

**Pharmaceuticals in a medical pluralistic society:
Socio-cultural interpretation and appropriation of
antimalarials in a rural Abagusii Community in South
Western Kenya**

By

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**A Thesis submitted to the Institute of Anthropology, Gender and
African Studies, in Fulfillment of the Requirement for the Award of the
Degree of Doctor of Philosophy of the University of Nairobi.**

November, 2013

DECLARATION

I declare that this thesis is my original work and has not been presented anywhere else for a degree.

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Signature

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Signature

.....

Date

DEDICATION

To my beloved mother, my wife and my three little angels: Mosaisi, Bonareri and Bisieri for your love, understanding and above all believing in me. Finally, to my late father, this was your idea and dream, Rest in Peace.

I can do everything through Christ who gives me strength.

Philippians, 4: 13.

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ABBREVIATIONS

| | |
|--------|---|
| ACT | Artemisinin Combination Therapy |
| AL | Artemether-lumefantrine |
| AQ | Amodiaquine |
| CQ | Chloroquine |
| DBL | Danish Bilharziasis Laboratory |
| DHMT | District Health Management Team |
| DOMC | Division of Malaria Control |
| EMs | Explanatory Models |
| FGDs | Focus Group Discussions |
| GFATM | Global Fund to Fight AIDs, Tuberculosis and Malaria |
| IAGAS | Institute of Anthropology, Gender and African Studies |
| KEMRI | Kenya Medical Research Institute |
| KEMSA | Kenya Medical Supplies Agency |
| MEDS | Mission for Essential Drugs and Supplies |
| MERLIN | Medical Emergency Relief International |
| MOH | Ministry of Health |
| MOP | Malaria Operational Plan |
| NWM | Non Western Medicine |
| O.T.C | Over-The-Counter drugs |
| PI | Principal Investigator |
| PMRs | Private Medicine Retailers |
| PMVs | Patent Medicine Vendors |
| SP | Sulphadoxine-Pyrimethimine |
| SSA | South Africa |
| WHO | World Health Organization |

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ABSTRACT

The availability and popularity of pharmaceuticals (including antimalarial drugs) in the developing world has increasingly been a subject of scientific interest. However, we have a paucity of studies on how people in different socio-cultural contexts have incorporated these pharmaceuticals into their health seeking practices. This study explored the socio-cultural interpretation and appropriation of pharmaceuticals in two malarious villages in Kisii County. Specifically, the study sought to understand the actual antimalarial drug intake and the reasoning that drives behaviours surrounding their use. The study also investigated the Abagusii people's situated ideas and notions of antimalarials - the most commonly used pharmaceuticals in the area. The change of first-line treatment guidelines for malaria by the Kenyan government was also examined in the context of local realities in which antimalarial drugs are made available and used.

The study was conducted in Mosochi and Raganga villages of Kisii County. The study design was longitudinal and involved cross-sectional data collection at different times over a period of 12 months. Both qualitative and quantitative data collection techniques were applied. These mixed methods included: village census and mapping, free listing, structured interviews, in-depth interviews, focus group discussions and longitudinal household malaria case studies. Descriptive statistical analysis was done using SPSS software package for questionnaire data and qualitative data was manually processed and analyzed through thematic analysis.

The study findings revealed that the therapeutic field in Mosochi and Raganga villages is characterized by medical pluralism. It also showed that both formal and

informal sale of Western pharmaceuticals are common in the community and that local populations generally prefer to subordinate their local notions of meaning to those of biomedical explanation. The study findings showed that medical 'knowledge' or presentation about malaria had become part of a popular representation of malaria in the community. The connection with mosquitoes (*chiumbu*) was consistent in the two villages. The study revealed that lay people in the community, while aware of the change in malaria treatment guidelines, have nevertheless limited knowledge on the factors that motivated the government to make such changes. Health workers too, as expected, understood the reasons for the change but ironically were still prescribing SP drugs as a first line antimalarial drug. This unexpected behaviour from health providers poses a big challenge to effective implementation of the new policy guidelines as prescribed by the government.

In conclusion, it is noted that the existence of plural medical systems in society requires constant renegotiations and new relational dynamics among the various health avenues that need to be taken into consideration by public health practitioners. The study recommends that future introduction of new treatment drugs should be sensitive to context-based ethnographic realities for effective up-take of these drugs.

CHAPTER ONE

BACKGROUND TO THE STUDY

1.1 Introduction

Though the popularity of pharmaceuticals in non-Western societies is increasingly attracting the attention of scientific research (Haak, 1988; Birungi, 1998; Hamel et al. 2001; Whyte et al., 2002), we still do not have sufficient field research on how people in different socio-cultural contexts have actually incorporated the pharmaceuticals into their health-seeking practices. In fact, we are ill-informed about the actual users of modern medicine in the Third World, about the circumstances in which pharmaceuticals are being applied and about what drugs mean to people (Haak, 1988).

New medical techniques and their associated artifacts, which are primarily linked to biomedical approaches, are rapidly spreading all over the world, changing the medical and human landscape. Apart from changing the existing therapeutic practices, these techniques and artifacts also affect the way social actors think about them and the treatment process. The travel of biomedical techniques is normally accomplished through the process of appropriations that are put to work in order to make them fit into distinct local moral worlds, thus generating new realities about them, sometimes far from those prescribed by biomedical approaches.

For instance, most practitioners and manufacturers of Western medicine make two assumptions regarding their products. First, local people have restricted access to pharmaceuticals only through appropriate practitioners. Second, a patient will take medication as prescribed or recommended, at a proper time and in the proper dose and for the illnesses at hand: not for other illnesses for which it might be useless or even

harmful, but which the local culture defines as appropriate application (Bledsoe and Gaubaud, 1985). However, we have ethnographic accounts to suggest that pharmaceuticals are now a popular 'commodity' in most rural areas of Third World countries (Whyte, 1992; Van der Geest et al., 1996) and they are also transacted outside the biomedically-required prescriptions (Birungi, 1998; Djimbe et al., 1998, Marsh et al, 1999). Thus, there is need for context-based ethnographic studies on the actual use of Western pharmaceuticals in non-Western settings, such as Africa and Asia.

In most areas in sub-Saharan Africa where malaria is highly endemic for instance, the great majority of malaria cases are initially treated at home with drugs purchased in the private sector (McCombie, 1996; Thera et al., 2000; Hamel et al., 2001). Unfortunately, the level of technical knowledge in private clinics, pharmacies and shops is often low (Ongore and Nyabola, 1996; WHO, 1998). Given that early diagnosis and effective treatment are the cornerstones of current control strategies in the global fight against malaria, there is an increasing concern about the use of these antimalarial drugs (Djimbe, 1998; Nyamongo, 1998). In a review of behavioural issues related to malaria control in sub-Saharan Africa, Williams and Jones (2004) observed that we have an increasing quantity of descriptive data on treatment seeking behaviour, but we still have little understanding of the rationale of drug use from the patient's perspective.

There is need to investigate the patients' and health workers' ideas and practices on antimalarial treatment guidelines, in the face of worsening antimalarial drug resistance. If the benefits of the efficacious ACT drugs are also to be achieved in the public health sector in Kenya, there is need for an effective antimalarial drug

implementation strategy. This study was designed to help provide evidence-based information on the practice of patients and health workers' after the introduction of ACTs in Kenya.

1.2 The Abagusii Community of South-western Kenya

The Abagusii are a Bantu speaking community who currently inhabit Kisii and Nyamira Counties located in the south-western highlands of Kenya. The inhabitants of the highlands were generally during the colonial period referred to as the Kisii. This was the name known to their Nilotic-speaking neighbours, the Luo, from whom the British administrators seem to have adopted the term. The people refer to themselves as the Abagusii and this is the term used in this thesis to refer to them. Thus, the term Gusii is an ethnographic conversion formed from dropping the Bantu prefix (Maxon, 1989).

According to the 2010 National Population Census results, the Abagusii are the seventh largest ethnic group in Kenya – after the Kikuyu, Luyia, Kalenjin, Luo, Kamba and Somali in that order. The census results showed that in 2009 the two Abagusii Counties (Kisii and Nyamira) had a total population of 1.7 million people occupying an area of 2,211 square kilometers (Republic of Kenya, 2010).

The area currently inhabited by the Abagusii is characterized by abundant rainfall and very fertile soils that makes it one of the most productive agricultural areas in Kenya. Between 70 and 80 per cent of the land can be cultivated. Abagusii land has one of the highest population densities in rural Kenya that has forced the Abagusii people to utilize every space available for agriculture. Thus, many people today engage in agriculture, employment or business locally, nationally and internationally (Akama and Maxon, 2006; Siso, 2007).

