaches, loss of appetite and convulsions among others as supported by literature from (Adeneye, Jegede, Mafe, & Nwokocha, 2013; Laar, Laar, & Dalinjong, 2013; Opare et al., 2014; Sumari, Dillip, Ndume, Mugasa, & Gwakisa, 2016).

According to O'Neill, Gryseels, Dierickx, Mwesigwa, Okebe, d'Alessandro, and Grietens (2015) in a qualitative study conducted in 12 rural communities in Ghana, it is reported that there were certain symptoms that were associated with supernatural forces such as complications during illness, disease progression and relapse. Where the cause of illness was attributed to supernatural causes, a traditional healer was sought after. Laar et al., (2013) also indicate that malaria is associated in other areas with eating oily foods, sugary foods, heat from the sun and genetic inheritance. The perceived cause of illness, therefore, determines the choice of treatment for the illness and the possible outcome.

Okeke and Okafor (2008) in a study done in Nigeria noted that people have local definitions of the cause and recognition of malaria. Utilizing a descriptive cross-sectional survey, this study reported that malaria was perceived to be caused by factors such as the sun shining directly on the child and the sun shining on the breast of a breastfeeding mother. Where the lactating mother stayed for longer hours under the sun while working on the farm, the breast milk would heat up and eventually, when the child sucked it they became ill of malaria. This study also highlighted that the correct knowledge of malaria varied according to education level. The correct knowledge that malaria is transmitted by mosquito bites was influenced by the level of education of the respondents. Those with no education, primary level of education, secondary and tertiary levels contributed to 19.8%, 35.1%, 53.1% and 46% respectively. In the same study, 37.3% of the respondents attributed malaria to mosquito bites, 26.7% attributed it to other factors such as breast milk, 15.3% bodily contact, 14.7% to drinking dirty

water, 8.7% to inhalation and 11.3% to sharing of cups. These divergent views greatly influence health-seeking behavior.

According to Jones and Williams (2004), definitions of malaria illness can be viewed through the acceptance of the sick role. Every society has its own rules on how people should behave in the event of illness. The sick role is, therefore, a social process that is spear-headed by cultural norms. There are factors that determine the type of symptoms and the seriousness that those symptoms pose to an individual and the associated response. The sick role is viewed in its potential risk to the individual and the wider community. The society sees malaria as a common illness that is not supposed to disrupt normal lives. This, therefore, means that malaria is viewed as a normal illness with the choice of treatment being in the hands of the family and close relatives. When illness is taken as normal it means it will not be taken with, the seriousness that it may require as such it could lead to mortality.

The discussion on the acceptance of the sick role is further supported by a study done in Kenya by Chuma, Okungu, & Molyneux (2010a) who reported that respondents defined malaria as a disease that occurred during the peak of the agricultural season when people are busy in their farms and a time when people were making a lot of money. This, therefore, means that becoming ill during this period would have an impact on household income calculated through work done. An occurrence of illness during this period is likely to compromise household income, an indication that people may fail to assume the sick role to continue with their income-generating activities as such there is little or no attention to illness. Definitions of illness, therefore, determine

the health-seeking behavior adopted, when, where and how it will be cured in an attempt to be well.

2.4 Health-seeking Behavior during Malaria Illness

According to Abbas (2009), health-seeking behavior revolves around a series of remedial actions that an individual undertakes with the aim of rectifying ill health. Such actions include the ability of the person to identify the disease, recognize the symptoms, care and monitor the situation. Health-seeking behavior is, therefore, understood as an indicator that a sick person is willing to live. This, therefore, makes health-seeking behavior a personal, social and of great national concern. It is also important to note that for any health programme to address the health needs of a people there needs to be an understanding of the health-seeking behavior they adopt in their attempt to deal with the illness.

Tordrup (2008), notes that from the onset of the symptoms, to the time when the illness is cured, there are several actions that may be taken. One of these actions is self-treatment. This involves using antimalarial drugs available at home in the management of malaria together with a combination of drugs bought from local shops and pharmacies in an attempt to rectify ill health. Deressa, Ali, & Enqusellassie (2003) in a study done in Southern Ethiopia among Peasant Associations using a cross-sectional survey also notes that the respondents had self-medicated at home using antimalarial drugs since they were considered accessible and cost-effective.

Self-treatment is sought after self-diagnosis of the ill person based on an individual's definition of the illness and the ability to identify the symptoms associated

with the disease. Where illness is viewed as a normal occurrence that does not pose a serious threat to the individual, self-treatment may be preferred. It is opted for due to challenges faced in seeking health care services in health institutions. Such challenges include but are not limited to inadequacies in the health services witnessed through high costs of treatment, inaccessibility of health facilities, shortage of drugs and inefficiencies in the provision of services as supported by literature from (Chuma, Okungu, & Molyneux, 2010a, 2010b; Onwujekwe, Chima, & Okonkwo, 2000; Sicuri et al., 2013)

In Sudan, Malik, Hanafi, Ali, Ahmed, & Mohamed, (2006) through a cross-sectional study on children below the age of 5 years reported that self-treatment was common due to the ability of the mothers to recognize malaria, high costs of travel and lack of healthcare facilities in some instances. This study also noted that mothers would begin self-treatment at home and proceed to the health facility after three days in instances whereby the illness did not respond to the treatment. In Kenya (Chuma et al., 2010a) found out that 32% of the fevers reported in children were treated using drugs bought from local shops and 15.3% treated by drugs from the chemist. Even though self-treatment has been effective in dealing with symptoms such as fever, especially in children, treatment of the disease can only be effective if a person presents himself or herself at a health facility because a delay in treatment leads to disease progression thus posing a threat to control and management of malaria.

Traditional medicine is also another alternative for the management of malaria. In Gambia, (O'Neill et al., 2015) found out that traditional healers are preferred where

the cause of illness is suspected to be some supernatural powers in the form of witchcraft. Herbal medicine is therefore prepared from leaves, stems and bark of trees and consumed at first for emergency treatment for sickness with symptoms of nausea, vomiting, diarrhea and stomach pains. Traditional treatments in Gambia, was noted to be highly preferred because of the ease of access at any time and lack of consultation. The use of traditional healers was, however, reported to be decreasing in other areas due to the associated stigma. This, therefore, meant that visitation to traditional healers is something that was done in secrecy with a small part of the population.

Continued use of herbal remedies can also be attributed to the misconceptions surrounding the use of pharmaceutical medicine. In a study conducted in Ghana, Dako-Gyeke and Kofie (2015) in two slums using cross-sectional survey design reported beliefs regarding biomedicine in the treatment of malaria. For pregnant women, there was a misconception that malaria drugs could lead to miscarriages and abortion. Pregnant women, therefore, preferred treating themselves with herbal medicines and not visiting health facilities because of beliefs that modern medicine has many side effects apart from being expensive and less effective as compared to herbal medicine.

Failure of home and traditional treatment leads to the choice of a health facility which is usually the last resort yet considered the most effective though not for all cases (Laar et al., 2013). Where home and traditional treatment have failed, the ill person is presented at a health facility. The choice of health facility is however determined by several factors which include accessibility of health facilities, affordability of the services, and availability of information regarding the services offered in the health

facilities, availability of quality medical care, continuous supply of drugs, perceived severity and attitudes of health care providers (Bedford & Sharkey, 2014; Dixit et al., 2016; Silweya & Baboo, 2013).

Health-seeking behavior is further, reinforced by power dynamics within the households. Power dynamics are viewed through gender roles and norms which are socially determined. Gender roles and norms require women to undertake a triple role of taking care of those who fall ill out of malaria, perform household chores together with taking care of the entire family in the household (Kvinnoforum & RBM, 2010). Despite the responsibility of women, a majority of them have the least access to information, decision-making powers and financial resources that may be used in the prevention and control of malaria (Sachs & Malaney, 2002). This is further supported in a study by (Tolhurst & Nyonator, 2006). This, therefore, means that in the event of illness, decisions of how, when and where to seek help solely depend on the breadwinner.

2.5 Relationship between Definition of Malaria Illness and Health-seeking Behavior

Illness exists in every society though its' definition varies from one group of people to another and is culturally determined. Health-seeking behavior is, therefore, understood through an individual and communities' definition of the happenings in their social environment. Health-seeking behavior of a people in a community is determined largely by how the health facilities are used and the kind of outcome that people receive. Where the health care system is properly organized and people receive positive outcomes, people feel free to seek professional healthcare. Where there are certain

challenges, utilization of health care services is hampered (Musoke, Boynton, Butler, & Musoke, 2014).

The definition of malaria illness influences health-seeking behavior in that, different people from different communities have their own beliefs of the cause of malaria as supported by literature (Neill et al., 2015, Chuma et al., 2010, Opare et al., 2014, Rumun & Terungwa, 2015). Such definitions range from malaria being caused by mosquito bite, use of dirty water and a disease that occurs during the rainy season and also, a time when the maize are ready in the farms which is a period when people are very busy in the farms. The occurrences of malaria during periods when people are busy on the farms is not likely to be given much attention in seeking healthcare because it is a disruption of their social roles which helps in generating income for the provision of the needs of the family.

The definition of illness determines decision making in terms of who seeks healthcare, how and where to consult. Opare et al., (2014) notes that, households perceived susceptibility and the beliefs about the seriousness of the disease are important factors in decision making in the household in preventive and curative actions. This means that where illness is not seen as a threat then action is likely to be delayed. This is also supported by a study done in Ghana which found out that mild and severe symptoms are treated at home using both the traditional and modern medicine. Where the home remedies have failed, the choice of health facility is considered though viewed as costly and inconvenient (Laar et al., 2013).

Treatment options also affect the definition of illness. In a study done in Gambia, it was observed that people associated malaria with a micro-organism inside the body or supernatural forces outside the body. Where there were suspicions of supernatural forces as the cause of illness, then a traditional healer would be sought after as compared to professional health care from a health facility (O'Neill et al., 2015).

The perception of the patient about the healthcare provider also influences health care seeking behavior through influencing the acceptance or rejection of health care services by patients. In a study done in Kenya, it was reported that older patients found it difficult to accept treatment from very young health care professional since they saw them as inexperienced, disrespectful and would not provide quality care. Health care workers in other cases were also seen as not caring (Chuma et al., 2010).

The perception of the cost of illness is also influenced by health-seeking behavior through financial resources. Financial resources are required for consultation, treatment, purchase of antimalarial drugs, transport to and from the health facilities and in preventive measures (Mubyazi et al., 2010). According to Sachs and Malaney (2002), direct costs of prevention and treatment of malaria consume household's disposable income especially for poor families thus decreasing the levels of savings for families with frequent episodes of illness. This can further be supported by a study done by Koenraadt et al., (2001) in Western Kenya through a survey of 83 households that reported preventive expenditure consumed 7.41 dollars per households per year.

Socio-cultural factors also influence definitions of illness which in turn influence health-seeking behavior. These involve traditional beliefs and practices of the community. These practices are social invention of people and are therefore culturally accepted. A critique of such practices may be regarded as deviance. These practices determine whether a community will accept and adopt a measure to control and prevent malaria or reject it (Ricci, 2012).

2.6 Literature Gap

This study locates malaria in the socio-cultural domain through studying how malaria is defined and the resultant action taken in an attempt to treat ill health. This study acknowledges that beliefs and cultures of a people are different and unique to them and it is out of this that interventions geared towards malaria can either be embraced or rejected thus contributing to either success or failure of the interventions. This study, therefore, sought to integrate both the biomedical and the social aspects of health and illness to embolden the fight against malaria.

This study therefore hoped to fill the gap that has so far not been plugged on with regard to how malaria illness is defined and the resultant health-seeking choices that are made in pursuit of treatment that could either lead to recovery, complications in illness in the case of cerebral malaria or death on the other extreme where professional help is sought late. This study also focused on an area classified as high incidence with malaria transmissions occurring throughout the year.

2.7. Theoretical Framework.

This study adopted the Symbolic Interaction Theory, Health Belief Model and Suchman Stages of Illness and Medicare model.

2.7.1. Symbolic Interaction Theory

Symbolic interaction theory is a micro level theory that explains how society is developed and maintained through social interactions among individuals in the social environment (Carter & Fuller, 2015). This theory has various influences with the greatest influencer being American Philosopher George Herbert Mead and his theory on the mind, self and society. Symbolic Interaction was developed to counter macro level theories such as structural functionalism which viewed society from a top-down approach thus focusing on how institutions and structures affected individuals in society. Symbolic interaction explains societal relations from a bottom-up approach thus shifting the focus from macro-level to micro level operations which emerge during interactions (Carter & Fuller, 2015).

The name symbolic interaction was coined by Herbert Blumer, a student of George Herbert Mead. Core to symbolic interaction is meaning which emerges out of the interactions of individuals in the social environment (Aksan, Kısac, Aydın, & Demirbuken, 2009). This theory is based on three tenets. The first tenet is that human beings act towards things based on the meanings that they have on them (Ritzer & Smart, 2001). Meaning is therefore, based on the human ability to interact and how our interactions shape or guide our actions towards other people. People therefore, act on experiences, situations and events based on the meanings that they attribute to them.

Illness arising out of malaria may therefore, be viewed differently by community members due to the meanings that it has on them. If it is viewed as serious because of its potential to cause death then prompt action is likely to be taken to avert the effects of the disease and save lives. On the other hand, if it is not viewed as life-threatening then there could be delay in action.

The second tenet stipulates that meanings of things arise out of social interaction (Aksan et al., 2009; Ritzer & Smart, 2001). Language, therefore, gives people a way of communicating or negotiating the meanings of things through symbols which are expressed in form of words, attitudes, actions and feelings. Giving a name to something makes it assume that meaning. In the process of interaction, people get meanings out of action, gestures or words used. This shapes their response towards the situation.

The third tenet is based on the interpretation of meaning through the thought process where a person is able to interpret the symbols based on language while interacting with others. When talking to the other person, the mind imagines or thinks about the meaning of what the other party is telling you. This therefore, means that whatever someone is thinking about before doing it is their thought.

2.7.1.1 Application of Symbolic Interaction Theory.

This theory is applicable to malaria because the study sought to explore the influence of the definitions of malaria illness on health-seeking behavior. Illness is therefore not only a physical experience through the abnormalities it causes to the body through signs and symptoms but also a social experience. Symbolic Interaction theory stipulates that meanings are socially constructed and shared within communities and

groups. This study, therefore, anticipated that definitions of illness would reflect the social reality of how malaria is defined, the meanings that arise during the period of illness and how individuals responded to these meanings through actions taken in rectifying ill health.

2.7.2. The Health Belief Model (HBM)

This model was developed in the 1950s in an attempt to explain variations in the use and adoption of healthcare services. Its proponents include Rosenstock, Stecher Hochbaum and Becker among others (Sutton, 2001). The concept of health in this theory lies heavily on an individual's personal beliefs and strategies that they adopt to counter the occurrence of a disease. Personal perception is therefore influenced by a number of factors which affect health-seeking behavior (Hochbaum, 1958). This model consists of three categories which include individual perceptions, modifying factors and likelihood of action.

Individual perceptions are internal and are directed at a person’s level of knowledge and the beliefs about their behavior which influences the likelihood of an outcome out of their behavior. Individual thoughts can be seen through their perceived susceptibility and severity. Perceived susceptibility is seen through the risk that the disease poses. Where the risk is greater, there is a likelihood of engaging in behaviors that are geared towards reducing the risk. Perceived severity is viewed in terms of the seriousness of the disease based on professional knowledge. It can also emanate from the personal beliefs and what the community holds about a particular disease.

Modifying factors include perceived threat, environmental factors and cues to action. Where the perception of susceptibility is combined with perceived severity, the outcome is perceived threat. If the perception of threat is that of a very serious disease, then there can be likelihood of change in behavior. Environmental factors, on the other hand, include the demographic background which puts an individual at risk for example age, gender and socio-economic status among others. For example, a person who cannot afford health care services will be threatened more by disease than one who can afford the cost of treatment. Cues to action involve people, events or things that can cause change in behavior, for example, illness or death of someone close to you such as a member of the family due to a disease (Rosenstock, Strecher, & Becker, 1988).

Perceived benefits and barriers influence the likelihood of action. Perceived benefits are viewed where people adopt healthy behaviors as a belief that their new behavior will prevent them from developing a disease. On the other hand, perceived barriers are seen where an individual decides to evaluate the obstacles in their way that are making them not to adopt healthy behavior. According to Janz and Becker (1984) perceived barriers are significant determinants of health behavior change.

This theory has been widely used in explaining health behaviors but it has however been criticized for focusing too much on the individual as the decision maker, therefore, ignoring other socio-cultural factors that shape peoples thinking and influence their actions. It has also been criticized for not creating an understanding of factors that motivate people to make decisions regarding adopting or not adopting health care behaviors.

2.7.2.1. Application of HBM in Malaria Illness.

This model is applicable in explaining health-seeking behaviors for malaria in that if people perceive the negative consequences of malaria they will opt for healthcare services and adhere to them. Perceived threats can be applied through looking at the possible consequences that malaria might have on a person if healthcare services are not sought after for example death. As such, where the threat is perceived to be negative, health-seeking behaviors are expected. This will also lead to the adoption of preventive measures such as the use of treated mosquito net and spraying of houses among others so as to completely control malaria.

Perceived benefits are applicable in that those at risk of contracting a disease need to feel the benefits of seeking health care services and see that continuity of care is better and greater than not seeking health care services at all. They need to adopt health-seeking practices since they have good outcomes. On the other hand, if people perceive obstacles in health-seeking behavior such as heightened costs of treatment, bad attitudes from health care workers and poor quality of services among others, there will be less likelihood of adopting health-seeking behavior.

2.7.3: Suchman Stages of Illness and Medical Care (1965).

This model highlights five stages of an individual in the decision-making process to determine whether to seek professional health care services or not. The proponent of this model is Edward Suchman, an American Sociology professor. The first stage of this model is the individual's symptom experience which involves an

individual recognizing that they have physical discomfort in form of pain and that this is not normal. Illness is recognized through the inability to perform normal roles.

The second stage involves the assumption of the sick role. An individual at this stage recognizes that they need medical care. At this point, an individual may use home remedies in the treatment of the disease or explore their lay referral system so that their sick role can be validated and explore options available for treatment. Social interactions in the community with friends, family and community members play a crucial role in the situations of illness and influences greatly how the individual will respond to medical care. Seeking help, therefore, involves consultations from family members and moving outside the nuclear family through laypersons with authority until it reaches a professional healthcare provider. This happens because there are very few people who are confident to decide on their own on what to do when they are ill. This, therefore, means that the urgency of seeking medical care will be influenced greatly by the social role of the person or people who were consulted and the longer the consultations take, the longer it takes the individual to seek appropriate care thus having an effect on recovery (Rogers et al., 1997).

Lay culture is very different from that of the professionals in that the patient is expected to show high resistance in using healthcare. As such the traditional practices will be used by many people while professional healthcare by a few who are socially isolated as deviant or consider professional advice where conventional medicine has failed (Freidson, 1988). The consultation of the extended network of interpersonal

influences leaves a person more vulnerable to outsiders as compared to the health practitioners (Eisenberg & Kleinman, 2012).

The third stage is the medical care contact. This stage involves an individual seeking professional healthcare. It is a transition from the lay referral system to professional healthcare. This stage can take longer if an individual denies that they are ill or if their social networks influence them. The fourth stage is the dependent-patient role. This involves the acceptance by the patient that the health care provider has his or her own opinion about the illness as such they have control over the situation. At this stage, the individual assumes the role of a patient. Most people are reluctant in assuming the patient role because they do not want to leave their social roles. The medical practitioner, on the other hand, has to work towards building trust with the patient (Suchman, 1965). At this stage, both the family and the lay referral system still play an important role.

The fifth stage involves recovery and rehabilitation. The individual in this stage deemed to have recovered upon completing their role as a patient through the doctor's decision that the patient no longer requires medical care. After recovery, the individual is expected to withdraw their right of being exempted from duties and resume their normal roles. This model is however criticized for considering only those patients who seek medical care (Rebhan, 2011). Suchman stages of illness and medicare model is presented in figure 1.1

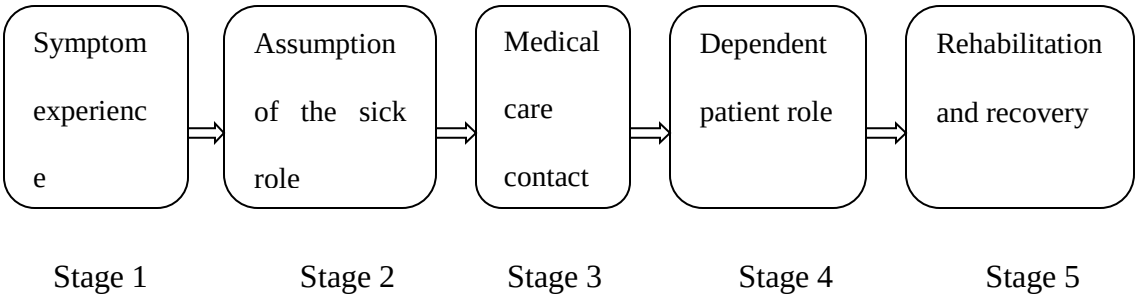

Figure 1.1: Suchman Stages of Illness and Medicare Model

Source: Suchman Stages of Illness and Medicare (1965).

2.7.3.1 Application of Suchman Stages of Illness and Medicare Model

This model is applicable to malaria in that there are people who experience very mild symptoms of malaria while there are others who experience severe malaria symptoms. An individual who experiences minor signs and symptoms may not perceive malaria as a serious illness and as such may use options such as home remedies or drugs bought from local shops or chemists in the management and treatment of the disease. On the other hand, if an individual considers the disease as life-threatening probably from past-experience they will seek professional help and adopt preventive health care to avoid re-infection.

2.8. Conceptual Framework.

This section illustrates the relationship between the variables in the study. The independent variable in this study was the definitions of malaria illness which had several factors that included definition of the cause of malaria illness, seasonality of malaria, knowledge of the symptoms associated with malaria illness and the source of knowledge. Health needs of the population were measured through the views on perceived severity and susceptibility. Social factors were measured through disruption

that illness causes on social roles, the community perception towards illness and the process of decision making.

Institutional factors influencing health-seeking behavior included the availability of health care services, the convenience and the affordability of the services. These factors may have had an influence on whether an individual will seek professional healthcare or not. The intervening variables in this study were social networks in form of family and lay-referral, professional healthcare workers advice, government policies and interventions while the dependent variable was health-seeking behavior which had individual factors such as number of days taken to act on malaria symptoms, how respondents acted on the symptoms and how they used medication prescribed or bought in treating ill health.

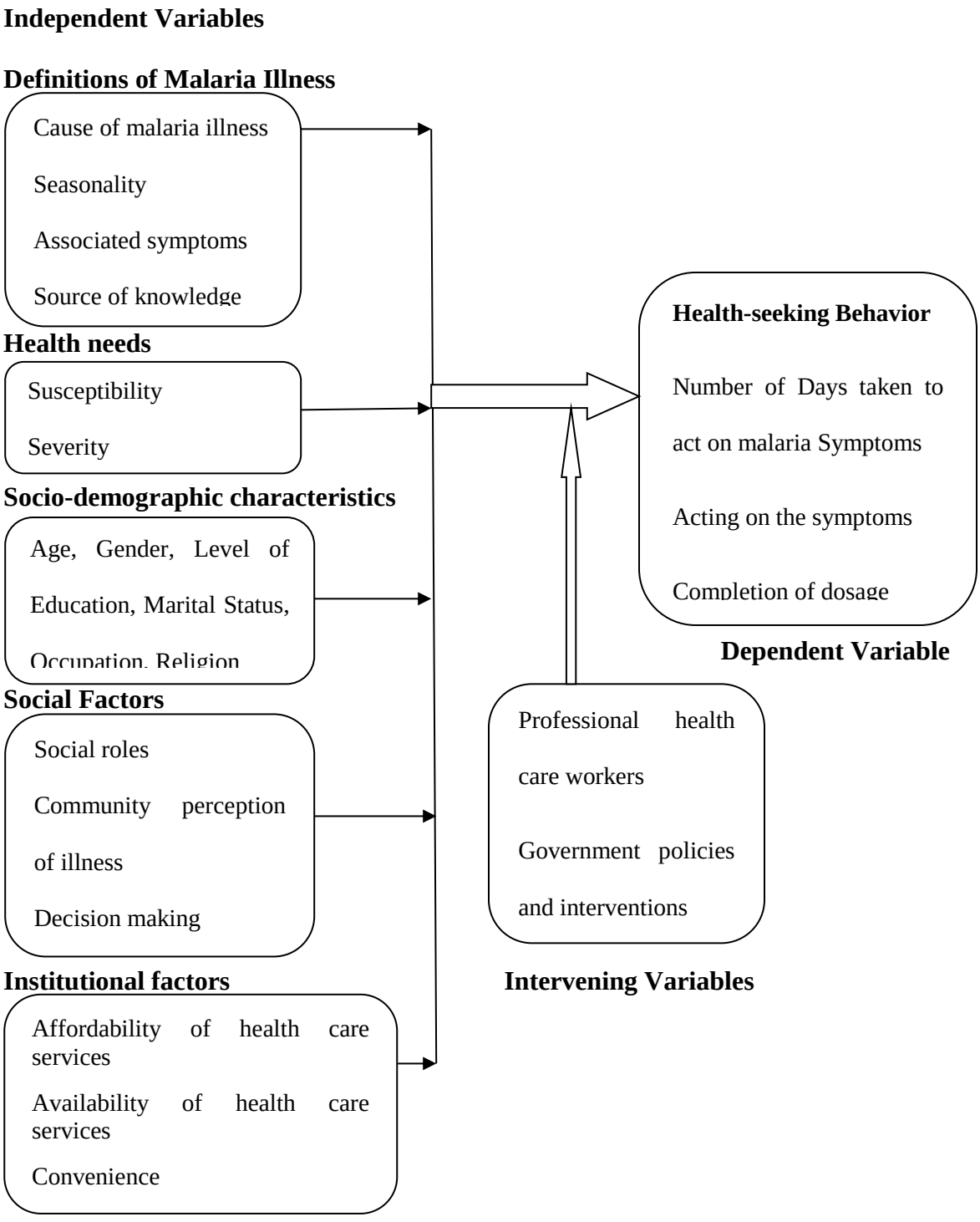

Figure 2.2: Conceptual Framework

Source: Author (2020)

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter provides the methods that were used in the study. This includes the research design employed in this study, location and site of the study, sampling procedures, research instruments, piloting, validity and reliability, data collection procedures, management, analysis of data and ethical considerations.

3.2 Research Design

Research design includes how data was collected, measured and analyzed (Kothari, 2004). This study employed cross-sectional survey research design which aided the collection of both qualitative and quantitative data. A cross-sectional survey was preferred because it allows for the collection of large quantities of information at one point in time. This approach was used with the assumption that the findings could be replicated by other researchers who may have an interest in the same area of study (Creswell, 2013)**.**

Gathering of qualitative data utilized focus group discussions and key informant interviews while quantitative data was gathered using questionnaires, which had both open and closed-ended questions. The open-ended questions in the questionnaire also generated qualitative data. Qualitative data for this study provided a clearer and in-depth understanding of the definitions of malaria illness as lived experiences by the respondents. The choice of both qualitative and quantitative data collection tools helped in bringing out a deeper understanding of the problem under study.

3.3 Location and Site Description

The study was conducted in Suba South Constituency in Homabay County. Homabay County covers 3,183.3 km^2 with a population of 1,131,950 according to the population census of 2019 (KNBS, 2019). The temperatures in Homabay County range from 26 degrees between the period of April to November and 34 degrees Celsius between January and March. The average rainfall in this area is estimated to be 1,100 millimeters. Homabay County borders five Counties namely Migori to the South, Kisii and Nyamira Counties to the East and Kericho and Kisumu Counties to the North East. The county has 8 constituencies namely Kabondo, Kasipul, Karachuonyo, Rangwe, Homabay Town, Ndiwa, Suba North and Suba South.

Homabay County has 211 health facilities with 941 personnel with a majority being nurses according to Homabay County Integrated Development Plan (CIDP, 2012). Major health challenges facing this County include understaffing of health personnel, lack of medical equipment in the health facilities and negative attitudes towards health personnel. Malaria in Homabay County contributes to 36% of the disease burden (CIDP, 2012).

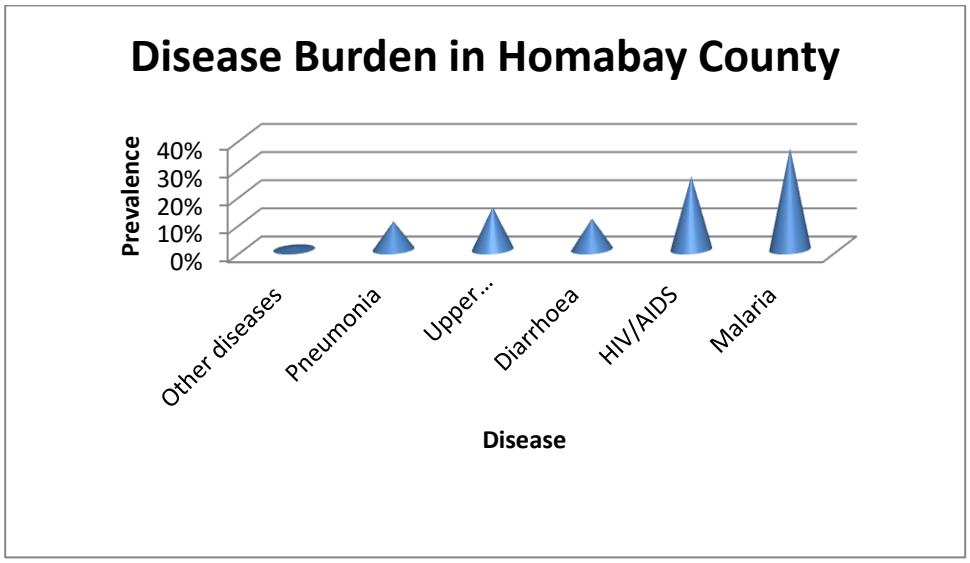

Figure 2.3: Disease Burden in Homabay County.

Source: Homabay County Integrated Development Plan (2012).

3.4 Description of the Population and Sampling

3.4.1 Target Population

Suba South constituency was purposively selected based on its location bordering Lake Victoria and its classification as an endemic area with malaria transmissions happening throughout the year (CIDP, 2012). Suba South constituency has four wards namely Gwassi North, Gwassi South, Kaksingri West, and Kaksingri East. Based on the number of wards the study was conducted in all the four wards to increase the representation. The study targeted households in Suba South constituency whose population stood at 103,054 (Population, Housing, and Census, 2009). The population of Suba South Constituency consists of Luo Abasuba constituting about 95% of the total population. The commonly used language is *Dholuo*. The main economic activities in this area are fishing and small scale agriculture.

3.4.2 Inclusion and Exclusion Criteria

Those who were included in the study were residents who had stayed in the area for at least 5 years or more and gave their informed consent to participate in the study. Both men and women of ages 18 years and above were included in the study. For the questionnaire used in collecting information in the household, only the household heads were included whether male or female. Participants were allowed to participate irrespective of their education level, religious affiliation, marital status, and occupation. Those who were excluded from the study were those residents who were not willing to take part in the study and were below the ages of 18 years and had lived in the area for less than 5 years.

3.4.3 Sampling Technique and Procedure

The sample size for this study was calculated using the formula by Fischer et al., (1998).

$$N = \left\{ \frac{Z^2 pq}{d^2} \right\}$$

Z= A 95% confidence level which is the same as a standard deviation of 1.96 in a normal distribution curve.

P= this is the proportion of households at risk of getting malaria in this case.

Q= 1- the value of p

d= significance level which for this study was set at 5%.

Therefore $n = \left\{ \frac{1.96^2 \times 0.5 \times 0.5}{0.05^2} \right\}$

N=384 households.

3.4.4 Sampling Procedures

Suba South constituency has 20,609 households all spread across the four wards of Gwassi North, Gwassi South, Kaksingri East, and Kaksingri West. Probability sampling was adopted for this study since it gives each sample an equal chance of participation and representation of the entire population (Kothari, 2004). For both qualitative and quantitative data collection tools, the sample size was calculated using the proportionate sample size per ward. Simple random sampling was, then adopted in visiting the four wards. This was done by writing the names of the four wards in four pieces of paper. The pieces of paper were then folded and thrown in a basket where they were reshuffled and then picked one at a time.

For the household visitation, research assistants administered the questionnaires to the household heads after seeking their consent. Focus group discussions were also held with community members in selected locations. Each FGD comprised of 6 to 7 members. The researcher moderated the four FGDs one per ward. Two of the groups were mixed comprising of both men and women, while the other two groups were separate one for women and one for men. Key informant interviews were also conducted in the four wards with one key informant per ward. Those chosen for this study included a community health officer and community health volunteers.

Table 3.1: Proportionate sample size per ward

Wards	Total Population	Proportion in %	Number of households per ward	Questionnaire Sample size per ward	Focus Group discussion size	Key Informant interview size
Gwassi South	34, 563	33.5%	6,912	129	6	1
Gwassi North	30,598	29.6%	6,119	114	6	1
Kaksingri West	26,021	25%	5,204	97	6	1
Kaksingri East	11,872	11.5%	2,374	44	7	1
Total	103,054	100%	20,609	384	4 groups	4

Proportionate sample size per ward = $\frac{\text{Total population per ward}}{\text{The total population of Suba South Constituency}} * 384$

3.5 Research Instruments and Validation

This study used qualitative and quantitative data collected with the help of research assistants who were trained before the beginning of data collection. Data were collected using questionnaires, focus group discussion guides and key informant interviews which were designed by the researcher. The three data collection tools provided primary data from the field through the shared experiences of the respondents. The use of questionnaires, FGDs and KIIs were for triangulation of the responses by the respondents. Through using more than one research instrument, a researcher can overcome weaknesses and biases that may arise due to the use of a single tool (Yeasmin & Rahman, 2012). The study also utilized secondary sources of data in the form of

books and journals. It is also through the secondary sources of information that the researcher was able to identify and develop an interest in this area for the study.

3.5.1 Questionnaires

Questionnaires are considered a convenient way of collecting data from a large population (Mathers, Fox, & Hunn, 2009). The study questionnaires were administered with the assistance of research assistants after seeking consent from the respondents. The questionnaires had both closed and open-ended questions which allowed the respondents to share their opinions with regards to the study topic. This study used a sample size of 384 using questionnaires out of which 336 were deemed appropriate for data analysis.

3.5.2 Focus Group Discussions (FGDs)

Focus group discussions aids in collecting qualitative data. The researcher facilitates and moderates a discussion with a group of people on a specific study phenomenon (David & Sutton, 2011; Jwan & Ong'ondo, 2011). Data in FGDs is generated through group interactions thus utilizing group dynamics. FGDs are efficient since they enable the researcher to collect large quantities of information from a large group within a short period. This study utilized 4 FGDs comprised of 6 to 7 members since this is considered an optimum number (Crabtree & Miller, 1999).

The researcher held discussions for one group comprising of women, another one comprising of men and two mixed groups, one per ward. These participants were households heads purposively sampled based on their ability to provide information and were respondents who had not participated in any of the other data collection tools. The

choice of separate groups was for homogeneity which helps in ensuring that there is a meaningful conversation with a lot of openness (O. Nyumba, Wilson, Derrick, & Mukherjee, 2018). On the other hand, a mixed group brings about diversity and reveals different perspectives and ideas (Forsyth, 2013).