The Abagusii are thought to have arrived in their present homeland in about the middle of the 18th century. The Abagusii people speak of *Mogusii* as the founder of their community and the person after whom they are named (Levine, 1963; Ochieng, 1971). The Abagusii claim same origin as the Abaluyia, especially the Avalagoli and the Babukusu of Western region of Kenya. The Abagusii call these communities *abanto baito* (our people). Available literature (Ochieng, 1971; Maxon, 1989) indicated that the Abagusii migrated from Mt Elgon region from about the 16th century; they moved south along the Nzoia River, and for about a Century stayed at Kano Plains, north-east of Lake Victoria. Before departing, the Abagusii parted with Avalagoli people – who travelled north to Buluyia, where they now form part of the Abaluyia communities. Their movement from Kano plains was influenced by Luo pillage and destruction (Ochieng, 1971). So they moved further to Buret in the south-east, where they encountered the Maasai and Kipsigis, both of whom forced them to move, eventually to their present homeland in the Abagusii highlands (Ochieng, 1971; Levine, 1963).

Indigenous Abagusii organization was first described in detail in the 1940s by Philip and Mayer (Mayer, 1974; Mayer, 1949). Before the British began establishing authority over Abagusii land in 1907, Abagusii institutions were not, as they are now, differentiated into political, economic and religious spheres. Social life was based on kinship and patriarchal authority which called for axiomatic reverence not only from wives and daughters but also from sons (Mayer, 1974).

According to Were and Nyamwaya (1986), the Abagusii have over the years, through experimentation and borrowing developed a rich repertoire of therapeutic techniques for preventing and treating various medical conditions. The community

attributes the cause of illness to three major factors. First, they believe that an individual's interaction with the physical environment can cause ill health for example, through bad food, natural disasters and aging. Second, interpersonal factors such as breach of taboo, a curse, a broken oath, witchcraft and evil eye can cause illness. Third, spiritual forces such as ancestors (*chisokoro*), spirits (*ebirecha*) and creator (*engoro*), who are believed to have the power of making individuals sick as a punishment for sins committed against society.

The current health care system in most of Abagusiland just like most communities in Kenya is characterized by a dominant biomedical system that is complemented by an indigenous system of medicine. Typically, and depending on the nature of ill health the Abagusii utilize one or all the health systems in the prevention and treatment of the various medical conditions that affect them.

Supported by well-watered and fertile land, the Abagusii are today mainly mixed farmers. The staple crops are maize and beans. They also grow a variety of crops such as finger millet, sorghum, Irish potatoes, indigenous vegetables, tomatoes, avocados and ground-nuts. Their most important cash crops are coffee and tea. In addition, some sugar cane, pineapples, passion fruits and bananas are grown. Animal husbandry and outside employment serve important complementary roles in their economy (Siso, 2007).

1.2.1 Malaria situation in Kisii County

Around 60% of 250–500 million clinical disease episodes and over 80% of 1.25 million deaths are attributed each year to malaria occur in sub-Saharan Africa (WHO, 2003). Several studies have described a two-fold increase in deaths due to malaria during the

1980s and 1990s because of the emergence of chloroquine resistance (Trape, 2001; Trape et al., 2002). However, recent studies have documented a decline in malaria morbidity and mortality trends as a result of increased access to artemisinin-based combination therapies and widespread use of insecticide-treated nets (Bhattarai et al., 2007; Owusu-Agyei et al., 2007).

Despite the reported progress in the fight against malaria, however, the disease remains a leading cause of mortality and morbidity in Kenya, especially among young children and pregnant women. The World Malaria Report (2012) states that there were an estimated 6 million malaria cases in Kenya in 2010 mostly caused by *Plasmodium falciparum* and 26,017 deaths were reported. Malaria is endemic in the Coast region and Lake Victoria Basin of Kenya. Highland malaria has been reported in most Kenyan highlands such as Kisii and Kericho Counties. Indeed, more than 70% of the population of Kenya lives in areas where malaria is transmitted. The disease is responsible for approximately 30% of all out-patient visits, and 19% of all hospital admissions in the country. It accounts for over a third of all consultations in government clinics (DOMC, 2001).

Malaria in Kisii is best described as hypo-mesoendemic (DOMC, 2001), characterized by year-round transmission with seasonal peaks following the heavy rains. According to Nyamongo (2004), the disease accounted for 60% of deaths in children below the age of five years and 33% of all deaths in Kisii and Gucha districts. A recent study by Nyamongo (2011) showed that malaria disrupts farming activities; it has also led to increased poverty in the community as resources are redirected to the management of the disease while production decreases. Kisii County is in Nyanza

region and lies between longitude 34.210 and 35.30 east and latitudes 0.250 and 0.510 north. The average annual rainfall is over 1500 mm with temperatures between 14 and 27 degrees Celsius.

The County is characterized by a highland/epidemic type of malaria transmission. This is a feature of malaria in highland districts where there is a potential for limited transmission lending itself to an overall low disease risk on an average year, with variations in rainfall and ambient temperatures between years leading to epidemics (Snow et al., 2003).

A combination of insecticides and cool temperature had eradicated malaria from Kenya's highlands in the 1960s but the disease has re-emerged in recent times, a development that some experts say is linked to subtle changes in the region's climate (Aslop, 2007; Githeko et al., 2006). Before the late 1980s and early 1990s, the Kisii highlands were previously regarded as largely a malaria safe region. But since 1998 the area has experienced some devastating epidemics. Malaria is currently the most common cause of outpatient attendance and inpatient death in Kisii and Nyamira Counties (Nyamongo, 2002).

Due to heavy rains in the two Counties (over 1500mm per annum), the area is characterized by lush vegetation and many pools of stagnant water during rainy seasons. Brick making and soapstone carving (local industries) also leave pools of water in the quarry pits. These conditions are ideal for mosquito breeding. This situation is compounded by a heavy population density ranging from 300 to 1000 people per square kilometer. Local farmers usually plant crops adjacent to their houses, making bush clearance to reduce mosquito-breeding sites difficult. Cropping has also been

expanded to the previously thickly forested hilltops, the loss of which also supports increased breeding of mosquitoes.

Despite the fact that recent studies indicate that a majority of the local population in Kisii and Nyamira Counties understand the biomedical explanation of malaria etiology, prevention and control, traditional beliefs on other causes of malaria (for example, eating green maize and chewing sugar cane) still prevail. This means that the local people do not always recognize the value of vector control activities or use of mosquito nets. Indeed they may not connect uncomplicated malaria with complicated malaria, believing that witchcraft or social unrest give rise to convulsions (Siso, 2007).

Health services in Kisii and Nyamira Counties are generally far from adequate. Resources allocated especially to government-owned health facilities that dot rural villages in the region are scarce and what is available is neither prioritized nor organized according to health needs. The non-systematic introduction of a decentralized health system has not helped as the District Health Management Teams (DHMTs) have been given little budgetary control, no management training, have limited transport (so cannot adequately supervise staff in rural health facilities), and have minimal resources for continuing education (Kisii District Development Plan, 1997 – 2001).

1.2.2 Kenya's Malaria Treatment Policy Change

In the recent past, the threat posed by failing, but inexpensive, antimalarial monotherapies led to an international effort to replace these drugs with relatively more expensive but considerably more effective ACTs for the management of uncomplicated Malaria (Attan et al., 2004; Amin et al., 2007). The World Health Organization (WHO),

for instance, recommended that efficacious artemisinin-based combination therapies (ACTs) should be the preferred replacements for failing mono-therapies, such as sulphadoxine-pyrimethamine (SP) (WHO, 2001; 2003). The Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM) set aside millions of shillings to fund ACT policy implementation across Africa (Wasunna, 2008).

Due to widespread resistance to sulfadoxine/pyrimethamine and amodiaquine in Kenya, the Ministry of Health (MOH) began the process of implementing a change in its first-line treatment policy for uncomplicated malaria from SP to the ACT artemether-lumefantrine (AL) in 2006 (Amin et al., 2007; Snow, 2007). This process began when AL was supplied by the Ministry of Health (MOH) to all government health facilities within the district health system – starting from the lowest level dispensaries to mid-level health centres and higher level district hospitals. Outpatient care in dispensaries and health centres is most commonly provided by nurses, while clinical officers are usually outpatient providers in hospitals. At all government facilities, AL should be provided to patients free of charge.

In preparation for policy implementation, the Division of Malaria Control (DOMC) of the Ministry of Health (MOH) updated the national malaria treatment guidelines to guide health workers in managing malaria cases using the new ACT drugs. Effective case management of malaria requires that appropriate antimalarials are not only available but are also used appropriately in the correct formulations and quantities and according to an appropriate regimen. *Coartem*, the selected first-line antimalarial treatment, is a fixed-dose ACT and, as its name suggests, combines artemether—a derivative of artemisinin extracted from the Chinese sweet wormwood plant *Artemisia*

annua—with lumefantrine. Using both medicines in a single-dose formulation combines the benefits of artemether's fast onset of action (parasite clearance) with lumefantrine's long duration of action and high cure rate. Thus, the carefully selected AL is believed by biomedical providers to be promising and efficacious. ACT is expected to play a key role in reducing the high morbidity and mortality of groups vulnerable to malaria in Kenya.

From the time the first arrival of procured consignments of subsidized *Coartem* was delivered in the country, the Kenya Medical Supplies Agency (KEMSA) and the Mission for Essential Drugs and Supplies (MEDS) have been distributing quantities to MOH and mission sector health facilities, where the product is to be supplied to patients free of charge or not-for-profit. The use of *Coartem* for case management by health workers has been fully functional since October 2006. Compared with previously used antimalarial mono-therapies, *Coartem* has peculiarities that have been considered by the Government of Kenya during its quantification, procurement and storage and that will be considered with use. These peculiarities include the fact that *Coartem* is expensive and has a complicated presentation (presented in different packages of 6, 12, 18, and 24 tablets for treatment by patient weight band). It has a 14-month lead time for production, and has a short shelf life and health workers lack experience with its use.

KEMSA and MEDs are charged with the responsibility of distributing AL directly to government and mission health facilities – free of charge. It is important to point out, however, that before the new antimalarials reached health facilities, and efforts were made to develop national treatment guidelines that took over 23 months to revise. In addition, a cascaded training programme for health workers from malaria affected areas that took nine months.

1.3 Problem Statement

The paradigm of biomedicine defines treatment in almost exclusively biophysical terms, largely disregarding cultural and social factors (Etkin, 1992). However, studies have revealed that the sale of pharmaceuticals outside the biomedical contexts is fraught with meaning beyond what is simply and empirically observed (Whyte 2002; Van der Geest et al., 1996). This realization has prompted a line of scientific concern that seeks to understand the transactions and meanings of modern pharmaceuticals in diverse social settings, so as to document the local realities in which medicines are actually made available and used. This is particularly important in non-Western societies, where pharmaceuticals are often recast in another knowledge system.

According to Van der Geest et al., (1996), these studies have shown the significance of the transaction of medicines through commercial and informal channels and emphasized that most pharmaceuticals, even regulated 'prescription drugs only', were taken. Indeed, commonly lay people may have 'good reasons' for taking their medicines in a way other than that indicated by the prescriber. This is not so much as a result of a patient's misunderstanding the doctors' information, but is as a result of patients having different ideas, and in particular, different interests. In most cases, other conceptions of health, illness and medicine affect the way people take medicines in both Western and non-Western societies.

For instance, ethnographic studies on malaria have revealed that even when 'sanctioned' providers offered current antimalarial drug dosing regimens and used drugs recommended by national policies, consumers opted to buy non-recommended treatments for malaria and reported giving sub-optimal doses when using recommended

antimalarials (Djimde et al., 1998). This is cause for concern, since according to WHO, prompt and effective treatment remains a central tenet in malaria control. In addition, research findings showed that many illnesses, including malaria are treated without consultation from health professionals (Marsh et al., 1999) and in areas where malaria transmission is endemic, about 50-80% of people first visit private drug outlets for malaria treatment and use these antimalarial drugs even without prescription (Hamel et al., 2001).

Despite this popularity of modern pharmaceuticals in Western and non-Western societies, there is paucity of scientific knowledge on how people in different socio-cultural contexts have actually incorporated the pharmaceuticals (antimalarial drugs included) into their health-seeking practices. According to Waitsierah et al., (2010), it is critical to effectively evaluate information on drug use among different populations so as to disseminate these facts to both the health authorities and the scientific communities in order to facilitate effective understanding and help to address the drug use patterns. This study, therefore, sought to explore the local realities in two malaria prone villages in south western Kenya. In the two villages, the local populace in an effort to deal with common ailments like malaria, typically transact and use pharmaceuticals to get well, hence making the villages an ideal setting for this study.

It is for the above reason that this study specifically sought to first explore the socio-cultural contexts in which antimalarial drugs and other pharmaceuticals are transacted and used within the Abagusii healthcare system. Second, we sought information on what happened once national malaria-treatment guidelines were changed. The information was sought from both the lay people and health providers'

perspectives, which should help to inform effective malaria policy changes and deployment in local and national contexts in future.

The study sought answers to the following research questions:

1. What are the different health care systems in which pharmaceuticals are transacted in the study area?
2. How do lay people access information about pharmaceuticals?
3. How do the lay users of antimalarial drugs construct and disseminate knowledge about antimalarial drugs in everyday life?
4. What are the lay people and health workers' perceptions and practices towards national policy change on first-line antimalarial drugs?

1.4 Objectives of the study

1.4.1 Overall Objective

The overall objective of the study was to explore the socio-cultural interpretation and appropriation of pharmaceuticals with regard to antimalarial drugs in a rural Abagusii community in south-western Kenya.

1.4.2 Specific Objectives

The specific objectives of this study include the following:

1. To examine the local medical pluralistic system in which pharmaceuticals are used.
2. To examine ways in which information about pharmaceuticals are accessed by lay people.

3. To assess how local people construct and disseminate knowledge about antimalarials in everyday life.
4. To examine lay people and health workers' perceptions and practices towards national policy change on first-line antimalarial drugs.

1.5 Rationale of the Study

The study aimed at providing scientific and intellectual inputs into the growing field of medical anthropology, In addition, to generating new insights of public health significance that can inform effective malaria intervention designs and deployment of such designs. From the medical anthropology perspective, the study provides bio-cultural knowledge on treatment seeking practices among non-Western societies and the current concerns in medical anthropology regarding people's responses towards pharmaceuticals – the patient 'rationality' that sometimes runs counter to the expectations of biomedical practitioners.

On the public health front, this study provides evidence-based information on patient 'rationality' and health providers' practice on antimalarial drug use that will serve to inform future malaria treatment policy formulation and deployment. This is particularly important to Kenya given that the Kenya Government has in the last one-and-half decades changed its policy guidelines for treating uncomplicated malaria from chloroquine to *sulphadoxine-pyrimethamine* SP and, from 2006, to *artemether-Lumefatrine* or amodiaquine plus artesunate. These policy changes became necessary because the therapeutic efficacy of chloroquine and SP had deteriorated.

The success of any new treatment policy would depend on the adherence of health providers and patients to the policy recommendations. This study has generated empirical evidence on both the lay people's and health workers' practices about antimalarial use, implementation of the new treatment guidelines change from SP to ACT and their implications for policy. Indeed, there are few studies that have examined the operational use of ACTs following national policy change (Zurovacs, et al., 2005a; 2007). This is an important area of social science inquiry that has not been adequately developed to examine the factors that influence the development and implementation of national malaria treatment guidelines, including the consequences of improper application of these guidelines (William & Jones, 2004) and this is a gap that the study sought to fill.

1.6 Scope and limitations of the study

This study was conducted in Mosocho and Raganga villages within the boundaries of Kisii Central District in Kisii County. Malaria in the area is characterized by year-around transmission with seasonal peaks following heavy rains, hence making the villages a suitable study to carry out a longitudinal study such as this one. The design allowed the researcher to make repeated observations on socio-cultural context of the transaction of antimalarials in the area. This study was ethnographic in approach and relied on theoretical perspectives in the field of medical anthropology to provide evidence-based information with regard to the transaction of pharmaceuticals in a non-Western cultural setting.

The rough terrain and poor road network in the study villages presented a number of logistical limitations especially during the rainy periods. However, whenever the researcher got to the field he arranged to stay at a central area – Mosochi shopping centre, where he was able to organize for more efficient means to the study participants in the two villages. All the field workers and interviewers were recruited from the study villages – this ensured that they were already familiar with the local village routes and suitable means of movement.

Most of the data collected depended on people's memory of their lived experiences with antimalarial drugs and other pharmaceuticals. This posed both reliability and validity bias of their responses. To overcome this limitation, the researcher ensured that as much as possible shorter-recall-periods were considered in participant selection. This step was based on the assumption that a shorter recall period is likely to produce more reliable information on issues sought by the study. This was complemented by the use of a mixed data collection approach – a research design that employs both qualitative and quantitative techniques in a single study. Furthermore, the mixed method approach accorded the study an opportunity to examine the same phenomenon in different ways. This enabled the study to use the best in both worlds: the in-depth contextualized and natural insights of the qualitative approach which was complemented with the descriptive numerical quantitative data, thereby ensuring the validity and interpretability of the research findings.