David and Sutton (2011) note that a discussion should be conducted in a quiet location convenient for all the members to participate. For these discussions, the health facilities in the wards provided a quiet location where the discussions were held except for one FGD which was conducted at the beach center. The researcher moderated the discussions and recorded the discussion using a voice recorder which was kept safe and confidential. The respondents consented verbally for the information to be recorded.

Table 3:2: Focus Group Discussions

Place	Ward	Number	Composition
Nyatoto Health Centre	Kakasingri East	7	Mixed Group of 4 women and 3 men.
Suba Level 4 Hospital	Kaksingri West	6	Women only Group
Nyandiwa Health Centre	Gwassi North	6	Men only Group
Mukuyu Centre	Gwassi South	6	Mixed Group of 3 women and 3 men.

Source: Author (2020)

3.5.3 Key Informant Interviews (KIIs)

KIIs are in-depth in nature. They utilize persons with expertise in the researcher's area and have access to perspectives or observations that are important to the researcher. KIIs are important because the researcher gets information that would otherwise not be available through other means (Crabtree & Miller, 1999). Respondents for KIIs were purposively selected based on their ability to provide information. A total of four key informants participated in this study. They included community health volunteers and a community health officer. One key informant provided information for each ward.

3.6 Piloting

A pilot study is usually conducted to assess a research instrument for the benefit of identifying problems before doing the actual study (Chaudhary & Israel, 2014). This study pre-tested the questionnaire in the neighboring Mbita constituency. The Constituency was purposively selected because it shares the same characteristics as Suba South constituency. Since there is no agreed sample size for a pilot study, various researchers suggest different sample sizes ranging from 10-25 (Sheatsley, 1983) to 20-50 (Sudman, 1976) while others like (Connelly, 2008) suggest a sample size of 10%. This study, therefore, adopted a sample size of 10%. The pilot study was, therefore, conducted in 38 households.

After piloting, adjustments were made on the research instrument. The questions in the questionnaire were restructured in a way to give a better understanding to the respondents. The instructions were made simple and clear. More spaces were also

added to questions that didn't provide much information to accommodate open-ended responses.

3.7. Validity and Reliability

3.7.1 Validity

Drost (2011)**,** defines validity as the meaningfulness of research components. This means that a tool selected by the researcher should be able to measure what it was intended to measure. For this study, both content and construct validity were measured. Content validity refers to the extent to which the measurements reflect the specific domain of content. Content validity for this study was measured by ensuring that the data collection tools covered all aspects of the topic under study. Ranjit (2014), defines construct validity as the quality of the research instrument to measure what is meant to measure. Construct validity was ensured through proper structuring of the questions.

3.7.2 Reliability

Reliability is measured through a tool's replicability such that if the same study is to be done by a different researcher they should be able to get similar results (Ranjit, 2014). Data in most cases is influenced by random errors such that as the random error increases, reliability decreases. To ensure reliability, the researcher ensured that the research assistants were trained and given clear instructions on how data was to be collected. The instructions on the data collection instruments were also made simple to understand. The data from the field was coded properly and accurately. Reliability was also ensured through pre-testing the questionnaires on a population that had similar characteristics with the population of the study (Mugenda & Mugenda, 2003).

3.8 Data Collection Procedures

Relevant clearances were sought after the researcher presented introductory letters from Graduate School, Kenyatta University Ethical Review together with the letter from National Commission for Science, Technology, and Innovation to the County Commissioner, Ministry of Education and Ministry of Health in Homabay County. The researcher was then issued with authorization letters which were then presented to the officers in charge of community programmes at Suba Level 4 hospital.

The researcher was also linked to the community health volunteers who assisted in gathering respondents for the FGDs. In the FDGs, data was collected from 6 to 7 members per group for a total of four groups spread across the four wards. This activity was conducted in a quiet location. The health facilities in the wards provided a room where the FGDs were conducted. The researcher moderated the discussions. A voice recorder was also used to record information as the discussions went on during the FGDs and KIIs. This was done after obtaining informed consent from the participants. It was set on a central place where the respondents were able to see it and at a place where it was able to pick all the voices thus ensuring that all the information in the discussion was captured. The researcher and research assistants also administered the questionnaires to the respondents after seeking their consent.

3.8.1 Data Management and Analysis

This study utilized both quantitative and qualitative data. Quantitative data are numerical and arose out of the closed-ended questions from the questionnaire. Qualitative data, on the other hand, take the form of description which could either be

written or spoken and visual images (Denscombe, 2010). Qualitative data for this study were derived from the use of open-ended questions in the questionnaires, FGDs and KIIs.

From the field, quantitative data was cleaned and coded. This helped in ensuring that the information provided was consistent. This was done by going through the responses in the questionnaires and listening to audio recordings FGDs and KIIs. Data from questionnaires were then entered into Statistical Package for Social Sciences (SPSS) version 21 where descriptive statistics were performed and outputs presented using frequency distribution tables, charts, and cross-tabulations. The information was then, interpreted in line with the objectives of the study and discussed under different themes. Some of the open-ended questions which provided qualitative data were also analyzed quantitatively and presented in the form of tables.

Key informant interviews and focus group discussion responses were transferred from the voice recording device and copied to Express Scribe Transcription Software (ESTS) which assisted in transcribing the responses. Qualitative data was gathered using '*Dholuo*' because data were collected in a rural setting as such the use of the local language made it easier for the respondents to share their experiences in the best way which eliminated the challenge of language barrier. The researcher translated the information gathered into English.

Effective management of data is paramount for the safety and confidentiality of the responses provided by the participants. For this study, data was secured with passwords in the computer to deny unauthorized access. Backup was also ensured

through saving the information in flash disks and external hard disks which were kept safely.

3.9 Ethical Considerations

Research ethics guide the process of a study from the beginning to the end. Babbie (2007) notes that ethical issues need to be agreed upon by members of a group. For this research to be conducted there was approval from Kenyatta University Graduate School, Kenyatta University Ethical Review Committee (KUERC) and National Council for Science, Technology, and Innovation (NACOSTI). Within Homabay County, the researcher obtained permission from the County Commissioner Homabay County, Ministry of Education (MOE) and the Ministry of Health (MOH).

During data collection, the respondents were informed of the objectives of the study and their informed consent was sought before the study. Those who agreed to participate in the study were assured of confidentiality of information provided and anonymity. The data was protected in computers secured with passwords. Where a respondent is quoted, then the name or any other characteristic that can identify the respondent does not appear in the text. The right to withdrawal from the study at any time was also granted in case a respondent felt uncomfortable continuing with since participation was voluntary.

CHAPTER 4: PRESENTATION AND DISCUSSION OF FINDINGS

4.1 Introduction

This chapter presents the findings of this study. The study sought to find out the influence of the definitions of malaria illness on health-seeking behavior in Suba South constituency in Homabay County. Data were analyzed according to the objectives of the study which included documenting the socio-demographic characteristics of the residents of Homabay County, establishing the definitions of malaria illness held by residents of Homabay County, determining the health-seeking behaviors adopted by residents of Homabay County and analyzing the relationships between the definition of malaria illness and health-seeking behavior.

The researcher administered 384 (100%) questionnaires to the households in Suba South constituency. A total of 336 questionnaires were collected having been duly filled for data analysis. Fowler (2013) and Saldivar (2012) agree that there is no universal standard on response rate. In a comparative analysis of 175 cases, an average response rate of 55.6% was established (Baruch, 1999). According to Gordon (2002), for studies aiming at describing the behavior and knowledge, 60% response rate is acceptable though a response rate of 70% would be desirable for a study. In addition to the above, 50% response rate is ranked as adequate, 60% as good and 70% and above as excellent (Mugenda, 2003). The 336 questionnaires provided a response rate of 87.5% which was considered appropriate for analysis.

The questionnaire generated both quantitative and qualitative data. The quantitative data were analyzed descriptively and presented in form of tables and charts, while qualitative data derived from open-ended questions in the questionnaires were

analyzed quantitatively and presented under themes in line with the study objectives. Focus group discussions and KIIs generated purely qualitative data that were transcribed and analyzed thematically based on the objectives of the study.

4.1.1 Socio-demographic Characteristics of Respondents

The researcher found it important to analyze the socio-demographic characteristics of respondents. Socio-demographic characteristics analyzed included gender, age, religious affiliation, marital status, level of education and occupation as presented in table 4.1.

Table 4.1: Socio-demographic Characteristics

Characteristic	Category	Frequency/number	Percent
Gender	Male	161	48
	Female	175	52
Age	18-27	168	50
	28-37	73	22
	38-47	59	18
	48-57	21	6
	Above 57	15	4
Religious Affiliation	Catholic	109	32.4
	Protestant	209	62.2
	Muslim	14	4.2
	Others	4	1.2
Marital Status	Married	184	54.8
	Single	137	40.8
	Divorced/separated	5	1.5
	Widowed	9	2.7
	Missing	1	0.2
Level of Education	Primary	180	54
	Secondary	121	36
	Tertiary	35	10
Occupation	Farming	181	53.9
	Fishing	37	11
	Formal Employment	36	10.7
	Business	82	24.4

4.1.2 Gender of Respondents

Analysis of the gender of respondents revealed that male respondents accounted for 161 (48%) while the female respondents were 175 (52%) of the sampled population. The female respondents were slightly more than their male counterparts. The participation of both male and female respondents aided in obtaining a heterogeneous sample.

4.1.3 Age of Respondents

The respondents in this study were clustered by age into 5 groups of respondents at an age interval of 10 years. The respondents who were between the ages of 18-27 were 168 representing 50% of the total respondents. Those between ages 28-37 were 73, accounting for 22% while those between38-47 were 59 accounting for 18% of the total sample. Those between ages 48-57 were 21 accounting for 6% while those who were above 54 years were 15 and accounted for 4%. Generally, nearly three-quarters of the respondents were below 37 years. This age distribution implied that all ages from 18 years were included in the study and as a result, their responses varied across ages.

4.1.4 Religious Affiliation

The findings on religious affiliation indicated that a majority, 62.2% of respondents who participated in this study were Protestants. Those of the Catholic faith were 32.4%, whereas adherents of Muslim faith were 4.2%. Other categories accounted for 1.2% of the sample.

4.1.5 Marital Status

The results on marital status showed that 54.8% of the respondents were married while 40.8% were single. Those who were divorced, separated and widowed

cumulatively contributed to 4.2% of the sampled population. Generally, respondents who were married were slightly more than those who were single and were the majority as compared to all the other categories.

4.1.6 Level of Education

The findings of this study revealed that respondents who had a primary level of education were 180 (54%), while those with secondary education were 121(36%). Those with a tertiary level of education were 35 (10%) of the sampled population. The different levels of education implied that the respondents in this study were relatively well educated and were, therefore, able to understand the questions and respond without difficulties.

4.1.7 Occupation of Respondents

A majority of respondents were farmers 181 (53.9%). The second occupation according to the results was business which constituted 82 (24.4%). The most common business in this area was motorcycle riding otherwise known as '*bodaboda'* and was commonly done by men. The women, on the other hand, were involved in the trade of foodstuffs such as fish, vegetables and other commodities such as clothes. Those in formal employment constituted 36 (10.7%). Fishing in this area was done by men and constituted 37 (11%) of the respondents. Focus group discussions revealed that some respondents linked the nature of their work with malaria. Fishermen revealed that working at night exposed them to malaria. Indeed a male respondent had this to say:

> *"We work at night… we use boats for fishing… So when seated on the boat in the lake from around 9 pm till 4 a.m.… you know that when you are exposed to*

cold throughout the night when it reaches morning then you are infected with malaria"(Male Respondent: FGD, Mukuyu center, 21/08/2018, 11:46 AM).

Another male respondent said that,

"The work I do exposes me to malaria because I sleep outside most of the time". (Male respondent: FGD, Nyandiwa Health Centre, 21/08/2018, 8:50 AM)

4.2 Definitions of Malaria by Residents of Homabay County.

The definitions of malaria illness were considered an important variable in this study since it shapes decisions on the kind of action to be taken by an individual in seeking care when sick. The researcher analyzed the definitions of malaria using various dimensions which included definition by cause of illness, seasonality, severity, susceptibility, symptoms, source, the effect on perception and social roles.

4.2.1 Definition by Causation.

The researcher analyzed the cause of malaria as highlighted by the respondents as presented in table 4.2.

Table 4.2: Definitions of Malaria

Definition of malaria	Yes/frequency	Percent	No/frequency	%	Total
Mosquito bites	303	90.2	33	9.8	336
Heat from the sun	15	4.5	321	95.5	336
Supernatural forces	13	3.9	323	96.1	336
Drinking dirty water	4	1.2	332	98.8	336
Body contact	2	0.6	334	99.4	336

The findings on Table 4.2 reveal that a majority, 90.2% of respondents defined malaria as a disease caused by mosquito bites. This result concurs with the findings of Mutua, Bukachi, Bett, Estambale, and Nyamongo (2016) who reported that 88% of most respondents associating malaria with mosquito bites and Kanyangarara et al., (2018) who also found out that 85% of respondents associated malaria with mosquito bites thus showing a slight increase in awareness of the etiology of disease as compared to previous studies. The ability of respondents to show a high level of awareness also implies that malaria causes a high health burden to households thus of great concern to the community. It also implies that a lot of effort has been put in health campaigns and as a result, there has been an increase in awareness of malaria.

From Table 4.2, a total of 1.2% of the respondents' associated malaria with drinking dirty water. Those who considered supernatural forces were represented by 3.9% of the respondents. Others defined malaria as a disease caused by heat from the sun (4.5%) and 0.6% from body contact. A key informant also cited that some residents hold varied definitions of the cause of malaria ranging from eating sugarcane to exposure to cold weather. To quote the exact words:

> *"Some people say that when the weather is cold or when they stay in the water for long or when rained on they are infected with malaria... Some also say that eating sugarcane brings malaria". (Female Respondent: KII, Mukuyu centre, 21/08/2018, 12:24 PM).*

Focus group discussions also revealed a varied definition of the cause of malaria.

"For us, the work we do exposes us to malaria because of catching a cold… You spend a lot of time in water especially in the morning". (Female Respondent: FGD, Mukuyu center, 21/08/2018, 11:46 AM)

Another respondent said that,

"For me, I am a fisherman, so I work at night when the weather is very cold…Even if you wear many clothes, you must feel cold… At times, you can be warm but your legs are in water inside the boat… Malaria can enter the body through any part… When your legs are not covered and you are in the boat, when you come out of the water you get infected with malaria because of the cold". (Male Respondent: FGD, Mukuyu Centre, 21/08/2018, 11:46 AM).

A male respondent said that,

"Malaria is very frequent here because we live near the shores of the lake so we experience cold weather throughout… Secondly, the water we are drinking is not clean thus leading to frequent malaria episodes". (Male Respondent: FGD, Nyandiwa Health Centre, 21/08/2018, 8:50 AM)

Another Respondent also added that,

"Malaria enters the body in many ways. Sometimes you may have a rumbling stomach after which you will discover that malaria has entered your body". (Male Respondent: FGD, Mukuyu centre, 21/08/2018, 11:46 AM).

The responses relating malaria to cold indicates that the respondents did not understand the mechanisms of malaria infection which is mainly a bite from

mosquitoes. This is a revelation that scientific knowledge of disease exists along with cultural or alternative modes of explaining malaria infections that exist among the people.

4.2.2 Definition by Seasonality

Malaria is also associated with certain seasons of the year. Some respondents associated malaria with the rainy season, hot weather, dirty environment and a time when crops are about to be harvested. The respondents also cited the month of February until June as the periods when frequent malaria episodes were experienced. This was so because during these periods, a majority of farmers have crops on the farm and as a result, mosquitoes have very many hiding and breeding places thus contributing to high infections. The Seasonality of malaria has been reported differently based on regions. In a study conducted for two consecutive years it was reported that vectors were abundant in April, July and September in the first year while in the second year, the vectors were abundant in May, September and October (Dery, 2010). In another study conducted by (Samdi, 2012) it was reported that malaria incidences were recorded in September and reduced during dry seasons of March and April. The quotations below illustrate individual views on malaria and when it occurs.

> *"Malaria is very frequent in the area surrounding the lake because there are many bushes on the shores of the lake, mosquitoes have a breeding place… secondly… malaria is also very frequent during the rainy season."(Male Respondent: FGD, Nyandiwa Health Centre, 21/08/2018, 8:50 AM).*

Another respondent added that,

> *“I have noticed that between March and April, malaria is very frequent…This is because during this period, we experience a lot of rains in this area, weeds and bushes grow very fast” (Male Respondent: FGD, Nyandiwa Health Centre, 21/08/2018, 8:50 AM).*

Another respondent also added that,

> *"The plastic containers that people use and throw away at times retain water and act as breeding sites for mosquitoes, therefore, contributing to an increase in mosquitoes". (Female respondent: FGD, Mukuyu Centre, 21/08/2018, 11:46 AM).*

The above findings concur with those of Attu and Adjei (2018) in Ghana whose respondents attributed malaria breeding to hot weather, poor environmental management habits and stagnant water. Studies also agree that rainfall, humidity and temperatures influence the development of parasites, the survival of the vectors and their biting rates, therefore, increasing malaria transmissions (Chitunhu & Musenge, 2015; Githeko, Ototo, & Guiyun, 2012; Patz & Olson, 2006).

4.2.3 Definition by the Effects.

The researcher analyzed the respondents' definition of malaria illness through the effects that it had on them physically and socially. The analysis of the physical effects was done by analyzing the ability of the respondent to identify the symptoms themselves or through the help or others in their social networks.

4.2.3.1 Definition by Physical Effects of the Symptoms.

The researcher analyzed respondents' ability to identify malaria symptoms by themselves or through social networks. The variables generated multiple responses as presented in Table 4.3.