The possibility of self-censure in case of health workers' practice and perception on new policy guidelines put to question their responses' reliability; however, the researcher assured them of utter confidentiality on the information provided and the

importance of the study to policy formulation. His continued stay in the community and interaction with informants also helped to gradually build rapport with them. This rapport proved very useful to the study team while conducting interviews as it ensured that the informants trusted the study team with information.

The possibility of malaria misrepresentation and drug identification by the lay people was also anticipated. However, the qualitative nature of the study allowed the researcher to use the various study tools to detect malaria misrepresentation. And on drug identification the study was designed as much as possible to seek to check drug details from medical record booklets commonly used in government health posts in the study area by patients and from any labelled drug sachets the respondents might have at the time of interview.

Another limitation for this study is that its findings will not be generalizable beyond the study villages. However, the primary objective of qualitative research is not generalizability, but to provide rich and in-depth descriptions of context-based information that can be used to provide context-based evidence that can lead to local recommendations for improvements on future malaria intervention programmes.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews the literature on the thematic areas related to the study as well as an explanation on the theoretical frameworks that has been used to interpret, present and analyze the study results.

2.2 Literature Review

2.2.1 Modern medicines in a non-Western pluralistic medical system

According to Janzen (1978), medical pluralism is the “existence in a single society of differently designed and conceived medical systems”. He argues that a sufficient analysis of a local pluralistic system of healthcare must begin with the ‘macro’ level of colonial history and national policy. Kleinman (1980) advanced the view that there is a need to study healthcare systems in an ecological perspective and recognize that ‘external’ influences such as political, economic, social, structural and historical factors should also be taken into account in such studies.

The presence of the biomedical traditions in societies outside the ‘Western’ world is a case in point. Baer et al., (1997) further noted that medical pluralism in the modern world is characterized by a pattern in which biomedicine exerts dominance over alternative medical systems whether they are professionalized or not and that regardless of society, biomedicine attempts to control the production of healthcare specialists, define their knowledge base, dominate the medical division of labour,

eliminate or narrowly restrict the practices of alternative practitioners and deny lay people and alternative healers access to medical technology that produce medicines.

According to Ebrahimnejad, (2012), Western medicine in non-Western countries has always been viewed as a Western corpus of knowledge and institution, juxtaposing or replacing the native medicine but without any organic relation with the local context. However, he instead argues that the 'modernization' or 'construction' of modern medicine rather than the diffusion of modern 'medicine' as an ontological entity beyond the West. Treatments as alternatives to accepted orthodox medicine have existed in human society for as long as therapies have been documented. However, the ascendancy of scientific medicine from the early 20th century had the effect of suppressing other therapies.

Despite the documented predominance of biomedicine, most people in Africa frequently utilize both traditional and modern medicine simultaneously for the same episode of illness or at different times for different illnesses (Alexander, 1985). In Taiwan, for example, modern approaches to cancer treatment, just as in the Western world, involves one or a combination of therapeutic modalities including surgery, chemotherapy, radiotherapy or biotherapy. Such medical treatments are widely available in Taiwan and constitute a major component of the healthcare system (Wang, 2007).

The use of alternative treatment therapies for the same episode of illness poses important public health challenges hence the need to study the existing systems in order to understand how modern medicines are conceived and disseminated in these societies. This is especially important in the area of decision-making with regard to

seeking and selecting therapy (Sindiga et al., 1995). This becomes more important in light of the fact that Western medicines are very much part of an emerging 'pharmaceutical pluralistic' environment in non-Western countries - the co-existence of Western medicines with indigenous medicines.

Generally, a critical approach to medical pluralism points to the recognition that medical pluralism does not exist in a vacuum independent of social, political, economic and cultural influences and that the parallel use of therapeutic alternatives is influenced by a number of different factors. Janzen (1978) who having studied patterns of healing among the Bakongo of lower Zaire in Africa, did emphasize the importance of seeing 'the quest for therapy' in a broader historical, political and cultural framework.

2.2.2 Lay people's perceptions of pharmaceuticals in non-Western societies

The phenomenal rise in the use of pharmaceuticals in healthcare systems other than the biomedical healthcare system has been documented by several researchers (for example, Van der Geest, 1996). Radical critiques of the pharmaceutical invasion of the Third World have pointed out that the pursuit of health is becoming increasingly 'pharmaceuticalized' - a process that is not always in the best interest of healthcare delivery (Melrose, 1982; Nitcher, 1996). It is however, important to note that pharmaceuticals play an important role in healthcare all over the world. Since the 1980s many publications have pointed to the medically unsafe use of Western pharmaceuticals in developing countries where regulations are weak and healthcare systems do not function well. People not only use these pharmaceuticals on the advice of doctors, a large proportion of illness cases are self-medicated, often with potential hazardous prescription-only drugs (Van der Geest et al., 1996).

According to Whyte (1992), this widespread use of pharmaceuticals in developing countries poses many crucial questions for health researchers. One set of concerns revolves around the meanings attributed to medicinal substances in various cultural contexts. Another has to do with the social relations within which these meaningful substances are transacted. These concerns formed the core themes of this study.

It will therefore be wrong to assume that the biomedical concepts about the use of these substances inform the patient's conception and use patterns. On the contrary, the characteristics that indicate efficacy, the expectations about how a medicine works, and notions about suitable use of the medicines, are all culturally defined (Whyte, 1992; Van der Geest et al., 1996).

Pharmaceutical anthropologists, for instance, reckon that the use of pharmaceuticals must be understood within the context of the individual as part of a social group and the wider community, since in most cases, other conceptions of what is regarded as health, illness and medicine affect the way people take medicines in both Western and non-Western societies (Helman, 1978). This is particularly relevant in non-Western societies, where pharmaceuticals are often recast in another knowledge system and used very differently from the way they were intended in the 'regime of value' where they were produced (Van der Geest et al., 1996).

This phenomenon that is commonly referred to as cultural reinterpretation of pharmaceuticals shows to what extent pharmaceuticals have been incorporated into local cultures. Cultural reinterpretation was first explored by Logan (1973), who that Guatemalan villagers categorized Western medicines as 'hot' or 'cold' according to their

illness classification. Acceptance or rejection of a particular medication depended on this classification and not on biomedical knowledge of pharmaceuticals.

Bledsoe and Goubaud (1988) in their study of the Mende people of Sierra Leone also observed an interesting reinterpretation of Western medicines on such lines as form, colour, and taste. They show that semantic analysis can provide important insights into the ways people perceive and utilize medications. Hardon (1991), in a study among the urban poor in Manila, found that the people valued branded drugs with the same pharmacological contents differently. Such study results have increasingly promoted the idea that the use of pharmaceuticals must be understood within the socio-cultural context of their use.

2.2.3 Sellers of medicines in the community

There are considerable variations in the type of medicine sellers described in different settings and the laws that regulate them, with each country having its own procedures and categories of licenses across SSA (Goodman et al., 2007a). But throughout this thesis, groups of sellers who commercially retail medicines to communities with or without a prescription are referred to as private medicine retailers (PMRs). Medicine sellers operate from specialist drug shops, general retail outlets, kiosks and market stalls, or as itinerant hawkers. In some of these situations, they may also sell a variety of other household goods (Goodman et al., 2004).

In Africa, for instance, private sector sources of antimalarial drugs often refer not only to officially recognized businesses, such as private pharmacies or general merchandisers, but also to informal sources, such as small kiosks or even itinerant drug sellers (Bloland, 2003).

Under national legislation, there are categories of medicines that can be sold over the counter (OTC) from general outlets, and these vary from country to country. OTC medicines often include aspirin, paracetamol, cough medicines and, in some countries, antimalarial medicines. Other medicines are restricted to sales with a prescription and are sold through outlets registered as pharmacies. Similarly the terms used to describe medicine sellers varies, including drug sellers, shopkeepers, chemical sellers or patent medicine vendors (PMVs). An RBM technical advisory group recommended use of the term ‘medicine sellers’ to capture the disparate groups of providers available in many settings.

Use of PMRs as a source of care is often done promptly after symptoms are recognized (Deming et al., 1989; Molyneux et al., 1999; Amin et al., 2003; Holtz et al., 2003; Ahorlu et al., 2006; Gitonga et al., 2008). PMRs are patronised for a variety of reasons including physical proximity compared to health facilities (Yeneah et al., 1993; Mwenesi et al., 1995; Baume et al., 2000; Muller et al., 2003). PMRs are also used if care givers perceive the illness to be less severe or because outlets are thought to have a reliable drug supply (Mwenesi et al., 1995; Afolabi et al., 2004; Ibeh et al., 2005). Other reasons include their ability to respond to community pressures by selling drugs in accordance with the clients’ needs (Okeke et al., 2006), they are friendly, offer credit to clients, and are often cheaper than health facilities (Glik et al., 1989).

2.2.4 Lay people’s antimalarial user practice in south-western Kenya

Literature review on lay people’s antimalarial user practice reveal the failure of outsiders to understand that differing cultural premises and concepts may yield different but internally consistent and carefully rational modes of drug use (Etkin et al., 1999). In this

context, treatment decisions that arise may not be linear or logical in biomedical terms, but they too involve systematic choices (Williams and Jones, 2004).

For instance, Geissler et al., (2000), in a study of children and medicines among the Luo of Western Kenya, found that in Kenya where children are supposed to be barred from buying Western pharmaceuticals and where a number of drugs, antibiotics and some antimalarials among them, should be sold on prescription only. We have, as in most economically deprived countries, home- and self-treatment of common illnesses by lay people. This practice is common in East Africa (Mwenesi et al., 1995; Ndyomugenyi et al., 1998).

In fact, local shops deal in all sorts of pharmaceuticals including those that ought to be sold only by pharmacies (Snow et al., 1992). There is concern that even when 'sanctioned' providers offered correct dosing regimens and used drugs recommended by national policies, consumers opted to buy non-recommended treatments for malaria and reported giving sub-optimal antimalarials (Djimde et al., 1998).

This behaviour cannot be fully understood through clinically inclined studies on compliance to drugs that are recommended for a given disease episode. Since non-compliance is not only a result of patients misunderstanding the doctor's information, but it is also a product of the patients having different ideas and in particular having different interests (Van der Geest et al., 1996).

The treatment of malaria using antimalarial drugs in the study area has been explored by Nyamongo (1998) who found that 80% of the study participants reported self-treatment as a first-line of action: using antimalarial drugs available from local shops, private healthcare providers, and the government and mission clinics. However,

there is no sufficient research on the lay people's situated ideas and notions on the use of antimalarial drugs in the area and Kenya in general.

2.2.5 Health workers' practice and perceptions towards antimalarial policy change

Understanding the actions of those who prescribe and supply antimalarial drugs and the relationship between how they are prescribed and how they are actually used will aid in devising strategies to increase the correct use of antimalarial drugs (Djimde et al., 1998). Most treatment studies examine the behaviours of mothers or care givers in terms of 'appropriate' management of malaria. However, the quality of healthcare services needs to be examined as well (Williams and Jones, 2004). There is a growing recognition that even when formal providers have correct knowledge about drug dosages and therapeutic management, knowledge does not predict behaviour (Brugha and Zwi, 1998; Ofori-Adjei and Arhinful, 1996).

For example, a study in Uganda by Mbonye et al., (2005) showed that access to the use of SP by pregnant mothers was constrained by an advice by health workers to the mothers to drink more fluids when they take SP. This advice was found to have more cost implications because passion fruits, oranges and sugar cost quite some money. These additional costs were prohibitive to most poor pregnant mothers.

To overcome this challenge, Trostle (1996) argues that we do not fully understand drug use from the consumer or patient perspective, but continue to operate on assumptions that providers given the right information will practice rational drug use based on clinical reality. These assumptions, however, need to be tested. The Kenyan government's quick and swift changes on the national first-line anti-malaria policy in the

last one decade provides an ideal situation to explore what happens once guidelines are changed. This information will provide insights into lay people's and health workers' perceptions and practice on the implementation of the changed guidelines.

Kenya formally abandoned the use of chloroquine as its first-line treatment drug in 1998 in favour of sulphadoxine-pyrimethamine (SP). There has, however, been a precipitous decline in the efficacy of SP. Thus, the Ministry of Health, on the advice of WHO, adopted the use of Artemisinin-based Combination Therapy (ACT), as the first-line treatment of uncomplicated malaria (MOH, 2006). It is against this background, that this study, sought to explore local realities in which these ACT pills such as Coartem are made available and used.

This study, therefore, intended to contribute to the needed knowledge on the actual drug intake and the reasoning that drives behaviours surrounding the use of antimalarials (Molyneux et al., 2002). The study also attempted to understand the Abagusii people's situated ideas and notions of antimalarials - the most commonly used pharmaceuticals in the area.

The study used empirical evidence from Mosochi and Raganga villages in providing the social and cultural context of antimalarial use in the community. It provides the kind of information too often missing from analyses of medicalization in the developing world that continue to operate on assumptions based primarily on a biomedical perspective – assumptions that need to be tested (Troostle, 1996). This is particularly important, in light of the fact that there have been no concrete efforts explicitly to link local attitudes about medicines with biological outcomes (Etkin et al., 1990).

2.3 Theoretical Framework

The study drew its analytical framework from three concerns in anthropology – that have particularly interested medical anthropologists. First, to place people’s ideas and practice of pharmaceuticals (antimalarials included) in the context of a medically pluralist society was informed by the emic and etic approaches and the Explanatory Models (EMs) perspective. Second, to explain lay people and health workers ideas and practices on the changed antimalarial policy guidelines, the study utilized the cultural reinterpretation approach – a perspective commonly used by anthropologists to explain the process of people using old meaning to ascribe to new elements (Logan, 1973; Nichter and Nordstrom, 1989).

Emic and etic are terms used mostly by anthropologists to refer to two kinds of data concerning human behaviour – ‘insider’ and ‘outsider’ view about human behaviour. The neologisms “emic” and “etic,” which were derived from an analogy with the terms “phonemic” and “phonetic,” were coined by the linguistic anthropologist Kenneth Pike (1954). He suggested that there are two perspectives that can be employed in the study of a society’s cultural system, just as there are two perspectives that can be used in the study of a language’s sound system. In both cases, it is possible to take the point of view of either the insider or the outsider (Pike, 1967).

Lett (1990:130), “Emic constructs are accounts, descriptions, and analyses expressed in terms of the conceptual schemes and categories regarded as meaningful and appropriate by the native members of the culture whose beliefs and behaviours are being studied”. On the other hand, “Etic constructs are accounts, descriptions, and analyses expressed in terms of the conceptual schemes and categories regarded as

meaningful and appropriate by the community of scientific observers”. In taking an emic approach, therefore, a researcher tries to put aside prior theories and assumptions in order to let the participants and data ‘speak’ to them and to allow themes, patterns, and concepts to emerge. In situations where a researcher takes an existing theory or conceptual framework and conducts research to see if it applies to a new setting or population, that researcher is said to be taking an etic approach.

This study utilized the emic (insider) perspective as a culture-specific viewpoint that is consistent with the ideology of the society under study and that presents health-related (and other) phenomena through reference to indigenous understanding of the universe. On the other hand, the etic (outsider) perspective uses concepts and theories that are grounded in some ideology to create a frame work on which to project and interpret medical beliefs and behaviours (Young, 1983; Etkin, 1996).

Further, to fully understand context-based notions and ideas about pharmaceuticals with regard to antimalarial drugs in the study villages, the study utilized explanatory models. Explanatory models encompass a person’s ideas about the nature of their problem, its cause, severity, prognosis, and treatment preferences (Kleinman, 1980).

Explanatory models are based on the assumption that cultures, in making sense of illness, have clusters of explanatory models, the lenses through which the cultures perceive and understand illness. First developed by Arthur Kleinman (1980), the term refers to interpretive notions about an episode of sickness and treatment that are employed by all those engaged in the clinical process.

An explanatory model reveals how people make sense of their illness and their experiences of it. Thus, explanatory models are often used to explain how people view their illness in terms of how it happens, what causes it, how it affects them, and what will make them feel better. It is a method used in both clinical settings and qualitative research as a way of obtaining individual explanations of a particular phenomenon.

In medical and research settings, explanatory models provide clinicians and researchers with an idea of how patients experience and interpret their conditions. This method lets clinicians improve quality of care. It also helps health researchers understand their subjects, and this could help in the design of appropriate therapies or interventions, or explain why some people reject medication or refuse to comply with a prescribed therapy.

Explanatory models are able to “integrate clinical, epidemiological and social science frameworks” (Weiss et al., 1992: 819) by improving the depth of scientific understanding of disease and illness. Dissonance between patients’ and professionals’ explanatory models may affect health-seeking behaviour (MacCarthy, 1998), treatment compliance (Foulks et al., 1986) and culturally sensitive clinical practice (Bhui and Bhugra, 2002). The major advantage of this method is that it allows researchers and clinicians to draw illness experiences from their participants in a structured way.