Table 4.3: Malaria Symptoms.

Variable	Frequency		Frequency		Missing		Total
Symptoms/signs	Yes	%	No	%	No.	%	No.
1. Headache	208	61.9%	126	37.5%	2	0.6%	336
2. Fever	205	61%	129	38.4%	2	0.6%	336
3. Vomiting	151	44.9%	183	54.5%	2	0.6%	336
4. Chills	55	16.4%	279	83%	2	0.6%	336
5. Convulsions	21	6.3%	313	93.2%	2	0.6%	336

Results in Table 4.3 indicate that the most common symptoms associated with malaria were fever (61%) and headache (61.9%). Vomiting was identified by 44.9% of the respondents. Chills and convulsions were represented by 16.4% and 6.3% respectively. Respondents least identified symptoms such as convulsions and chills. This implied that a majority of the respondents were either not aware of these symptoms or had not experienced them. These findings concur with those of (Deressa, Ali, & Enquoselassie, 2003; Kanyangarara et al., 2018; Kimbi et al., 2014; Laar et al., 2013; Sumari et al., 2016; Yaya et al., 2017).

The findings also revealed that a majority of the respondents were only aware of one or two symptoms of malaria with the most common symptoms being identified as

headache, fever and vomiting. Other additional symptoms mentioned during FGDs by respondents included joint pains, nausea and loss of appetite among others. The results on knowledge of symptoms were similar to those of KII and FGDs. A male respondent in the focus group discussion had this to say,

> *"I feel pain in my body, pain in my joints, cold, then later I experience headache". (Male respondent: FGD, Mukuyu Centre, 21/08/2018, 11:46 AM)*

Another respondent added that,

> *"I suffered from malaria recently… When malaria wants to get into your body or has already gotten into your body, you feel very tired… When you stay for a whole day you start experiencing fever… This then tells you that you are suffering from malaria". (Male respondent: FGD, Nyandiwa Health Centre, 21/08/2018, 8:50 AM)*

Other studies supporting respondents' familiarity with mild symptoms of malaria such as fever, headaches and vomiting include those of (Adetola, Aishat, & Olusola, 2014; Adoka et al., 2011).

4.2.3.2. Definition by the Source of Knowledge.

The researcher analyzed the respondents' source of knowledge in the definition and identification of illness because when it takes long to define the illness then there could be delayed action while on the other hand, if it is identified quickly then there can be quick action on the symptoms. The results are presented in Table 4.4.

Table 4.4: Source of Knowledge of Malaria.

Source of knowledge	Yes	%	No	%	Others	%	Total
1. Health care worker	236	70.2%	84	25.0%	16	4.8%	336
2. past experience	54	16.1%	264	78.6%	18	5.3%	336
3. Lay referral	26	7.7%	294	87.5%	16	4.8%	336
4. Family	24	7.1%	296	88.1%	16	4.8%	336

From the results in Table 4.4, 236 (70.2%) of the respondents got the information that they or the members of their households were suffering from malaria from professional healthcare workers in health facilities and the community health volunteers. One of the CHVs had this to say,

> *"When someone comes to me, the first thing I do is to test… After testing, I monitor the situation, if I don't have the rapid diagnostic test kit, he or she can explain to me how he or she is feeling… We also have thermometers, which we use to measure the temperature… If the temperature is too high, I can just record what he or she is explaining then make a referral to the nearby health facility but before I refer I must test the patient".(Female Respondent: KII, Nyatoto Health Centre, 20/08/2018, 3:15 PM).*

Another respondent had this to say,

> *"The hospitals came up with the idea that gave the community health volunteers (nyamrerwa) the work of testing in the community… After doing tests on people, the test outcomes can either be positive or negative… At that point is when we can be able to know we are suffering from malaria during the rainy seasons and*

also when there are no rains". (Male Respondent: FGD, Nyandiwa Health Centre, 21/08/2018, 8:50 AM).

The above findings concur with those of (Amari-Omaka & Obande-Ogbuinya, 2016; Kimbi et al., 2014; Laar et al., 2013) who found out that respondents got their information from health workers in health facilities. The idea of using community health volunteers has helped in bridging the gap not filled by medical personnel since through them, health care services have been brought closer to the people. The CHVs are trained and can test and administer drugs for malaria and make referrals where the situation is beyond their control.

The choice of a health care facility or a community health volunteer as the first source of knowledge implies that they are effective in the management of malaria and in congruence with the biomedical model of illness. It also shows that the respondents had learned from experience that other methods of managing malaria are not as effective and efficient as the treatment from professional health care workers or the community health care workers.

Past experience also played an important role in identifying the illness in that 16.1% identified it through past experience. Past experience enabled them to identify the symptoms and make judgments on the disease. A female respondent had this to say,

"The way we know malaria in this area other than being tested is that people feel very cold, it also brings fever… We see these things (signs) from someone even before they are tested… In this area, that is how we identify malaria… Most of the time it is confirmed in the hospital when they are tested". (Male respondent: FGD, Nyandiwa Health Centre, 21/08/2018, 8:50 AM)

Another 24 (7.1%) of the respondents would consult their family members for advice in the event of malaria illness. Results on the source of knowledge through the lay referral system revealed that 26 (7.7%) of the respondents would get their information from lay-persons since they were considered important in making decisions in the community.

The choice of past experience, family advice and lay referral systems as sources of information in the definition and construction of malaria illness introduce a social aspect of the disease that has not been exploited by literature as compared to other sources of information such as radio, television and print media. Past experience, family and lay referral systems are all parts of symbolic interaction model of constructing illness through meanings that arise out of the social interactions of individuals in groups in the social environment (Aksan et al., 2009). This, therefore, implies that for better results there needs to be the inclusion of social fabrics of the community through training to enhance the level of knowledge of the disease to help in the timely management of the disease.

4.2.3.3 Definition by the Effect on Social Roles.

The researcher sought to find out whether malaria had any effects on the social roles of the respondents. The findings on the effect of malaria illness on social roles are presented in Figure 4.1.

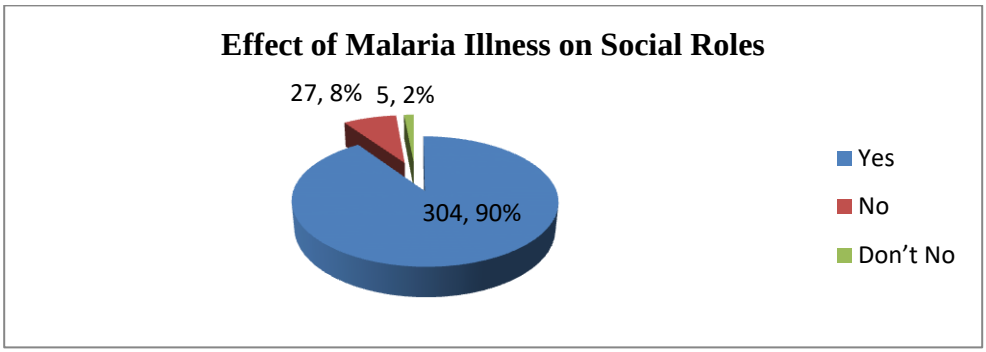

Figure 4.1: Effect of Malaria Illness on Social Roles.

From figure 4.1, a majority of the respondents representing 304 (90%) indicated that malaria illness affected their social roles. The type of social role affected during the period when the respondents were ill is presented in table 4.5.

Table4.5: Effect of Malaria Illness on Social Roles.

Social roles by respondents	N	%
Unable to work	82	80
Unable to provide for the family	7	5
Unable to socialize	7	7
Unable to participate in community activities such as '*barazas*'	2	2
Unable to participate in religious activities.	2	2
Total	100	100

Findings in Table 4.5 reveal that 82% of the respondents indicated that when sick, they were not able to work. Work, in this case, involved the performance of their normal duties or chores and performance on work that was likely to bring income to the family. This implies that work was an important role in the community. Another 7% of

the respondents indicated that they were not able to socialize. This was attributed to the symptoms of malaria which left a person tired. Provision for the family was also considered an important role with 7% of the respondents indicating that when they were ill their families were deprived of basic needs.

Another 2% of the respondents indicated that they were unable to participate in activities in the community such as attendance of meetings '*barazas*' called by the area chiefs as such they missed on important decision-making processes. Another 2% indicated that their participation in the church was hampered. Responses from FGDs had one discussant saying:

> *"When I am ill my work gets affected… In my case, I am a single parent with a small child… I am a tailor, when I am sleeping (because of illness) my work stops… I cannot work when unwell... I must face difficulties". (Female Respondent: FGD, Mukuyu Centre, 21/08/2018, 11:46 AM).*

Another respondent added that,

> *"When I am sick, my duties are affected… There is no way I can go and do any kind of job… So my children sleep hungry". (Female Respondent: FGD, Mukuyu Center, 21/08/2018, 11:46 AM).*

A male respondent had this to say,

> *"In terms of work, when I am sick lying on the bed, work stops… We are fishermen…When you go fishing… you earn money which you use to cater for family needs... When you are sick there is no money… In the end, the little money you had ends up in the hospital to cater for treatment… There is no*

money coming in". (Male respondent: FGD, Nyandiwa Health Center, 21/08/2018, 8:50 AM)

Another respondent added that,

"When unwell, I don't talk the way I usually do... Sometimes I may speak with a low tone… The customers will take it that I have a bad attitude… They may want to buy many items but because of that, they will minimize and proceed elsewhere to buy... This affects me a lot". (Male Respondent: FGD, Nyandiwa Health Centre, 21/08/2018, 8:50 AM).

The inability to perform different activities as a result of malaria illness confirms Suchman Stages of Illness and Medicare Model which identifies stage one as the symptom experience. This stage is characterized by feelings of pain and discomfort. This is followed by recognition of the physical symptoms and the emotional response which arises out of the concern of the individual on the social implication that the illness has on their lives including the disruption in the ability to function in the community (Suchman, 1965).

In any given society, group members have a shared social identity which guides an individual behavior. These social identities come with social roles that are governed by certain norms within the group (Jones & Williams, 2004). It is also important to note that when an individual is ill, he or she does not exit their normal roles but rather substitute their normal roles with the newly acquired role called the sick role. The sick role has its obligations and exemptions on the sick person and the community at large. Such exemptions and obligations are culture-specific and shared by the community where the sick person ails.

4.2.3.4 Definition Based on the Effects of Community Members Perception

The researcher analyzed the perception of community members towards the individuals who were suffering from malaria. The findings on the effect of malaria on perception are presented in Figure 4.2.

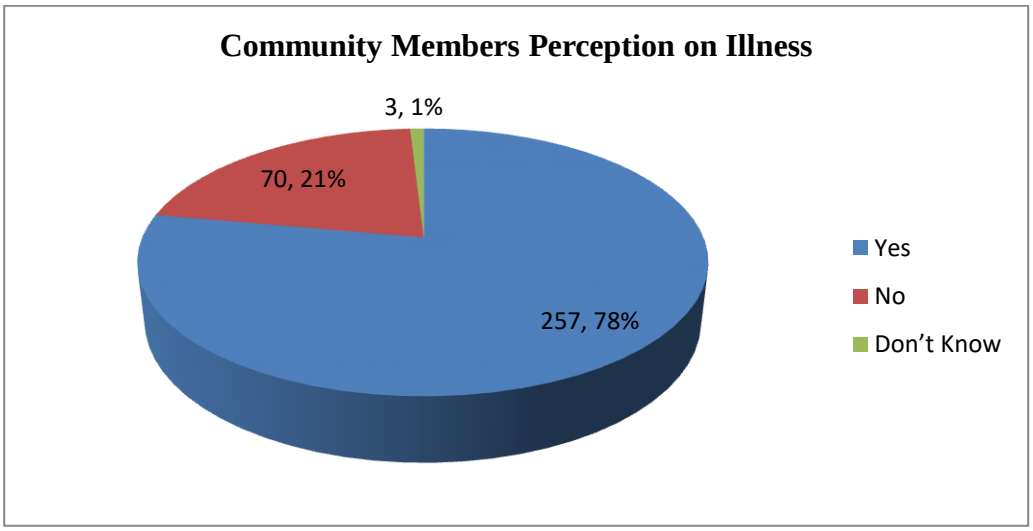

Figure 4.2: Perception of malaria illness.

The findings in figure 4.2 show that 78% of the respondents agreed that community members had different perceptions of their illness during the period they suffered from malaria illness. From the FGDs, a majority of the respondents indicated that illness which leads to the weakening of the body would lead to suspicions that an individual is suffering from HIV/AIDS. This implied that stigma was still very high. This is a factor that could drag the gains that have been made in the fight against malaria considering the fact that Homabay County has very high HIV/AIDS prevalence standing at 26% (CIDP, 2012). Those who were ill would therefore not want to be involved in the community for the fear of being judged harshly. This, therefore, means that the ill persons seclude themselves until they feel well. Seclusion, in this case,

indicates that there is little or no attention given to the sick person meaning that there is no assumption of the sick role. A female respondent had this to say,

> "*When you are sick and you stay alone, you will be forced to work even if you are weak… At times you open your business even if you will sleep there so long as the door is open a customer can get in... The people who will be coming to visit you might say that the way you are growing thinner and sleeping, you could be pregnant or suffering from HIV/AIDS and that you need to be tested… They may say a lot of things until you develop some bitterness with your neighbors". (Female Respondent: FGD, Mukuyu Health Centre, 21/08/2018, 11:46 AM).*

Other respondents also noted that in the event of frequent illness, an individual is seen as unproductive and lazy. This, therefore, implies that sickness is seen as a form of deviance in as much as it cannot be equated to crime. For sickness not to be seen as a way of escaping duties there is a need for the community to exercise control over the sick person to minimize the disruptions that arise out of the inability of the person to perform their normal duties. The community should, therefore, assist the sick person in their pursuit of wellness through supporting them so that they can return to their normal duties. Labeling individuals as lazy therefore determine how the person is treated. A fisherman had this to say,

> *"In this area, there are many ideas that people have… Sometimes your boss might think that you don't want to go to work… For someone like me who drinks alcohol, they might say that I still have hangovers… Your close family members are the ones who feel the pinch because your provision for the family will either*

decline or stop… Their worry is whether you will be able to recover fast and continue providing for them". (Male Respondent: FGD, Nyandiwa Health Centre, 21/08/2018, 8:50 AM).

From the above quotations, it is evident that illness is not only an objective experience but also a subjective one which involves interpretation of the origin of the illness and the symptoms that come with the illness. Perception, therefore, shapes behavior through the meaning that people have regarding the illness. It also shapes how the ill person attributes to the experiences in the social environment (Jones & Williams, 2004).

4.2.3.4 Definition by Susceptibility

The researcher sought to find out whether the residents considered themselves at risk of contracting malaria. The knowledge of susceptibility is important because it helps in creating a better understanding of the natural mechanism of the host defense against the malaria parasite. This, therefore, helps in provisions of new and better targets for the interventions of the disease (Fortin, Stevenson, & Gros, 2002). The findings on susceptibility are presented in Figure 4.3.

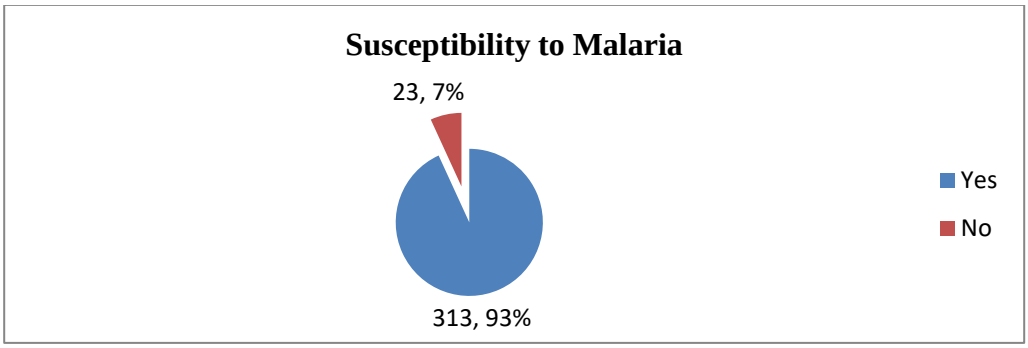

Figure 4.3: Susceptibility to malaria.

Findings in Figure 4.3 show that 313 (93%), which constituted a majority of the respondents had suffered malaria in the last 6 months. This implied that the residents were in a high-risk area with frequent malaria infections. Some respondents also cited the recurrence of malaria among members of their households which is an indication of the changing trends in the disease. A female respondent said that,

> *"My whole family suffered from malaria… Our four children together with my husband and I". (Female respondent: FGD, Mukuyu Centre, 21/08/2018, 11:46 AM).*

Another male respondent added that,

> *"I have been suffering from malaria…It keeps on recurring". (Male Respondent: FGD, Mukuyu Center, 21/08/2018, 11:46 AM)).*

Fortin, Stevenson, and Gros (2002) note that the recurrence of the malaria parasites in the body reveals an evolving nature of malaria parasite. This makes malaria a complicated illness characterized by drug resistance. These are challenges that could draw back the gains that have been made in fighting malaria. There has been a recent development of malaria vaccine. Clinical trials were conducted in Kenya by the Kenya Medical Research Institute (KEMRI) in Junju area, Kilifi County. The vaccine has also been introduced to eight counties which include Homabay, Migori, Siaya, Kisumu, Kakamega, Vihiga, Bungoma and Busia for evaluation (KEMRI-Wellcome Trust, 2019).

4.2.3.5 Definition by Severity

The researcher sought to find out whether the residents defined malaria as a serious condition. Severity was viewed as important in the analysis because when respondents identify malaria as a serious problem by themselves then interventions can work best as compared to designing interventions and imposing on them. The findings are presented in Figure 4.4.