To explain lay people’s and health workers’ ideas and practices on the changed antimalarial policy guidelines, the study utilized the cultural reinterpretation approach. It has long been observed by medical anthropologists that items from one cultural context may be given a very different meaning when they are introduced into another. Pharmaceuticals developed according to scientific paradigms are separated from

biomedical contexts and integrated into culturally specific modes of understanding. There are always pre-existing concepts about treatment and medicines, which form a basis for the cognitive appropriation of new drugs. Cultural reinterpretation, however, is never a matter of fitting new items into consistent and unchanging 'traditional' modes of thought. On the contrary, lay people's ideas about drugs are formed according to their experiences and situations; a number of different conceptions about a particular drug may co-exist in the same local culture.

According to Van der Geest (1990), drugs undergo cultural reinterpretation when they are fitted into locally existing frames of understanding; they move from one context of understanding to another. He, therefore, argues that all drugs, including those which reach peripheral rural health facilities like the two rural study villages, as part of essential drugs programme, should be subject to commercial transactions and locally specific interpretations. In relations to existing ethnographies on logic of meaning and social efficacy of medicines, we interpret in this study, the social and cultural complexities in which pharmaceuticals are used in the two study villages.

2.4 The Study Assumptions

In order to achieve the research objectives the following assumptions were examined.

1. Local population have alternative health care systems in which pharmaceuticals are transacted
2. Lay people have different avenues of accessing information about pharmaceuticals in the community.

3. Lay people and health workers have their own ideas and notions (perceptions) about antimalarials that are transacted in the community.
4. Lay people and health workers in the community have different practices towards national policy change on first-line antimalarial drugs.

2.5 Definitions of Key terms

| | |
|---------------------------------------|---|
| Antimalarial Treatment Policy | A set of recommendations and regulations concerning the availability and rational use of antimalarial drugs in a country. |
| Appropriation of antimalarials | A process of reinterpretation and localization of antimalarials once introduced to different social settings. |
| Cultural reinterpretation | Process by which old meanings are ascribed to new elements or by which new values change the cultural significance of the old forms |
| Drug | The generic name for any substance used for prevention and treatment of diagnosed illness for the relief of the symptoms. |
| Healthcare: | Is used to refer to any practice related to the restoration of health or prevention of ill health or disease. |
| Health system | is the organization of people, institutions, and resources to deliver healthcare services to meet the health needs of target populations. |

| | |
|-------------------------------------|--|
| Household | A domestic unit consisting of members of a family who live together along with non relatives as servants. |
| Lay people | Non-health professionals involved in the management of their own health problems or of the health problems of people they know (acting as care givers to their children) |
| Medicine: | These are substances used in the treatment of sickness. Usually refer to therapeutic drugs to distinguish them from addictive drugs, which are used illegally. |
| Pharmaceuticals | The practice of preparation, dispensing and sale of drugs, especially for medicinal purposes. |
| Self-medication/treatment: | Is used here to refer to the act of treating oneself or administering of pharmaceuticals for treatment of illness without consulting with a professional healthcare taker. |
| Symptoms: | Used to denote any noticeable changes in the body or its functions to indicate the presence of disease. |
| Transaction of antimalarials | The act of exchanging antimalarials in the community. |

CHAPTER THREE

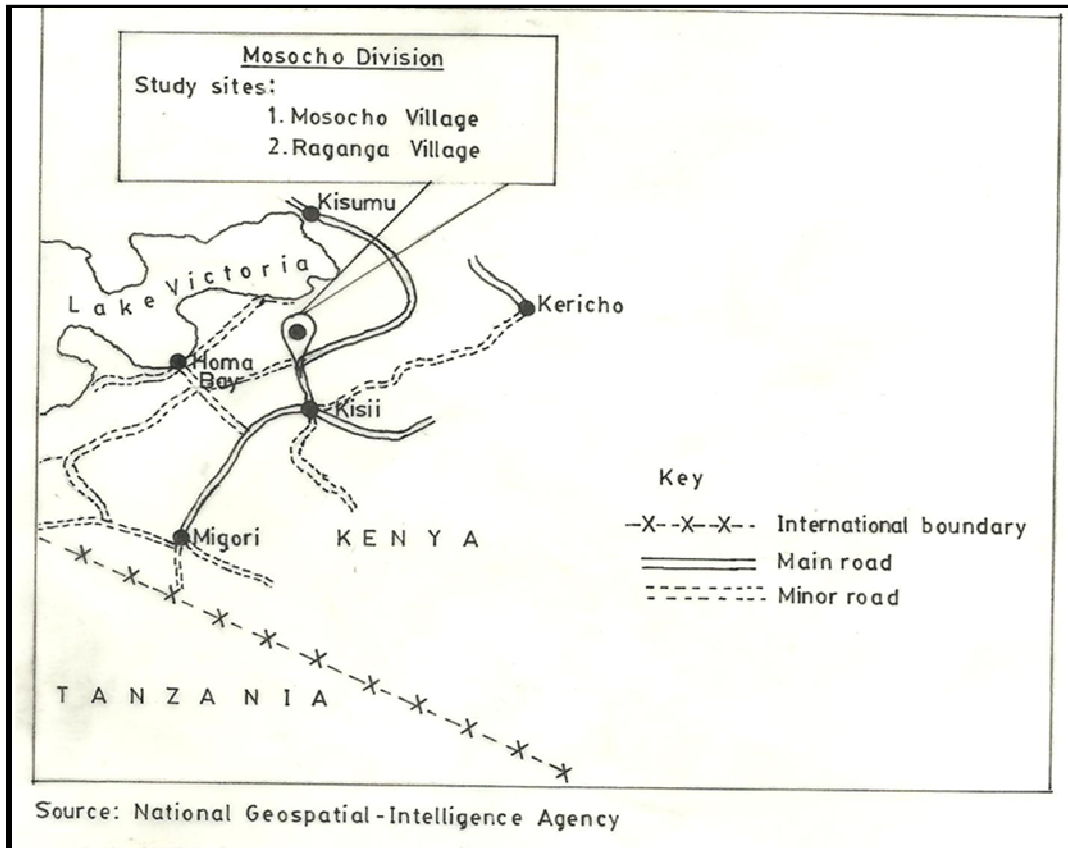
METHODOLOGY

3.1 Introduction

This chapter presents an analysis of the methodology and methods that were utilized in the collection of data for the development of this thesis. The selected methods were considered for this study because of their usefulness in responding to key questions that the thesis set out to analyze. The chapter also describes the process of collecting and managing data and some of the ethical issues that were at play during the data collection and analysis period. Chronologically, this section includes: description of the study sites and preparation for the field, research design, study population, methods of data collection, data management and analysis, ethical considerations and limitations of the study.

3.2 Study site

This study was conducted in Mosocho and Raganga villages situated in Mosocho Division, Kisii Central Sub - County, Kisii County (Map 3.1). Kisii County is one of two out of the 47 Counties in Kenya (the other is Nyamira County) that are predominantly inhabited by the Abagusi. It is located to the South-east of Lake Victoria and is bordered by six Counties with Narok to the South, Migori to the West, Homa Bay to the North-west, and Kisumu to the north, Bomet to the South-east and Nyamira to the East. The two study villages are located about 15 and 20 Kilometers (Mosocho and Raganga villages respectively) from Kisii Town. According to the 2009 National Census, Kisii Central district had 365,745 people (Republic of Kenya, 2010).



Map 3.1: Location of Mosocho Division – Kisii County, Kenya.

The two villages are located five kilometers apart in a typically rural area, characterized by poor infrastructure, lack of safe drinking water, with most residents having no electricity and an inadequate public health service system.