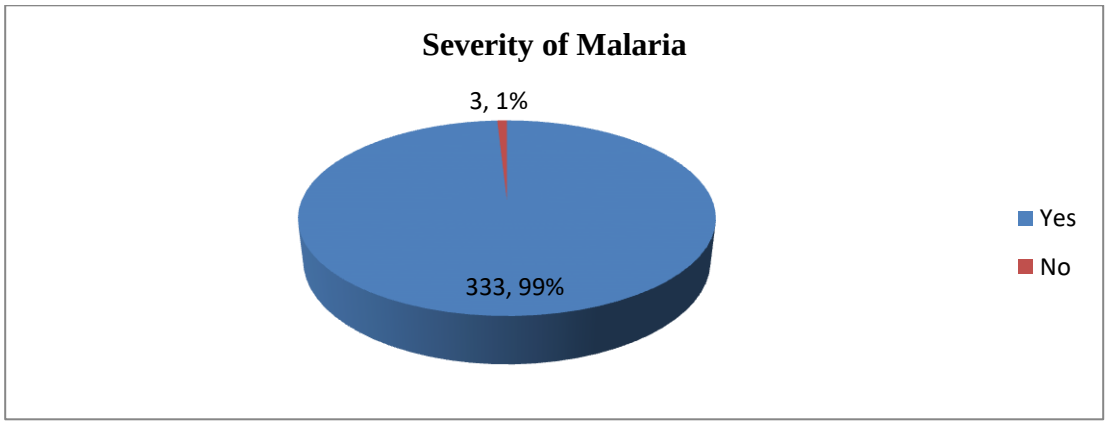

Figure 4.4: Severity of malaria.

Malaria was considered as serious by almost all the households in this area 333 (99%). Those who considered it a serious disease noted that they had suffered from malaria recently and indicated that if the disease is not timely managed then it could lead to death. This, therefore, implies that efforts to control malaria can, therefore, be successful because of the fear of the threat that it poses to households.

According to Spielman (2003) malaria is a unique disease because it is rooted in the communities within the villages. Deressa, Ali, and Enquoselassie (2003), in a study conducted in Ethiopia indicated that poor households in rural areas had the heaviest burden of malaria. This state of malaria in communities, therefore, prompted

households to develop behavioral patterns that helped them in dealing with the reality of the disease. The seriousness of malaria is seen in its potential to cause anemia, kidney failure and in worst cases death with greater risk lying in children and pregnant women (WHO, 2016).

It is also important to note that 3 (1%) of the respondents did not consider malaria illness as serious. The researcher noted that those who did not consider it as serious were those respondents whose households had not had an episode of illness recently. This has an implication in that in case they suffer from malaria, they may not bother to seek treatment or if they do, they may do it when the disease has progressed.

Despite the dangers that malaria poses to households, some community members are either not aware or are ignorant of the challenges that malaria poses to households. An understanding of the severity of a disease and its management has a great impact on the success of programs geared towards malaria control and prevention. Key informant interviews also indicated that malaria was very common in the area and indicated that the process of spraying of houses to reduce mosquito breeding in the area had not been well received since that they claimed that mosquitoes had actually increased. Another challenge of bedbugs had also been witnessed with residents attributing it to the residual spraying of houses as cited by a key informant:

> *"Spraying of houses brought a lot of problems… Mosquitoes increased when it was done 5 years ago and another challenge of bedbugs came up… We had a difficult time in the field because everybody was claiming that we have come to bring bedbugs as opposed to spraying mosquitoes… They were saying that they*

don't want bedbugs… We had to do door to door awareness… Eventually, some people accepted their houses to be sprayed while others refused". (Female Respondent: KII, Mukuyu Center, 21/08/2018, 12:24 PM)

Another respondent said that*:*

"My house was sprayed… Since then, mosquitoes have increased as compared to the way it was before… You keep hitting mosquitoes 'taa taa' (Sound produced from hitting) until you go to bed… We don't know what the problem is because we were told by the community health workers that the concoction would kill mosquitoes for 9 months… Right now mosquitoes are more than how they used to be before spraying". (Female Respondent: FGD, Suba Level 4 Hospital, 22/08/2018, 11:14 AM)

4.3 Health-seeking Behavior for Malaria Illness.

The researcher considered several factors in health-seeking behavior which included the number of days taken to act on the symptoms, the type of action taken, completion of medication, the perceived cost of treatment and distance to the health care facility.

4.3.1 Number of Days taken to Act on Symptoms

This variable sought to find out the length of time respondents took to act on symptoms. This would help in determining the management of disease which if not done in time could lead to a loss of life.

Table 4.6: Number of Days Taken to Act on Symptoms

Number of days Taken	Frequency	Percent
1-2 Days	218	64.9%
3-4 Days	87	25.9%
More than 5 days	30	8.9%
Missing	1	0.3%
Total	336	100%

Results in Table 4.6 indicate that more than three-fifth 218 (64.9%) of the respondents would act on the symptoms between 1-2 days. Another 87 (25.9%) of the respondents would act on the symptoms between 3-4 days while those who would act on the symptoms when it had taken more than 5 days were 30 (8.9%). These results imply that a majority of the respondents were aware of the consequences of the disease and as such responded promptly to manage it. This finding concurs with that of a study conducted in Ethiopia in which the researcher found out that 61.3% of caregivers sought treatment of children in 24 hours of the onset of symptoms such as fever (Mitiku & Assefa, 2017).

Delay in seeking health care services was noted among the respondents who would take action after 3 days since by this time the illness would be at an advanced stage thus posing a challenge in its management. The World Health Organization recommends that the treatment of malaria with antimalarials should be administered within 24 hours of the onset of fever to effectively cure the disease and prevent complications that can be life-threatening (WHO, 2015). A key informant pointed out

that malaria symptoms are supposed to be acted on immediately and considered a delay of more than 24 hours to be very dangerous to an individual. The focus group discussions also revealed that some respondents act immediately while others do not.

A female respondent said,

> *"My husband can insist that I go to the hospital… He can even go to the extent of giving me money but when he comes back in the evening, he will find out that I did not go to the hospital and that I am still taking Panadol… Seeking treatment on the same day is very difficult for me… I can take some two days taking Panadol until I feel that the illness is beyond Panadol that's when I seek another alternative".(Female Respondent: FGD, Suba Level 4 Hospital, 22/08/2018, 11:14 AM)).*

Another respondent said,

> *"You can take Panadol for some time… When it persists then you can now go to the hospital."(Male Respondent: FGD, Nyandiwa Health Centre, 21/08/2019, 8:50 AM)*

Another respondent also added that:

> *"For me, if it starts with my child, I start with Panadol...I give her for two to three days... If it does not help, I take her to the hospital… As for me, I don't take medicine… I persevere to see how it goes… If it refuses to go, I proceed to the hospital". (Female Respondent: FGD, Suba Level 4 Hospital, 22/08/2018, 11:14 AM).*

Sonkong, Chaiklieng, Neave, and Suggaravetsiri (2015), note that delay in seeking care is risking severe complications and malaria transmissions. Delay can be

due to lack of knowledge attributed to lack of experience of complicated malaria cases. The ‘wait and see’ attitude shows a mismatch between knowledge, practice and behavior. Sonkong et al. (2015), note that delay in seeking care is due to factors such as self-treatment, lack of support from a social group, bad side effects of antimalarial drugs and lack of history of death especially for mothers with children under the age of 5 years. Other factors such as distance to the health facilities could also contribute to delay (Getahun, Deribe, & Deribew, 2010). For this study majority of the respondents did not live very far from the health facilities. Lack of funds also contributes to delay. A female respondent had this to say:

> *"When am suffering from malaria, I can go to the hospital if I have the money, but when I don't have money, I will wait until I get the money then I will go to the hospital”(Female Respondent, FGD, Suba Level 4 Hospital, 22/08/2018, 11:14 AM).*

From the above response, it is evident that lack of funds may be a factor in delayed treatment of malaria disease thus posing a challenge to prompt treatment and management of malaria illnesses. Other studies have also reported low income as a contributing factor to delay in treatment (Gerald, 2015; Romay-Barja et al., 2016).

4.3.2 Acting on the Symptoms

This variable sought to find out the various choices that respondents opt for in the event of illness ranging from buying drugs from shops, visiting health facilities, giving herbs and taking no action. Findings are presented in Table 4.7.

Table 4.7: Action Taken.

Action taken	Frequency	Percent
Buy drugs from local shops and chemists	196	58.33%
Visit health facility	121	36.01%
Give herbs	11	3.27%
No Action	8	2.38%
Total	336	100

The results in Table 4.7 indicate that slightly more than half 196(58.33%) of the respondents bought drugs from local shops and chemists. Such drugs included painkillers and antimalarials. This implied that these respondents were self-medicating based on their interpretation of the symptoms of malaria, a factor that poses a big challenge in the timely diagnosis and treatment of malaria disease. The respondents also indicated that in case there is no improvement then they would present themselves to a health facility. A female respondent had this to say:

> *"When I feel the symptoms of malaria, I can take Panadol… If I don't improve, then I can go to the hospital". (Female Respondent: FGD-SUba Level 4 Hospital, 22/08/2018, 11:14 AM)*

The above finding concurs with the results of Chipwaza et al., (2014) who noted that self-medication was a common practice adopted by respondents who cited the cost of drugs and distance to health facilities as the main reasons why they opted for it. Those who visited health facilities were 121 (36.01%) of the sampled population a number that is slightly lower than those opting for over the counter drugs. The

respondents who opted for over the counter drugs justified their action by saying that they opted for quick service at the chemist as opposed to the health facilities where they would wait in long queues to be treated. One male respondent had this to say:

> *"The reason why this is happening is that this area has a very high population… You may go to the health facility and get very long queues yet we are very busy… Someone is a fisherman while the other is a businessman and has closed his shop… You, therefore, decide to go to the chemist and buy a pain killer to deal with the illness quickly because going to the facility is going to take time… At times you may stay the whole day without doing anything". (Male Respondent: FGD, Nyandiwa Health Centre, 21/08/2018, 8:50 AM)*

The ability of the respondents to identify the symptoms also contributed to respondents opting for over the counter drugs.

> *"The way it is happening here is that when you go to the hospital, you spend a lot of time waiting… The more you wait the more the illness progresses… We go to the chemist and after being given a painkiller you also say that you are suffering from malaria… We know that if you are experiencing joint pains and headaches then you are suffering from malaria… There are drugs called AL (Artemether Lumefantrine) that we are usually given together with Panadol… That is what we use". (Male Respondent: FGD, Nyandiwa Health Centre, 22/08/2018, 8:50 AM)*

Drugs bought from the shops were also considered in the management of symptoms with the most common symptom being fever and headache. The most common drugs bought were painkillers such as Panadol, 'Brufen', 'Kaluma' and

‘Diclofenac'. Community health volunteers also mentioned that they advise on the use of painkillers in the management of headache. They also noted that in case the headache persists then the person should seek medical care. Continuous use of drugs and antimalarials bought from shops and chemists also poses a challenge in the diagnosis of malaria and contributes to drug resistance which poses a challenge to the fight against malaria. A female key respondent had this to say:

> “*Some people buy antimalarials from the chemist without being tested… Even the painkillers they use sometimes interfere with the results for rapid diagnostic test (RDT) because someone may have used a painkiller such as ‘Hedex' so when the person comes for testing, the RDT will at times give a negative result yet they are positive". (Female Respondent: KII, Nyatoto Health Centre, 20/08/2018, 3:15 PM)*

Those who mentioned herbs were 11 (3.27%) noting that they would do so when the person showed symptoms such as vomiting. Willcox and Bodeker (2004) note that one-fifth of patients use herbs in the treatment of malaria in countries classified as endemic. Herbs used in this process were from neem tree commonly known as ‘*Mwarubaine*’ and Aloe Vera locally known as ‘*ogaka*' in the local language since they were considered effective in treating illnesses that arose out of vomiting. A female respondent had this to say:

> *"When I tell my husband that I am not feeling well, he goes and gets ‘Mwarunaine' which I boil and drink… After drinking, I can stay up to 3 days monitoring my condition… If there is no change I go to the hospital". (Female Respondent: FGD, Suba Level 4 hospital, 22/08/2018, 11:14 AM).*

Contrary to the respondents, a key informant indicated that she had not encountered persons using herbal treatment in malaria management but painkillers. She had this to say:

> *"I have not encountered herbal treatment but they like using Panadol… For them, they know that if you are suffering from malaria what you need to do is to go and buy Panadol at the chemist… When these people present themselves at the health facility, you discover that they have used so many 'panadols'" (Female Respondent: KII, Mukuyu Centre, 21/08/2018, 12:24 PM)*

Those who did not take any action in the event of illness were 8 (2.38%) and indicated that they were guided by their spiritual faith and the belief that their 'God' was the giver of life and as a result, he would heal them. Other studies that have explored spiritual faith in healing include (Jombo et al., 2010 and Sequeira, 2016).

4.3.3 Completion of Dose.

Completion of dose bought or prescribed was considered important in analysis. The data on the completion of dose were analyzed both quantitatively and qualitatively as presented. Quantitative findings are presented in Figure 4.5.

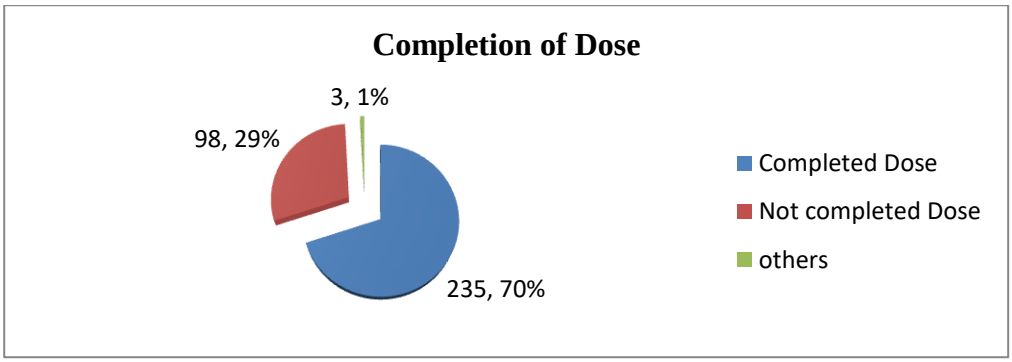

Figure 4.5: Completion of Dose.

Quantitative data on the usage of drugs revealed that a majority 235 (70%) of the respondents who bought drugs from chemists and those who had received drugs at the health facility indicated that they would complete the dosage while 98 (29%) of the respondents indicated that they would leave the drugs when they saw signs of improvement thus not completing the dosage as required. These findings concur with (Chuma et al., 2010a) who noted that adherence to dosage was a major challenge in malaria management. Indeed a male respondent said:

> *"I am a fisherman… I am a very busy person…When I feel better and the way those 'things' (malaria drugs) are many, they are more than 20… When I take like 6 of them and feel better… I feel my body is okay, the rest I put on top of the bed". (Male Respondent: FGD, Nyandiwa Health Centre, 21/08/2018, 8:50 AM).*

An incomplete dosage is also associated with the taste of malaria drugs. The respondents indicated that malaria drugs are bad and bitter. A male respondent had this to say:

> *"The truth of the matter is that I don't always finish the medicine… When I feel I am recovering, I leave the drugs at that point because those drugs are bad and bitter". (Male Respondent: FGD, Nyandiwa Health Centre, 21/08/2018, 8:50 AM).*

The above response indicates non-adherence to malaria drugs. Different studies have documented non-adherence as a challenge in the management of malaria. In a study conducted in Kenya, a caregiver reported that the child did not finish the medicine because he or she did not like it. Other respondents also cited improvement as the

reason why they did not finish the dose (Ogolla, Ayaya, & Otieno, 2013). In another study conducted in Garissa County, the researcher observed that 39.7% of the 195 patients who were followed up during a three-day course of treatment did not adhere to treatment (Gore-Langton et al., 2015).

When asked what they would do with the remaining drugs they revealed that they would keep the drugs for future use in the event of another malaria illness. Others indicated that they would bury the remaining drugs in the soil. Others would throw them away in pit latrines while some indicated they would give them to their neighbors when unwell. A male respondent had this to say:

> *"I have never finished medicine… When I feel I am recovering, I stop taking the drugs… The remaining drugs are kept… A time will come when I will feel the same way then I will continue from where I left". (Male Respondent: FGD, Nyandiwa Health Centre, 21/08/2018, 8:50 AM)*

The above finding paints a dark picture in the fight against malaria. The idea of continuing with a dose left from the previous treatment of malaria episode poses a challenge in the management of malaria since it contributes to under-dose and can bring drug resistance due to the failure of treatment. It also implies that there is a lack of knowledge on how prescribed drugs should be used and the resultant effects in a case whereby a person is not able to complete their dosage.

4.3.4 Health-seeking Behavior and Perceived Cost of Treatment.

Payment of health services was also considered an important factor in determining whether an individual will seek healthcare services or not. Findings are presented in Figure 4.6.