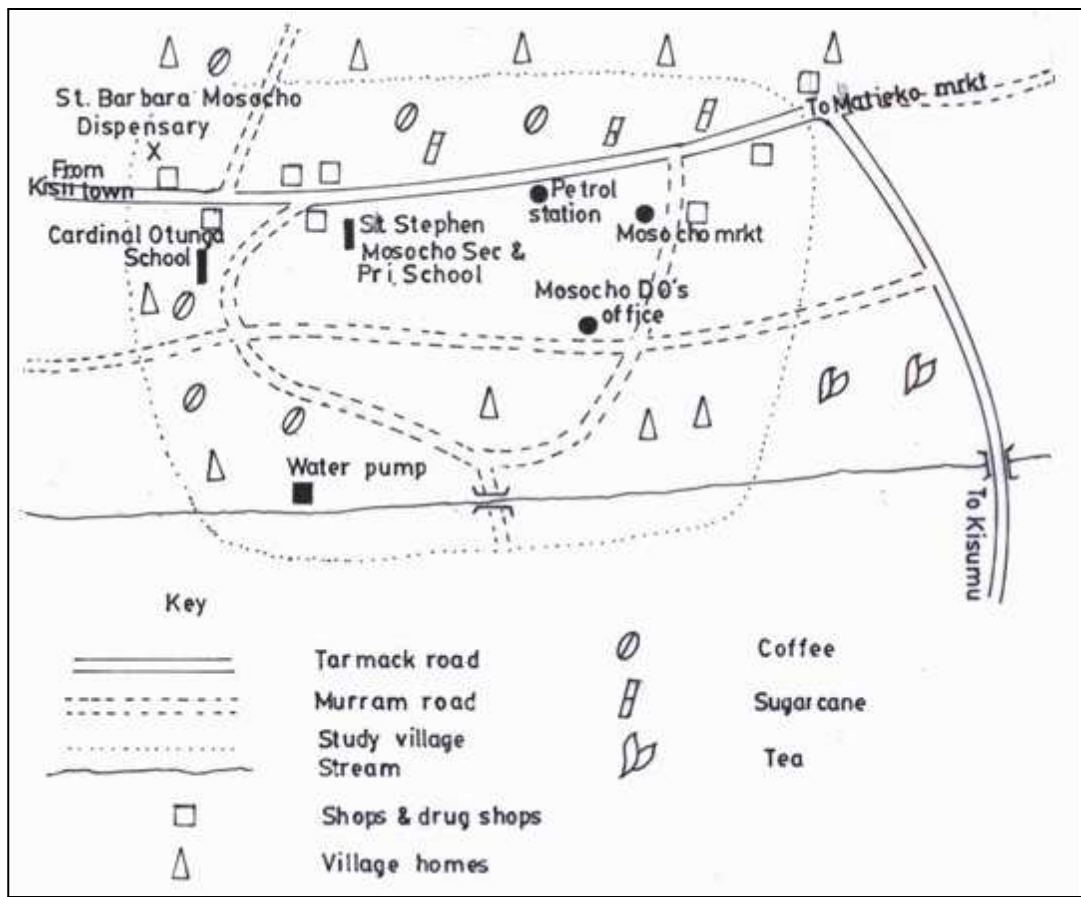
3.2.1 Mosocho and Raganga villages

Generally, the road network in Mosocho Division is in a deplorable state. It is only Mosocho market that is served by a tarmac road, which connects the market to Kisii and Kisumu towns. But most of the roads in the study villages are murrum. The roads

between the villages are impassable during the rainy season. The most reliable means of transport is the motorcycle taxis (locally referred to as *Piki Pikis*). These motorcycles are preferred because they are able to navigate through the rough sections of these roads and foot paths.

Despite these shared similarities, the two study villages have nevertheless important socio-economic differences that were crucial to this study. The selection of the two sites was premised on the fact that they would provide a contrasting comparison on how lay people transact antimalarial drugs in locations that have differential access to formal healthcare facilities. In this regard, it was hoped that data from these sites would be used to describe the various socio-economic dynamics of anti-malarial use in rural settings.

Mosocho Village, for instance, is located along the busy Nairobi-Kisumu road and has a market centre (Mosocho). The market centre is the divisional administrative headquarters and has relatively developed infrastructure and better social amenities compared to surrounding areas (map .1). It has three private clinics, one Catholic-sponsored dispensary at Mosocho market, Gesieka government dispensary (though outside the study village) and several drug shops whose utilization goes beyond the village.



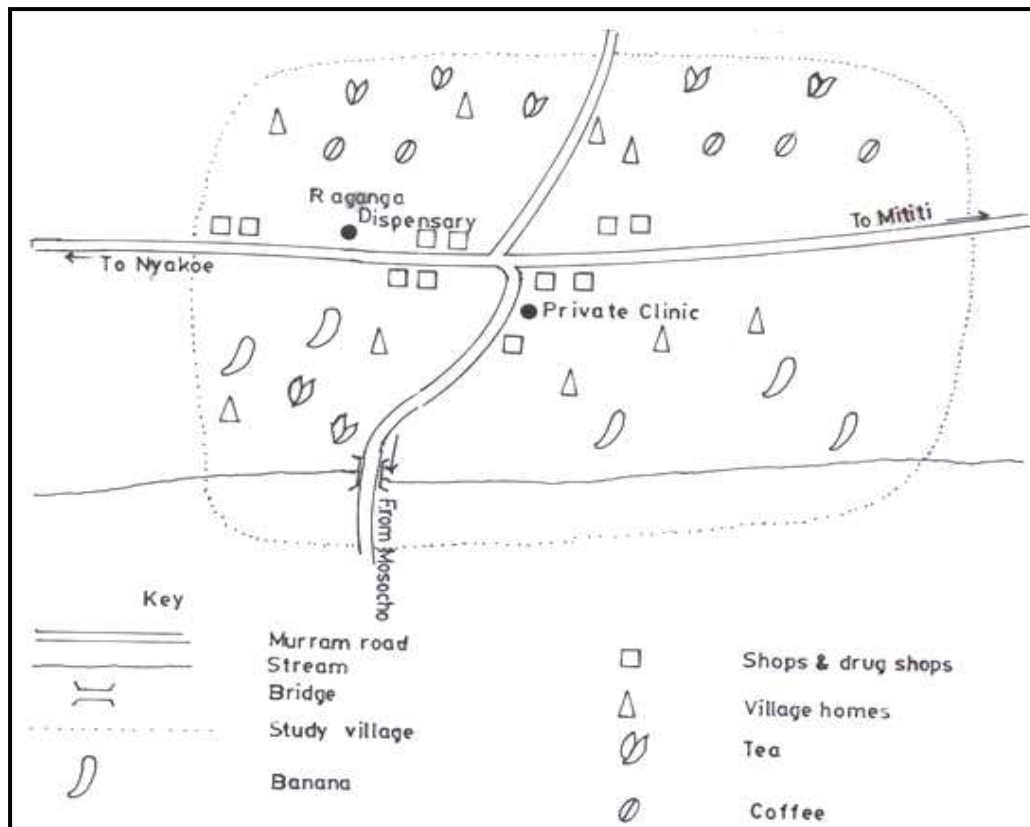
Map 3.2: Mosocho Village community map

The busy Nairobi-Kisumu tarmac road which passes through the village makes the village accessible to the rest of the country. The village has piped water and electricity but these are only accessible to a minority of its residents, since most of the households cannot afford to pay for these services. The services are also limited to the residents near or in the local market centre (Mosocho).

Raganga Village, on the other hand, is located in the remotest location in the division (Map 3.2). The village has a poor road network. Also notable is Raganga Health Centre (government health facility), drug shops, and one private pharmacy-cum-private clinic. The village also has a few households that have electricity connection. Because of the long distance to health facilities and a deplorable road network in the area,

malaria patients are commonly ferried using wheelbarrows during epidemic periods. Indeed, because of this limitation, money-minded private health practitioners commonly open ill-equipped temporal private clinics within the village whenever there is an outbreak but as soon as the outbreak is over they relocate.

Additionally, because of the emergency nature of these outbreaks the already over-stretched government facilities in the area cannot cope with the increased malaria cases thus making it even more difficult for the government machinery to curb these unprofessional acts of health practitioners that are of potential public harm. The situation is compounded by the fact that these clinics are normally ill-equipped and without qualified staff. This poses a major challenge to malaria control in the area.



Map 3.3: Raganga Village community map

3.3 Study design

This study was designed as a longitudinal study that allowed the researcher to make several repeated observations on the transaction and appropriation of antimalarials over a period of 12 months (February 2010 to February 2011). This was complemented by cross-sectional observations in order to allow comparison of key socio-demographic characteristics in relation to the use of antimalarials in the community. The study utilized both qualitative and quantitative methods of data collection.

The study was conducted in three phases with frequent visits to the field so as to examine all the study questions and to be able to elucidate emerging issues from the data already collected and analyzed. The first phase of the study involved preparatory meetings with local leadership, village census, free listing interviews and carrying out community mapping exercise. This phase accorded the researcher an opportunity to cultivate the necessary rapport and to collect information that was used to refine other instruments of data collection such as questionnaire, for household survey, FGD and IDI interview guides, which were to be used in the remaining two phases.

The second phase involved conducting a household survey and recruitment of longitudinal malaria household case study informants. Third and final phase involved conducting FGD, IDI and the longitudinal malaria household case study interviews.

3.4 Sample population

The study population comprised area residents aged 14-60 years and health workers, who are currently residing and working in Mosochi and Raganga Villages. The targeted population groups included: School-aged children, youths, adults, health workers and

drug-shop owners. The above categories of research participants were identified during the research design phase as ‘key’ to the provision of data that would help answer the study’s main research questions.