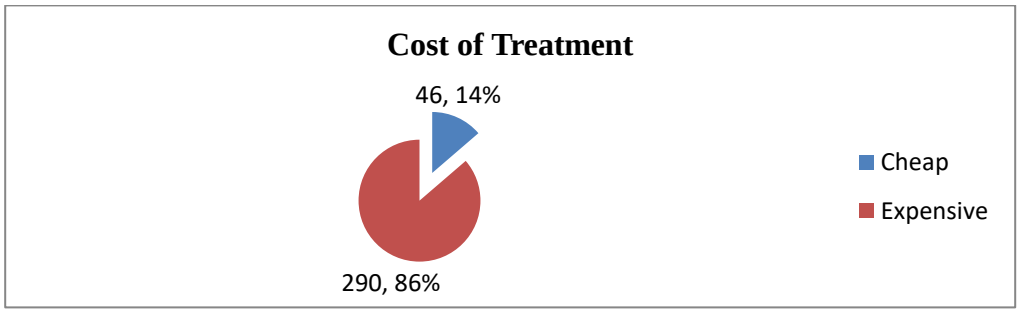

Figure4.6: The Perceived cost of treatment

Results in Figure 4.6 indicate that 290 (86%) of the respondents considered payment for treatment as expensive. This finding concurs with that of Chuma et al., (2010a) who found out that 61.5% of the respondents did not seek treatment because of the cost. The respondents who considered using private facilities noted that they opted for them because public facilities have no drugs and that they mainly offered painkillers. The remaining drugs would be prescribed after which they were asked to go and buy them outside the health facility. These were challenges they said they would avoid by visiting private facilities when they had money to pay for the services. One female participant had this to say:

> *"The problem we have is that we have very few medicines in the hospital…This is different from the past because when you came, you were treated, and medicines prescribed… You would be given all of them but nowadays, the doctor will treat you but will not be able to give you medicine because they are not available… You will be given painkillers and asked to buy the rest from outside the hospital" (Female Respondent: FGD, Suba Level 4 Hospital, 22/08/2018, 11:14 AM).*

Another 46 (14%) of the respondents' considered the cost of treatment cheap. A key informant also noted that treatment for malaria is cheap in public health facilities and that the cost would only go up where treatment goes to another level. In as much as treatment for malaria is cheap some people are still not able to pay the required amount of between 20 to 50 Kenyan shillings as indicated by a key informant in the following response:

> *"The public facility that we have here was opened recently but it was decided that patients pay 50 shillings to cater for other services… So paying 50 shillings is also a challenge because they don't pay… Very few people are the ones who pay". (Female Respondent: KII, Mukuyu Centre, 22/08/2019, 12:24 PM)*

Cheap cost of services offered at the public health facility was also seen to undermine the quality of services. One respondent had this to say:

> *"For me, I like public facilities even if they give me 'Brufen'… This is because sometimes I may not have money to go to a private facility. So I usually come here and given 'Brufen'… God also protects me sometimes I just recover". (Female Respondent: FGD, Suba Level 4 Hospital, 22/08/2019/ 11:14 AM)*

4.3.5 Decision Making and Health-seeking Behavior for Malaria.

Decision making was analyzed through consultation in the event of illness. Consultation plays an important role in the choice of action, the choice of where and when to seek health care services. The analysis of consultation was done by analyzing multiple responses of the respondents. These findings are presented in Table 4.8.

Table 4.8: Consultation for Malaria

Category	Yes	Percent	No	Percent	Missing	Percent
Respondents who consulted	319	94.7%	15	4.5%	2	0.6%
Consulting spouse	150	44.6%	167	49.7%	19	5.7%
Consulting relatives	193	59.4%	143	42.6%	0	0
Consulting neighbors	119	35.5	217	64.6%	0	0
Consulting relatives	193	59.4%	143	42.6	0	0

Results above reveal that 319 (94.7%) respondents consulted in the event of illness. This implies the lay referral system which is formed by the family, neighbors, and relatives among others play an important role in decision making in the community. The involvement of the lay referral system is in congruence with Suchman Stages of Illness and Medical Care Model which notes that duration taken in consulting to make decisions is what determines whether a person will recover quickly or not (Suchman, 1965).

Respondents who consulted their partners constituted 44.6% while 35.5% consulted their neighbors. Another 59.4% consulted their relatives. Findings from the FGDs indicated that some married women consulted their husbands partly because they lacked financial resources thus were not in a position to make decisions on where to take the sick persons for treatment as evident in the conversation:

"*I consult my husband because he provides for the family… I cannot decide where to take the sick person, for example, my children because I may choose*

where treatment is expensive and he may not like it… He decides then we follow". (Female Respondent: FGD, Suba Level 4 Hospital, 22/08/2019, 11:14 AM)

Consultation serves as an important aspect in decision making and therefore shows that illness is not an individual affair but also a social affair where different people are involved for advice on the kind of action to be taken and where to seek help depending on the situation at hand. Consultation within the households helps in making important decisions within the family setup. Such decisions revolve around finances which therefore will help in making decisions on the appropriate care.

4.3.6 Health-seeking Behavior and the Distance to the Health Facility.

Distance to health facilities has often been a challenge to those seeking healthcare services and may also affect the length of time that an individual takes in seeking health care services. The findings on the distance to the health facility are presented in Figure 4.7.

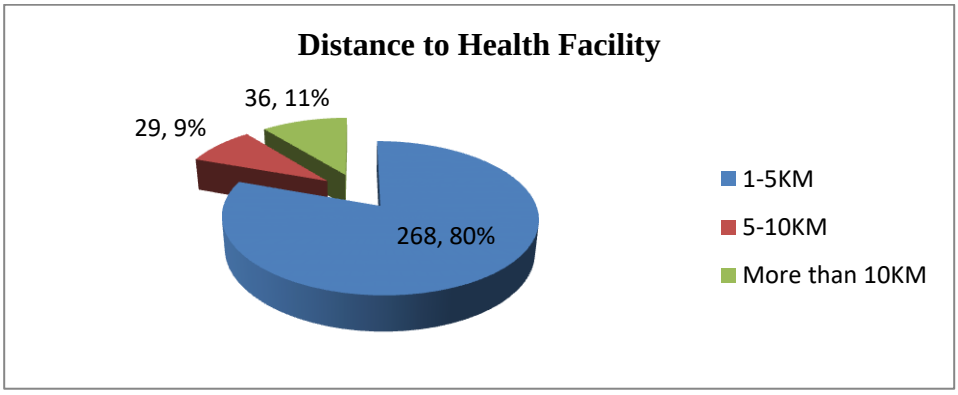

Figure 4.7: Distance to Health Facility.

The findings in Figure 4.7 reveal that 80% of the respondents were living 1 to 5 kilometers away from a health facility. The respondents who were living between 5 to 10 kilometers away from a hospital represented 9% while those who were more than 10 kilometers away represented 11%. This, therefore, implies that a majority of respondents were near health facilities. A cross-tabulation of the distance to the health facility and action taken to cure ill health is presented in Table 4.9

Table 4.9: Cross-Tabulation of Action Taken Against Distance to Health Facility

Action Taken Against the Distance to the Health Facility					
		Distance to Health Facility			Total
		1-5 KM	5-10KM	More Than 10KM	
Action Taken	No action	7	2	0	9
	Bought drugs from local shops and chemists	155	17	23	195
	Gave herbs	3	2	6	11
	Visited health facility	103	8	10	121
	Total	268	29	39	336

Findings on the cross-tabulation of the action taken and the distance to the health facility revealed in Table 4.9 reveal that 155 bought drugs from local shops and chemists. Another 103 respondents visited health facilities while 3 respondents gave

herbs and 7 did not take any action. Regarding the distance to the health facility, 268 respondents indicated that they lived between 1 to 5 kilometers away from the hospital. Another 29 respondents lived between 5 to 10 kilometers away while 39 respondents were more than 10 kilometers from the health facility.

4.4 Relationships between the Definitions of Malaria Illness and Health-seeking Behavior.

This study found it important to analyze whether there is a relationship between the definitions of malaria illness and health-seeking behavior. Cross-tabulation was chosen for this analysis as captured in Table 4.10.

Table 4.10: Cross Tabulation of Definitions of Malaria Illness against Action taken

Definition of Malaria Illness	Action				
	No action	Bought drugs	Gave herbs	Visit health facility	Total
Mosquito bites	6	178	3	118	305
Others (supernatural forces, heat from the sun, drinking dirty water, Body contact and heat from the sun)	2	17	9	3	31
Total	8 (2.4%)	195(58)	12 (3.6%)	121(3%)	336(10%)

The findings above indicate that out of the different definitions on the cause of malaria, 8 (2.4%) of the respondents did not take any action in the event of malaria illness. This showed ignorance on the part of the respondents due to the dangers that malaria poses on their lives. Respondents, who indicated that they bought drugs from local shops or chemists, were represented by 195 (58%). Another 12 (3.6%) of the respondents gave herbs while 121 (36%) of the respondents visited health facilities for treatment.

These results imply that different respondents had their way of dealing with malaria illness with the most common way indicated by a majority of respondents being buying drugs and antimalarials from the chemist. Visiting the health facilities came second as indicated by respondents if the illness was not completely managed. Giving herbs was least chosen by respondents. This can probably be attributed to the knowledge and experience of the respondents that herbal medicine doesn't work in the treatment and management of malaria.

This study, therefore, established that respondents have a biomedical definition of illness since a majority of the respondents attributed malaria to mosquito bites. This biomedical association corresponded with the biomedical response through buying of drugs and also visiting the health facility for treatment. Largely malaria is defined by its causation but other factors may arise out of the occurrences in the social environment. In this regard, the response of malaria is in congruence with its definition in terms of causation.

The researcher also cross-tabulated different variables in health-seeking behavior such as action taken, usage of drugs, number of days taken to act on malaria symptoms against severity.

4.4.1 Severity and Number of Days taken to act on Malaria Symptoms.

Severity was important since the knowledge of the seriousness of the disease can help in determining how quickly someone can seek health care services. The results of the cross-tabulation of the seriousness of malaria illness and the number of days taken to act on symptoms are presented in table 4.11.

Table: 4.11: Severity of malaria against the number of days taken to act on malaria symptoms.

		Number of days taken to act on symptoms.			Total
		1-2	3-4	More than 5days	
Severity of malaria	Yes	216	87	30	333
	No	2	0	1	3
Total		218(65%)	87(26%)	31(9%)	336(100%)

From the findings in Table 4.11, 216 respondents considered malaria as a serious disease and therefore took 1 to 2 days to act on malaria symptoms while 87 respondents took 3 to 4 days to act. Another 30 respondents took more than 5 days to act. Generally, a majority (65%) of the respondents acted quickly to seek treatment for malaria illness while others showed a delay in acting on the symptoms a factor that could lead to more complications arising out of disease progression. These findings

concur with that of a study conducted in Ethiopia which found out that 71.9% of the respondents sought care for malaria in as much as only 19.8% respondents sought care in 24 hours of the onset of malaria symptom such as fever (Birhanu et al., 2016).

4.4.2 Severity of Malaria and Completion of Dosage.

The severity of malaria and the usage of medication important since this implied that there can be a success in interventions. These findings are presented in table 4.12.

Table 4.12: Cross-tabulation of severity against usage of all drugs

		Usage of all drugs		
		Yes	No	Total
Severity of malaria	Yes	233	97	330
	No	2	1	3
Total		235(71%)	98(29%)	333(100%)

The findings in Table 4.12 reveal that 233 respondents considered malaria as serious and therefore finished their medication while 97 of the respondents did not view malaria as serious but still finished their medication. Completing dosage shows that there is an increase in the level of knowledge in malaria treatment. These findings resonate with that of (De Souza et al., 2016) who found out that 77.8% of the respondents had finished their medication.

4.4.3 Consultation and Number of Days taken to act on the Symptoms.

Consultation is important because it determines how long to act on the symptoms to cure of malaria illness. The longer the time for consultation, the longer it takes to act on the symptoms thus a challenge in the timely management of malaria.

Findings on the cross-tabulation of consultation and action taken are presented in table 4.13.

Table 4.13: Consultation for malaria cases against Days of action on symptoms.

	Number of days taken				
		1-2 days	3-4 days	More than 5 days	Total
Consultation	Yes	206	83	29	318
	No	10	4	1	15
Total		216(65%)	87(26)	30(9%)	333(100%)

A majority of respondents who consulted took 1-2 days to act on the symptoms. Another 843 respondents took 3 to 4 days to act on the symptoms. Consultation reveals the importance of the family members and the lay referral system in identifying the disease and advising on the treatment options adopted in rectifying the situation. Consultation, therefore, resonates with Suchman stages of illness and medicare model (Suchman, 1965). However, the longer the consultations take, the longer it takes to seek professional help (Rogers et al., 1997).

CHAPTER 5: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a summary of the research findings according to the objectives of the study, conclusions of the study, recommendations and areas for further research. The study was conducted in Suba South constituency in Homabay County. The study aimed documenting the influence of definitions of malaria illness on health seeking behavior in Homabay County.

5.2 Summary of the Findings

5.2.1 Socio-demographic Characteristics of the Residents of Homabay County.

The Socio-demographic characteristics analyzed included; age, gender, marital status, occupation, religious affiliation and level of education. Regarding age, slightly half of the respondents were below the ages of 27 years, while those above 57 years were the least. The rest of the ages were distributed between 28 and 56 years. The difference in ages brought out diverse views that were important in the study. Slightly more female respondents participated in the study as compared to their male counterparts. Those who were married were slightly more than the other categories. Regarding the level of education, slightly more than half of the respondents had attained primary level of education. The most common religious affiliations among participants were Catholic and Protestants. Other religious affiliations included Muslims and Hindus. In terms of occupation, the most common occupation in this area was farming. Other forms of occupation included business, fishing and formal employment.

5.2.2 Definitions of Malaria Illness by Residents of Homabay County.

The definitions of malaria were analyzed from different aspects ranging from causation, physical and social effects, seasonality of illness, susceptibility, severity and sources of knowledge. Regarding causation, three-quarters of the respondents defined malaria as a disease caused by mosquito bites. Other definitions in causation included a disease caused by eating oily foods, body contact, spiritual forces and drinking dirty water. Such definitions revealed the misconceptions surrounding malaria illness. On the physical effects, a majority of the respondents cited symptoms of fever and headaches as the most common symptoms, while other symptoms such as chills and convulsions were least mentioned by respondents. Generally, the respondents showed a high awareness of the symptoms of malaria.

Regarding the effect of malaria on social roles, a majority of the respondents mentioned that malaria illness made them not to work. Their abilities to provide for their families and participate in community activities were therefore challenged. The inability to perform social roles brought about perceptions regarding the illness of respondents. Some mentioned of other members of the community suspecting that they were suffering from HIV/AIDS. Other respondents were perceived as lazy and escaping work, a factor that is undesirable in the community. The inability to work also deprived families of basic needs, joy and brought about the fear of losing their loved ones.

Malaria was also associated with certain seasons of the year with its frequency being more during rainy seasons, hot weather and a time when crops were in the field because during these times, mosquitoes find breeding places thus contributing to

frequent malaria episodes. The period between March and June was mentioned as the period when malaria is most frequent. This, therefore, means that if a scale-up of interventions is done during this period then there can be fewer or no incidences of malaria.

Susceptibility and severity were analyzed. Most respondents cited that they had suffered from malaria recently. This was an indication of high incidence rates of malaria in this region based on its classification as an endemic area. The severity of malaria was also high with a majority of the respondents knowing the potential of malaria to cause death. The association of malaria with death if not timely managed implies that interventions geared towards the control and management of malaria may be adopted by respondents if the right knowledge is impacted on them due to the risk that the disease poses on the population.

The researcher also sought to find out the source of knowledge of the respondents in the event of malaria illness. The most common source of knowledge revealed was professional health care services through visits to the health facility. Other sources of knowledge considered by residents also included past experience, family advice and the lay referral system all of which form a part of a strong social network that is consulted in the event of malaria illness in the identification of symptoms and advise on the appropriate care, where to seek health care and how.

5.2.3 Health-seeking Behaviors Adopted by Residents during Malaria Illness.

This study considered several factors in health seeking behavior which include the number of days taken to act on the symptoms, acting on the symptoms, completion

of dose, cost of treatment, distance to the health facility, consultation for malaria cases and effects of malaria on perception and social roles.

Regarding the number of days taken to act on the symptoms, findings revealed that more than half of the respondents acted on the symptoms between 1-2 days. This could be associated with their experience with the disease, perceived threat associated with death if not managed in time and the correct knowledge of the etiology of malaria. They are therefore able to act fast on the onset of the symptoms. Some respondents acted on the symptoms between 3-4days while others acted after 5 days. Late action on the symptoms was attributed to lack of awareness of the risks posed by the disease.

Regarding acting on the symptoms, a majority of the respondents acted on the symptoms through buying antimalarials and other drugs from the chemist and local shops. It is important to note that those who bought antimalarials and other drugs from shops would present themselves at the health facility if the drugs were not able to cure the illness oblivious of the potential risks of late diagnosis and treatment. The second choice of the respondents was visiting the health facility. Other respondents opted for herbs while some did not take action.

Completion of dosage is considered as an important factor in the treatment of malaria illness. The study revealed that a majority of the respondent who visited the health facility and those who bought drugs from the shop indicated that they completed their dosage while those who never completed their dosage were few. Those who did not complete the dosage said that they kept the remaining drugs for future use, others buried the drugs, while others would give their neighbors when need arose.

Regarding the cost of treatment, a majority of the respondents indicated that the cost of treatment was affordable. However, some respondents felt that the cost of treatment was expensive. These were respondents who opted for private clinics in the area. Consultation in the event of illness plays an important role in decision making, especially in determining appropriate care and where and when to seek health care services. More than three-quarters of the respondents indicated that they would consult in the event of illness. Among those consulted, a majority of the respondents consulted their relatives, followed by partners while others, opted for friends and neighbors. Consultation, therefore, reveals the importance of social networks in the community and the need to ensure that they are educated regarding the disease to help in reducing the time taken to seek care because delays pose a potential risk to the patient in the management and control of malaria. Regarding the distance to the health facility, this study found out that about three-quarters of the respondents were living near health facilities. Other respondents lived more than 5 kilometers from a health facility.

5.2.4 Relationship between the Definitions of Malaria Illness and Health-seeking Behavior.

The third objective was to explore the relationship between the definitions of malaria illness and health-seeking behavior. A cross-tabulation between definitions of malaria and action taken revealed that a majority of respondents associated malaria with mosquitoes. Others associated malaria with body contact, eating oily or sugary foods, drinking dirty water and supernatural forces.

A cross-tabulation of the severity of malaria and the number of days taken to act on the symptoms revealed that a majority of the respondents who viewed, malaria as a

serious illness acted between 1 to 2 days. Another cross-tabulation of the severity of malaria and the number of days taken to act on the symptoms revealed that a majority of the respondents regarded malaria as a serious disease and acted between 1-2days of the onset of symptoms.

A cross-tabulation of the severity of malaria and completion of dosage also revealed that those who considered malaria as a serious condition completed their dosage while on the other hand those who did not consider it seriously did not complete their dosage

Consultation for malaria cases and the number of days taken to act on the symptoms revealed that a majority of those who consulted took 1-2 days to seek health care services an indication of the role that consultation played in determining the early and prompt diagnosis and treatment of malaria.

5.3 Conclusion of the Study.

This study established that respondents knew that malaria is a serious disease and that if not well managed and treated would lead to loss of lives. They also had varying definitions of malaria coupled with misconceptions and inadequate knowledge evident from responses such as malaria causation by supernatural forces, heat from the sun, drinking dirty water and body contact among others. These misconceptions indicate inadequacy in knowledge and understanding of malaria. There is, therefore, a need for more awareness of the disease.

The study also established that the respondents used various choices in pursuit of wellness such as buying drugs from local shops and chemists, giving herbs and seeking treatment from health facilities. It is, however, important to note that some

respondents did not take any action in the event of illness, an indication of the level of ignorance or lack of awareness on the part of the respondents on the risks associated with malaria.

The uptake of drugs bought from local shops and chemists was also high as compared to visiting a health facility. The failure of self-medication led to a visit to the health facility which was opted for when the illness has progressed, a trend that poses a great challenge in the management of malaria.

This study also found out that, how the respondents' defined illness shaped their action in terms of the type of treatment undertaken. However, it is also of interest to note that very few people preferred herbal treatment.

The study also established that there were respondents who acted promptly on the onset of malaria symptoms but also found out that others delayed in seeking health care services. Among the reasons for delay noted included the respondents monitoring the illness to see whether it would go away and acted when they realized the situation was worsening. Other respondents also cited lack of funds as part of the reason why they did seek treatment early enough.

This study also established that there were respondents who never completed the prescribed dosage because they had improved. Others also cited the bitter taste of malaria drugs and the large quantities of the drugs as a barrier to completing dosages. Non-adherence poses a big challenge in the management of uncomplicated malaria and brings a bigger challenge of drug resistance.

5.4 Recommendations from the Study.

Based on the findings of the study, this study made the following recommendations.

1. There is need for sensitization of the community members on malaria illness through health talks. This can be done through the use of vernacular stations available with a lot of focus on the cause of malaria, effects of malaria, treatment, control, self-medication and non-adherence. This would help in raising the knowledge level of community members thus help in dealing with the misconception regarding the illness.
2. The government and stakeholders in health also need to work on strategies that would ensure that pharmacists only sell drugs following evidence of prescription from a health facility as a way of reducing incidences of self-medication for malaria treatment.
3. There is also a need for the community members to be educated on the need to embrace and support those who were ill through the creation of awareness to help in changing negative attitudes regarding malaria illness. This will help in dealing with negative perceptions of illness and reduce the stigma that arises out of illness since this is an area with very high HIV/AIDS prevalence. Community support would also help the sick in recovering quickly from the illness.
4. This study also recommends that the government should take an integrated approach that would ensure an understanding and consideration of social-cultural aspects of the community while designing programs that are centered towards the needs of the people. This may be done by involving the community in the identification of the problem, designing of programmes and implementation. This may help in improving the health of the community and acceptance of programmes that improve the general health of the community.

5. This study also recommends that more resources are channeled towards building the capacities of the community health volunteers because they work in the community and are important in providing the correct information at the village level.

5.5 Areas for Further Research.

1. The study was conducted in Suba South Constituency in Homabay County. This is a rural setting with different socio-demographic, socio-cultural and economic characteristics. A similar study may be conducted in other counties and in urban set-ups to determine the extent to which definitions of malaria illness influence health-seeking behavior.
2. This study also utilized the views of men and women in general. A more specific study can be done to explore the definitions of malaria illness and gender differentials in health-seeking behavior.
3. Community health volunteers in this study pointed out issues they deal with in ensuring communities are disease-free. A study may be conducted on the challenges faced by community health volunteers in rolling out community health programs.

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APPENDICES

Appendix I: Questionnaire Consent Form

My name is Nancy Awuor Odinga. I am a Master of Arts (Sociology) student at Kenyatta University undertaking a study on "**Influence of Definitions of Malaria Illness on Health-seeking Behavior in Homabay County**". The purpose of this study is to explore the definitions of malaria illness held by residents of Homabay county, document the health seeking behaviors adopted during malaria illness and to explain the relationship between the definitions of malaria illness and health-seeking behavior. This study has been approved by Kenyatta University Graduate School and Kenyatta University Ethical Review Committee.

Benefits of the Study: The findings of this study will help in generating knowledge in the area of malaria illness and will provide insightful information to medical practitioners, governments and Non-governmental Organizations in designing programmes and policies that are more inclusive of the people in the communities through consideration of their needs thus helping in the area of malaria control. It will also add to the existing body of knowledge.

Protection from Harm: There will be no harm in participating in the study.

Confidentiality: I will work towards ensuring that the confidentiality of the respondents is protected throughout this research process. I will also ensure that while drafting the final report, quotations of respondents may appear but without names or any characteristics that can identify a respondent.

Voluntary participation and the right to withdraw. Participation in this study is voluntary. You are free not to answer a question you do not want to. If at any time you feel you cannot continue with the study, I would like to let you know that you are free to withdraw.

Kindly tick below to show that I have read the consent to you and that you have understood and agreed to take part in the study.

Respondent …….. Date……..

Researchers signature…… Date……

Thank you for your time.

Appendix II: Focus Group Discussion Consent Form.

My name is Nancy Awuor Odinga. I am a Master of Arts (Sociology) student at Kenyatta University undertaking a study on "**Influence of Definitions of Malaria Illness on Health-seeking Behavior in Homabay County**". The purpose of this study is to explore the definitions of malaria illness held by residents of Homabay county, document the health-seeking behaviors adopted during malaria illness and to explain the relationship between the definition of malaria illness and health-seeking behavior. This study has been approved by Kenyatta University Graduate School and Kenyatta University Ethical Review Committee.

Benefits of the Study: The findings of this study will help in generating knowledge in the area of malaria illness and will provide insightful information to medical practitioners, governments and Non-governmental Organizations in designing programmes and policies that are more inclusive of the people in the communities through consideration of their needs thus helping in the area of malaria control. It will also add to the existing body of knowledge.

Protection from Harm: There will be no harm in participating in the study.

Confidentiality: I will work towards ensuring that the confidentiality of the respondents is protected throughout this research process. I will also ensure that while drafting the final report, quotations of respondents may appear but without names or any characteristics that can identify a respondent.

Voluntary participation and the right to withdraw. Participation in this study is voluntary. You are free not to answer a question you do not want to. If at any time you feel you cannot continue with the study, I would like to let you know that you are free to withdraw.

Kindly tick below to show that I have read the consent to you and that you have understood and agreed to take part in the study.

Respondent …….. Date……..

Researchers signature…… Date……

Thank you for your time

Appendix III: Key Informant Interview Consent Form

My name is Nancy Awuor Odinga. I am a Master of Arts (Sociology) student at Kenyatta University undertaking a study on "**Influence of Definitions of Malaria Illness on Health-seeking Behavior in Homabay County**". The purpose of this study is to explore the definitions of malaria illness held by residents of Homabay county, document the health-seeking behaviors adopted during malaria illness and to explain the relationship between the definition of malaria illness and health-seeking behavior. This study has been approved by Kenyatta University Graduate School and Kenyatta University Ethical Review Committee.

Benefits of the Study: The findings of this study will help in generating knowledge in the area of malaria illness and will provide insightful information to medical practitioners, governments and Non-governmental Organizations in designing programmes and policies that are more inclusive of the people in the communities through consideration of their needs thus helping in the area of malaria control. It will also add to the existing body of knowledge.

Protection from Harm: There will be no harm in participating in the study.

Confidentiality: I will work towards ensuring that the confidentiality of the respondents is protected throughout this research process. I will also ensure that while drafting the final report, quotations of respondents may appear but without names or any characteristics that can identify a respondent.

Voluntary participation and the right to withdraw. Participation in this study is voluntary. You are free not to answer a question you do not want to. If at any time you feel you cannot continue with the study, I would like to let you know that you are free to withdraw.

Kindly tick below to show that I have read the consent to you and that you have understood and agreed to take part in the study.

Respondent …….. Date……..

Researchers signature…… Date……

Thank you for your time.

Appendix IV: Questionnaire

Instructions: Tick all that apply where necessary.

Socio-demographic Characteristics.

1. Age 18-27 years ☐ 38-47 years ☐ Above 57 years ☐
   28-37 years ☐ 48-57 years ☐
2. Gender Male ☐ Female
3. Religious affiliation Catholic ☐ Protestant ☐
   Muslim ☐ ☐ other (Specify)…….
4. Level of Education Primary ☐ Secondary ☐ College ☐
   University ☐ Other (Specify) ☐
5. Occupation Farming ☐ Fishing ☐ Formal employment ☐
   Business ☐ ☐ Other (Specify)…….
6. Marital status: Married ☐ Single ☐ Divorced ☐
   Separated ☐ widowed ☐

Definitions of Malaria Illness.

7. How do you define malaria?

A disease caused by mosquito bites ☐ Eating oily or sugary foods ☐

Supernatural forces ☐ Heat from the sun ☐ Drinking dirty water ☐

Body Contact ☐ ☐ Other (specify)……

8. Has any member of your household (including yourself) suffered of malaria recently?

Yes ☐ No ☐

9. If yes how did you know that it was malaria?

   From past experience ☐ consultation from lay referral ☐

   From family advice ☐ professional health care workers ☐

☐ Others (Specify)……

10. Do you think malaria can lead to complications? Yes ☐ No ☐

Explain ……

Health-seeking Behavior

11. What are some of the symptoms associated with malaria?

Fever ☐ Vomiting ☐ chills ☐ Headaches ☐

Convulsions ☐ ☐ Others (specify)…….

12. How long does it take for you to act on symptoms of malaria?

Same day ☐ 2 days ☐ 3 days ☐ ☐ Others (specify)……

13. What actions did you first take after knowing that you or one of your household members is suffering from malaria?

No action ☐

Buy drugs/antimalarials from local shop/chemists ☐

Give herbs ☐

Visit a traditional healer ☐

Visited a health facility ☐ ☐ other (specify)……..

14. What other action did you take……..

15. If you buy drugs from the shop, do you use all the drugs given or bought?

Yes ☐ No ☐

16. If No what do you do with the remaining drugs after recovering …….

17. When you or any other member of your household goes to the health facility, do you pay for treatment?

Yes ☐ No ☐

18. If yes what is your opinion on the cost of treatment.

Very Expensive ☐ Moderate ☐ Cheap ☐ Very cheap ☐

19. Are you aware of someone in this village or the neighboring village who treats people using traditional medicine?

Yes ☐ No ☐

21. Do you use herbal Medicine? Yes ☐ No ☐

22. If yes, what signs guide you to the choice of herbal medicine?

Convulsions ☐ Relapse ☐

Fever ☐ ☐Others (Specify)…….

23. What do you think on the cost of herbal or traditional medicine?

Very Affordable ☐ Expensive ☐

Decision making in cases of illness

24. Do you consult anyone in case of malaria? Yes ☐ No ☐

25. If yes who do you consult? (Tick all that apply)

Partner/spouse☐ Neighbors ☐ ☐elatives ☐ Others (specify)…...

26. After consultation, how long does it take you to seek help?

Same day ☐ ☐other (specify) …….

1 to 2 days ☐ ☐1 week

27. What is the approximate distance between your place and the health facility in Km?

Less than 1KM ☐ 1-5 KM ☐ 5-10KM ☐ Others (Specify)……

28. Does malaria illness affect your social roles? Yes ☐ No ☐

If yes explain how? .....

30. Does your illness affect the way people see you? Yes ☐ No ☐

If yes explain …….……

Thank you for your time.

Appendix V: Focus Group Discussion Guide

1. How common is malaria illness in this area?
2. Could you please share with us what you believe malaria is?
3. How can you know that someone in your household is suffering from malaria?
4. Describe to us the actions taken in your house when one feels ill (probe).
5. What are the episodes that have occurred in your households?
6. Who makes decision on what type of action to be taken, services to be visited and people to be consulted incase a person gets sick and why?
7. How does illness normally affect your daily activities?
8. How long do you take to seek medical care when you think you have malaria?
9. What challenges or difficulties do you experience in seeking help for malaria cases?
10. What suggestions can you give in dealing with this disease?

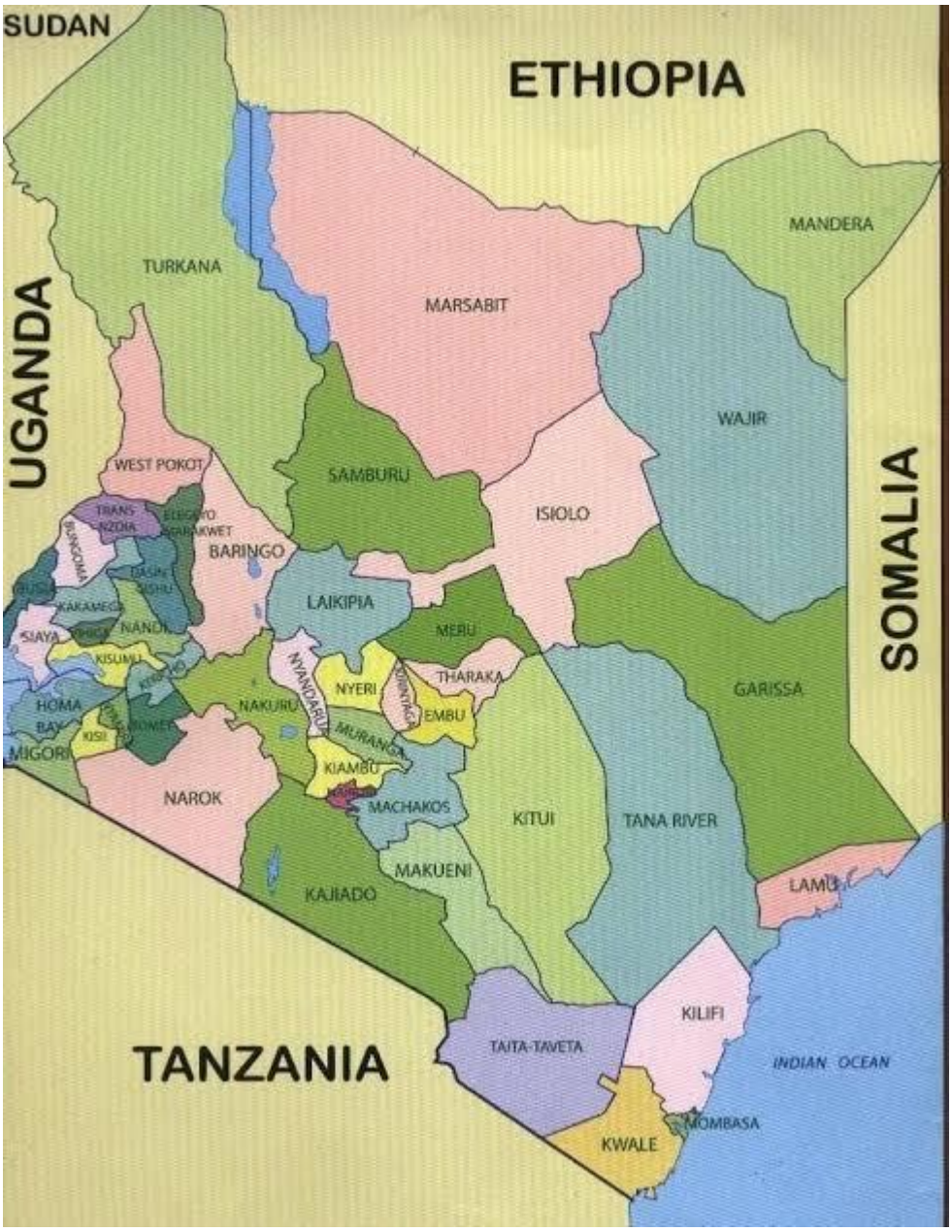
Thank you for your time.

Appendix VI: Key Informant Interview Guide

1. How common is malaria illness in this area?
2. From your knowledge and experience in the community, what are some of the treatment options you have heard or encountered for malaria illness?
3. In your own opinion, did these treatment options succeed in treating malaria?
4. What do you think of the cost of treatment for malaria in the health facility? Probe further.
5. What are the sources of information available to community members with regards to services offered in the health facilities and how can they get this information?
6. Do you think the distance to the health facility affects health-seeking behavior? Explain.
7. What challenges do you face in the area of malaria control? Probe.
8. What do you think needs to be done to address these challenges?

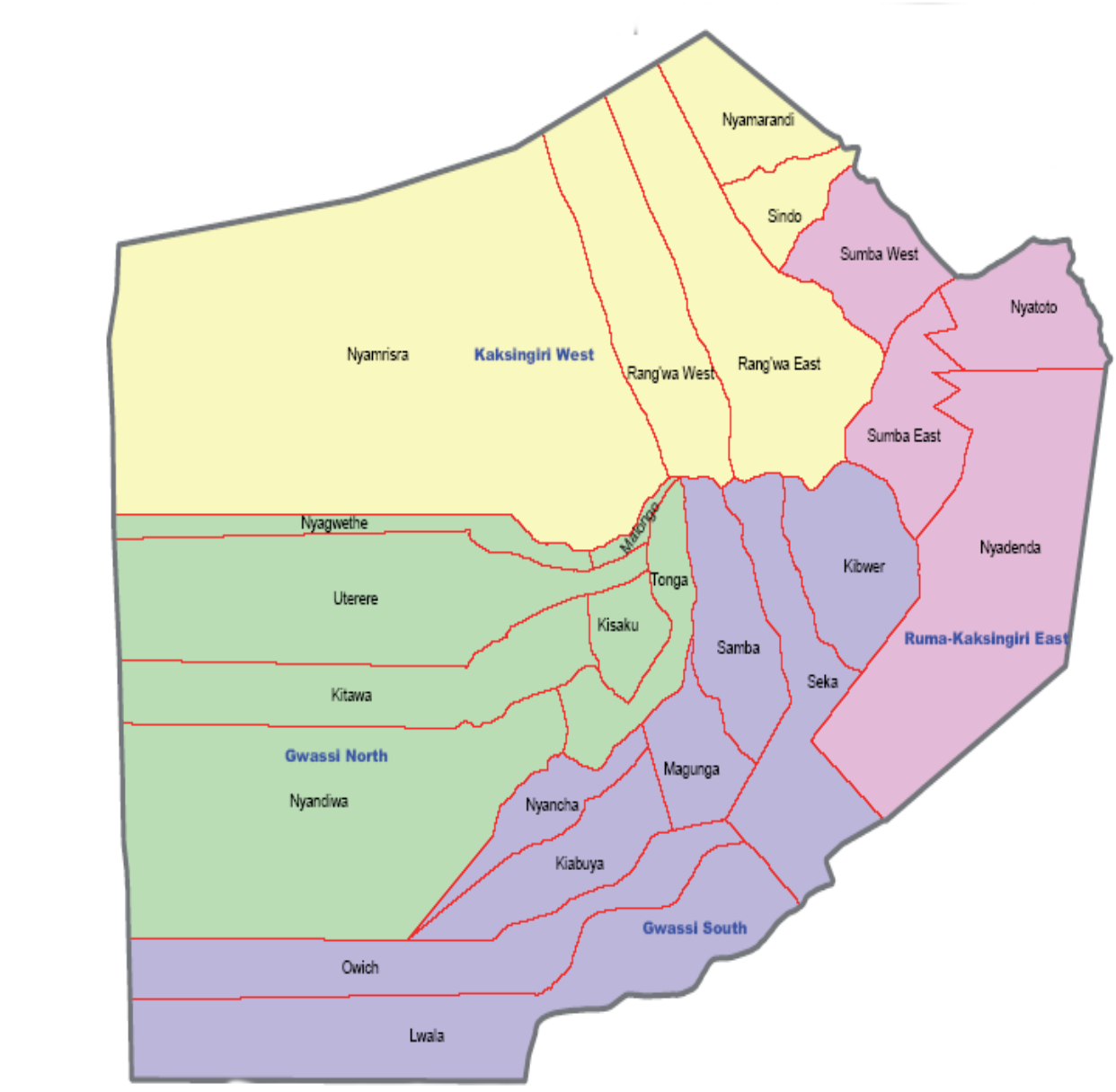
Thank you for your time

Appendix VII: Map of Kenya showing the position of Homabay County



Source: Google Maps (2019)

Appendix VIII: Map of Suba South Constituency in Homabay County.



Source: Google Maps (2019)

KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: dean-graduate@ku.ac.ke
Website: www.ku.ac.ke

P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 020-8704150

Internal Memo

FROM: Dean, Graduate School

DATE: 14th February, 2018

TO: **Ms. Nancy A. Odinga**
C/o Department of Sociology

REF: C50/32596/2015

SUBJECT: **APPROVAL OF RESEARCH PROPOSAL**

We acknowledge receipt of your Research Proposal after fulfilling recommendations raised by the Graduate School Board of 31st January, 2018.

You may now proceed with your Data collection, subject to clearance with the Director General, National Commission for Science, Technology & Innovation.

As you embark on your data collection, please note that you will be required to submit to Graduate School completed Supervision Tracking Forms per semester. The form has been developed to replace the Progress Report Forms. The Supervision Tracking Forms are available at the University's Website under Graduate School webpage downloads.

Thank you.

JULIA GITU
FOR: DEAN, GRADUATE SCHOOL

OFFICE OF DEAN 14 FEB 2018 GRADUATE SCHOOL P.O. BOX 43844-00100 NAIROBI

CC. Chairman, Sociology Department

Supervisors:

1. Dr. George Evans Owino
   C/o Sociology Department
   Kenyatta University

2. Dr. Samuel Mwangi
   C/o Sociology Department
   Kenyatta University

JG/rwm

KENYATTA UNIVERSITY
GRADUATE SCHOOL

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Website: www.ku.ac.ke

P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 020-8704150

Our Ref: C50/32596/2015

DATE: 14th February, 2018

Director General,
National Commission for Science, Technology
and Innovation
P.O. Box 30623-00100
NAIROBI

Dear Sir/Madam,

RE: RESEARCH AUTHORIZATION FOR MS. NANCY AWOUR ODINGA – REG. NO. C50/32596/2015

I write to introduce Ms. Nancy Awour Odinga who is a Postgraduate Student of this University. She is registered for M.A. degree programme in the **Department of Sociology.**

Ms. Odinga intends to conduct research for a M.A. thesis Proposal entitled, **"Definitions of Illness and their Influence on Health Seeking Behaviour for Malaria in Homabay County, Kenya".**

Any assistance given will be highly appreciated.

Yours faithfully,

KENYATTA UNIVERSITY * OFFICE OF DEAN * 14 FEB 2018 GRADUATE SCHOOL P.O. Box 43844-00100 NAIROBI

MRS. LUCY N. MBAABU
FOR: DEAN, GRADUATE SCHOOL

JG/rwm

KENYATTA UNIVERSITY
ETHICS REVIEW COMMITTEE

Fax: 8711242/8711575
Email: kuerc.chairman@ku.ac.ke
kuerc.secretary@ku.ac.ke
Website: www.ku.ac.ke

P. O. Box 43844,
Nairobi, 00100
Tel: 8710901/12

Our Ref: **KU/ERC/ APPROVAL/VOL.1** (176) Date: 23rd July, 2018

NANCY AWUOR ODINGA,
P.O Box 43844-00100,
Nairobi

Dear Nancy,

APPLICATION NUMBER: PKU/830/I896 "DEFINITIONS OF ILLNESS AND THEIR INFLUENCE ON HEALTH SEEKING BEHAVIOUR FOR MALARIA IN HOMABAY COUNTY, KENYA"

1. IDENTIFICATION OF PROTOCOL

The application before the committee is with a research topic **"Definitions of Illness and Their Influence on Health Seeking Behaviour for Malaria in Homabay County, Kenya"** received on 2nd March, 2018, and discussed on 12th June, 2018

2. APPLICANT

Nancy Awuor Odinga

3. SITE

Homabay County, Kenya

4. DECISION

The committee has considered the research protocol in accordance with the Kenyatta University Research Policy (section 7.2.1.3) and the Kenyatta University Ethics Review Committee Guidelines and **APPROVED that the research may proceed for a period of ONE year from 12th June , 2018.**

5. ADVICE/CONDITIONS

i. Progress reports are submitted to the KU-ERC every six months and a full report is submitted at the end of the study.
ii. Serious and unexpected adverse events related to the conduct of the study are reported to this committee immediately they occur.
iii. Notify the Kenyatta University Ethics Committee of any amendments to the protocol.
iv. Submit an electronic copy of the protocol to KUERC.

When replying, kindly quote the application number above.
If you accept the decision reached and advice and conditions given please sign in the space provided below and return to KU-ERC a copy of the letter.

KENYATTA UNIVERSITY OFFICE OF THE CHAIRMAN 26 JUL 2018 ETHICS REVIEW COMMITTEE P.O. BOX 43844 - 00100 NAIROBI

PROF. JUDITH KIMIYWE
CHAIRPERSON. ETHICS REVIEW COMMITTEE

I Nancy Awuor Odinga.....accept the advice given and will fulfill the conditions therein.

Signature..... Dated this day of 26 JULY 2018 2018.

cc.
DVC-Research Innovation and Outreach

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone: 020 400 7000,
0713 788787,0735404245
Fax: +254-20-318245,318249
Email: dg@nacosti.go.ke
Website: www.nacosti.go.ke
When replying please quote

NACOSTI, Upper Kabete
Off Waiyaki Way
P.O. Box 30623-00100
NAIROBI-KENYA

Ref: No. **NACOSTI/P/18/87008/21703**

Date: **13th March, 2018**

Nancy Awuor Odinga
Kenyatta University
P.O. Box 43844-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on ***"Definitions Of illness and their influence on health seeking behaviour for malaria in Homabay County, Kenya"*** I am pleased to inform you that you have been authorized to undertake research in **Homabay County** for the period ending **13th March, 2019.**

You are advised to report to **the County Commissioner, the County Director of Education and the County Director of Health Services, Homabay County** before embarking on the research project.

Kindly note that, as an applicant who has been licensed under the Science, Technology and Innovation Act, 2013 to conduct research in Kenya, you shall deposit **a copy** of the final research report to the Commission within **one year** of completion. The soft copy of the same should be submitted through the Online Research Information System.

DR. STEPHEN K. KIBIRU, PhD.
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The County Commissioner
Homabay County.

The County Director of Education
Homabay County.

CONDITIONS

1. The License is valid for the proposed research, research site specified period.
2. Both the Licence and any rights thereunder are non-transferable.
3. Upon request of the Commission, the Licensee shall submit a progress report.
4. The Licensee shall report to the County Director of Education and County Governor in the area of research before commencement of the research.
5. Excavation, filming and collection of specimens are subject to further permissions from relevant Government agencies.
6. This Licence does not give authority to transfer research materials.
7. The Licensee shall submit two (2) hard copies and upload a soft copy of their final report.
8. The Commission reserves the right to modify the conditions of this Licence including its cancellation without prior notice.

REPUBLIC OF KENYA

National Commission for Science, Technology and Innovation

RESEARCH CLEARANCE PERMIT

Serial No.A 17876

CONDITIONS: see back page

THIS IS TO CERTIFY THAT:
MS. NANCY AWUOR ODINGA
of KENYATTA UNIVERSITY, 0-200
Nairobi,has been permitted to conduct
research in *Homabay County*

on the topic: *DEFINITIONS OF ILLNESS AND THEIR INFLUENCE ON HEALTH SEEKING BEHAVIOUR FOR MALARIA IN HOMABAY COUNTY, KENYA.*

for the period ending:
13th March,2019

Permit No : NACOSTI/P/18/87008/21703
Date Of Issue : 13th March,2018
Fee Recieved :Ksh 1000

.....
Applicant's Signature

.....
Director General
National Commission for Science, Technology & Innovation

OFFICE OF THE PRESIDENT

MINISTRY OF INTERIOR AND COORDINATION OF NATIONAL GOVERNMENT

Telephone: Homa Bay 22104 or 22105/Fax: 22491
E-mail: cc_homabay@yahoo.com
When replying please quote

COUNTY COMMISSIONER
HOMA BAY COUNTY
P. O. BOX 1 – 40300
HOMA BAY

Ref.No.EDUC.12/I VOL.IV/10

17th August, 2018

The Deputy County Commissioner
SUBA SUB COUNTY.

RE: RESEARCH AUTHORIZATION – NANCY AWUOR ODINGA

The above named student of Kenyatta University has been authorized to carry out research on **"Definition of illness and their influence on health seeking behaviour for Malaria"** in Homa Bay County, Kenya for the period ending 13th March, 2019.

This is therefore to introduce her and request that you and the officers working with you to accord her the necessary assistance and support.

Thank you.

S.I.MACHARIA
COUNTY COMMISSIONER
HOMA BAY COUNTY.

Encls.

cc:

County Director of Education
Homa Bay County

The County Director of Health Services
Homa Bay County

Ms Nancy Awuor Odinga

MINISTRY OF EDUCATION

STATE DEPARTMENT OF BASIC EDUCATION

Telegrams: "SCHOOLING" Homa Bay
Telephone + 254722767574
When replying please quote
cdehomabay@gmail.com

COUNTY DIRECTOR OF EDUCATION
HOMA BAY COUNTY
P.O BOX 710
HOMA BAY
DATE: 17TH AUGUST, 2018

REF: MOEST/CDE/HBC/ADM/11/VOL.2/87

NANCY AWUOR ODINGA
KENYATTA UNIVERSITY
P.O BOX 43844 - 00100
NAIROBI

RE: RESEARCH AUTHORIZATION.

Following your application for authority to carry out research on "***Definitions Of illness and their influence on health seeking behaviour for malaria in Homa Bay County , Kenya"*** I am pleased to inform you that you have been authorized to undertake research in Homa Bay County for the period ending **13th March, 2019.**

Kindly accord her necessary assistance and note that all ethical practices should be observed.

COUNTY DIRECTOR OF EDUCATION
HOMA BAY COUNTY
P. O. Box 710 - 40300, HOMA BAY
Email: cdehomabay@gmail.com

MR. JARED M. NYAMWEYA
FOR: COUNTY DIRECTOR OF EDUCATION

Cc.

1. **County Commissioner**
   Homa Bay County.

MINISTRY OF HEALTH

Telegrams: "MOH" Homa Bay
Telephone: 21039
When replying please quote

MINISTRY OF HEALTH,
HOMA BAY COUNTY,
P.O. BOX 52,
HOMABAY.

REF:MOH/RA/VOL.2 (36)

17th August 2018

Nancy Awuor Odinga

RE: AUTHORITY TO CONDUCT RESEARCH

Following your request to collect data on your study entitled ***"Definitions of illness and their influence on health seeking behaviour for malaria",*** in Homa Bay County has been approved for the period ending 13th March 2019.

You will be required to adhere to the hospital's norms and regulations, and involve both the County Health Management Team and hospital's staff during the research period. You are also expected to communicate your findings to the hospital's management team, Sub County Health Management Teams and the Directors' office at the end of the research period.

Wish you all the best in your research.

MINISTRY OF HEALTH
DIRECTOR OF MEDICAL SERVICES
17 AUG 2018
P.O. BOX 52-40300 HOMA-BAY

Sign.....

Dr. Vincent Waringa.....
Deputy County Director of Health
HOMABAY

APPENDIX I

UNIVERSITY KENYATTA

DECLARATION OF ORIGINALITY FORM (FOR STUDENTS)

This form must be dully completed by the student and signed for all scholarly works submitted to the University for Examination.

Name of student Nancy Awuor Odinga Reg. No. C50/82596/2015

Names of supervisors (i) Dr. George Evans Owino (ii) Dr. Samuel Mwangi

Campus Main Campus School Humanities Department Sociology, Gender and Development studies

Name of the Programe Master of Arts (Sociology)

Indicate whether Essay, Term paper, Report, Masters thesis/Project or PhD Thesis Thesis

Title of the work Influence of definitions of malaria illness on health-seeking Behavior in Homabay County, Kenya.

Supervisors (i) Dr. George Evans Owino (ii) Dr. Samuel Mwangi

(iii)

Declaration

1. I understand what Plagiarism is and I am aware of the University's policy in this regard.

2. I declare that this thesis (thesis, project, essay, assignment, term paper, report, etc.) is my original work and has not been submitted elsewhere for certification or publication. Where other people's work or my own previous work has been used, this has properly been acknowledged and referenced in accordance with Kenyatta University's requirements.
3. I have not sought or used the services of any professional agencies to produce this work.
4. I have not allowed, and shall not allow anyone to copy my work with the intention of passing it off as his/her own work.
5. I understand that any false claim in respect of this work shall result in disciplinary action, in accordance with Kenyatta University Plagiarism Policy.

Student's Name Nancy Awuor Oding Signature Date 12/02/2020

Name of supervisor (i) DR. GEORGE OWINO Signature Date 12/02/2020

Name of supervisor (ii) Dr. Samuel Mwangi Signature Date 12/2/2020

KENYATTA UNIVERSITY
GRADUATE SCHOOL

CERTIFICATION OF CORRECTION OF THESIS

NB: This certificate of Correction should be forwarded to the Dean, Graduate School for clearance before thesis can be hard bound

PART I: RELEVANT DETAILS ON THE THESIS

Department: Sociology, Gender & Development Studies
School: Humanities and Social Sciences
Degree Title: Master of Arts (Sociology)
Candidates' Name: Nancy Awuor Odinga
Registration No.: C50/32596/2015 Signature:
Date of Oral Defence: 20th/10/2019
Verdict: Degree to be awarded subject to corrections in a period not less than 2 months and not more than 3 months
Title of Thesis: Influence of Definitions of Malaria Illness on Health seeking Behavior in Homabay County, Kenya.

PART II: DECLARATION BY SUPERVISOR(S) OVERSEEING CORRECTIONS

We, the undersigned have closely looked at the corrections as instructed by the candidate's Board of Examiners and do hereby certify that ALL the corrections have been effected as expected.

NAME: DR. GEORGE EVANS OWINO SIGN: DATE: 23/01/2020
SUPERVISOR I

NAME: DR. SAMUEL M. MWANGI SIGN: DATE: 23/1/2020
SUPERVISOR II

NAME: _____ SIGN: _____ DATE: _____
CORRECTIONS SUPERVISOR (*Where applicable*)

PART III: CONFIRMATION BY DEAN OF THE SCHOOL

Confirmed that the Supervisor(s)/Overseer of the Corrections have done so as per the instructions of the Board of Examiners

NAME: Prof. DAVID MINJA SIGN: 24 JAN 2020 DATE: 23/01/2020
DEAN OF SCHOOL

KENYATTA UNIVERSITY SCHOOL OF HUMANITIES AND SOCIAL SCIENCES P.O. Box 43844-00100 NAIROBI

PART IV: AUTHORITY FOR FINAL BINDING OF THESIS

Authority for final binding of thesis is hereby granted.

NAME DATE & STAMP 24/1/2020

KENYATTA UNIVERSITY OFFICE OF DEAN 24 JAN 2020 GRADUATE SCHOOL P.O. Box 43844-00100 NAIROBI