The consideration for this categorization was informed and guided by a need to interview only those respondents who were thought to have the necessary information needed for this study. But it should be noted that the researcher’s engagement with these respondents did not limit interaction and conversation with individuals outside those “boundaries” rather, and quite often, the researcher had conversations with individuals outside those groups. This was particularly important for cross-checking some of the information from the described “rigid” categories.

The study participants were selected from the different target population groups taking into consideration their age, gender, education, socio-economic factors and an individual’s malaria experience. Typical of qualitative research methods, the sample size was not predetermined but the researcher continued to gather information until no new information emerged.

3.5 Sampling procedure

The primary goal for this research was to provide context based in-depth description of the transactions of pharmaceuticals rather than generalizability of the study sample to the study population. This nature of research design requires that study participants are recruited by means of thematic sampling – the ability to provide information on the area of investigation. The study therefore, mainly utilized ‘purposive’ or ‘target’ sampling to recruit informants for survey, FGD, IDI and free listing based on the fact that they had the required attributes or traits to meet the study objectives. However, Informants for

longitudinal malaria household case studies were recruited through snow ball sampling technique. The sampling procedure involved already recruited respondents referring the researcher to other individuals with similar characteristics and therefore eligible for inclusion in the study. In total 350 respondents were recruited for this study as follows, survey (195), free listing (36), IDIs (28) and FGDs (80 participants for the 8 discussion sessions).

3.6 Methods of data collection

This study utilized the mixed methods approach. The advantage of using this approach it allows the researcher to combine the strengths and correct some of the weakness of any one source of data. The research methods used in this study included both qualitative and quantitative techniques of data collection.

3.6.1 Village census

The first one month was used to conduct village census and mapping for both study sites. This was important for several reasons. First, it helped to establish a reliable sampling frame from which to draw study participants as it helped up-date available census data. Secondly, it provided the socio-demographic characteristics of the area residents which are used in this thesis. Third, it served as the first formal close contact with the community members and, thus, accorded the researcher another opportunity to explain the study aims and objectives to the entire community members. Finally, the enumeration and mapping of the village made it easy to identify and access study participants and entry points. For example, participants' homesteads and location of

health facilities and drug shops in the village map were used throughout the study period as a guide to the research team (Maps 3.2 and 3.3).

The tool for data collection was a pre-prepared questionnaire (Appendix Seven), which was administered to a particular household head or responsible member of the household, who had the details of all the household members.

3.6.2 Community mapping

Two community maps showing the two study villages, homesteads and general topography were produced from community residents (Maps 3.2 and 3.3). To carry out the community mapping exercise we started with a large white paper and markers laid down on one selected venue in each site. Through the local elders we assembled the people together and explained to them why we were doing the village maps and together the community aided the researcher in drawing a community map for each of the villages.

After this, the researcher took the acceptable version of the maps by the community members and drew it to fit into an A4 paper. To ensure maximum accuracy in presentation and location of key community physical features the mapping exercise was carried out in a back and forth manner, between the community and the researcher. Throughout this process, there was a lot of discussion and argument on people's understanding of their own village boundaries and key features that guided what was to be included in the maps.

3.6.3 Structured Interviews

After the village census, the first one-month of the study was used to conduct a survey in the two villages. A Questionnaire tool (Appendix Three) was administered among purposively sampled participants from the two villages. The questionnaire contained both “open-ended” and “close-ended” questions. A total of 195 participants (Mosocho, 97 respondents and Raganga, 98 respondents) were included for the face-to-face interviews.

The inclusion criteria for survey respondents included:

- a) Aged 14-60 years.
- b) An area resident with at least 5 years continuous stay.
- c) Must have or is suffering from an episode of malaria at the time of interview.
- d) Willingness to participate in the study by signing the informed consent form.

The main advantage of this method was that all the respondents were asked exactly the same questions in the same order, allowing the researcher to make comparisons. A training of interviewers on interview techniques and meaning of the questions, as well as the appropriateness of the local translation preceded the interviews. During the training, each of the questions was discussed, translated into the local language for clarification and standard local terms were agreed on before data collection. The questionnaire was pilot-tested and questions revised where necessary. The questionnaire was particularly useful in providing information on formal and non-formal healthcare options and sources of pharmaceuticals.

3.6.4 Free listing

This is a structured interviewing method used in a cultural domain analysis to understand the relationship among items, concepts and ideas. A cultural domain may be defined as "an organized set of words, concepts, or sentences, all on the same level of contrast, that jointly refer to a single conceptual sphere" (Weller and Romney, 1988:9). Cultural domain analysis aims to understand how a culture, or a particular group of people, perceives items belonging to the same cultural domain (Bernard, 2005). Free listing is a useful tool to define the items of a cultural domain and to guide further research. Free listing consists of asking a group of informants to cite all the items of a selected cultural domain they can recall.

This method is based on the assumption that first, informants list what they perceive as the most salient items. One piece of evidence supporting this assumption is that when people recall items belonging to a cultural domain, they tend to recall more easily items that are commonly experienced in their daily life rather than items that are scarcely encountered (Romney and D'Andrade, 1964; Gatewood, 1983). In free listing, you ask informants to "list all the X you know about" or "what kinds of X are there?" Free listing was used in this study to provide information on the types of pharmaceuticals (drugs) and antimalarials commonly used in the two villages.

Free listing informants are usually 15 to 25 persons. In this study a total of 18 participants from each village were purposively selected from a cross the villages and included in the study. The interview was conducted using a question guide (Appendix Two). The interviews were conducted at the beginning of the study, so as to provide a

free list of the most common pharmaceuticals (drugs) and antimalarials used in the area.

3.6.5 Focus group discussions

A focus group is a group that gathers together people from similar backgrounds or experiences to discuss a specific topic of interest to the researcher (Dawson et al., 1993). Sampling for FGDs endeavoured to create a homogenous group with similar experience to facilitate dialogue (McDougall and Fudge, 2001). Methodologically, focus group discussions involve a group of 6–12 people who come from similar social and cultural backgrounds or who have similar experiences or concerns. Focus groups do not aim to reach consensus on the discussed issues. Rather, focus groups ‘encourage a range of responses which provide a greater understanding of the attitudes, behaviour, opinions or perceptions of participants on the research issues’ (Hennink, 2007: 6).

In this study, FGDs were used to explore the local healthcare provisions, commonly used pharmaceuticals in the area, and lay people’s attached meanings and knowledge of pharmaceuticals, especially the use of antimalarial pills use and how they are used in the daily social relations. The FGDs helped solicit information on lay people and health workers perceptions and practices on the use of ACT pills. Generally, FGDs complemented other data collection techniques and also helped to uncover factors related to complex behaviour about norms and beliefs about pharmaceuticals use in the community. The sessions were guided by a prepared interview guide (Appendix Four).

A total of 8 FGDs were conducted in the study (4 in each village). The FGDs participants were selected to represent various target groups, namely: 2 for young girls in secondary schools, 2 that had a mixture of adult male and women, 2 for young boys

and 1 each for old men and women. Each FGD session constituted between 8-12 participants for the discussion. The FGD session moderator used an interview guide to ask questions in the local language for the lay people and English for the health workers. The information solicited was written down in notes form and at the same time was voice-recorded so as to ensure that no information was lost and that verbatim conversations were captured from the participants. Most of the FGDs were held in the first half of the study.

3.6.6 In-depth interviews

In-depth interviews are usually conducted face-to-face with the recruited informant; though phone interviews are also possible. A basic assumption in in-depth interviewing is that the meaning people make of their experience affects the way they carry out the experience. At the root of in-depth interviewing is an interest in understanding the experience of other people and the meaning they make of that experience.

In this study, a total of 28 in-depth interviews were conducted (15 and 11 in Mosochi and Raganga Villages, respectively). The in-depth interviews targeted the following groups: school-age children (2), youths (2), health workers (8), adult males (6) and females (10). These in-depth interviews provided interesting and deep insights onto the study thematic areas of concern and were followed up with case studies. The interviews solicited information following a prepared Interview guide (Appendix Five) on various research topics ranging from the lay people's malaria control practices, their perceptions and experience with antimalarials as well as the response and practices of both the lay people and health workers towards the national first-line antimalarial policy change from SP to ACT.

3.6.7 Longitudinal household malaria case studies

A longitudinal study is a correlational research study that involves repeated observations of the same variables over long periods of time and unlike cross-sectional studies, in which different individuals with same characteristics are compared, longitudinal studies track the same persons over time. The case studies were purposely selected households from each village, who were visited after every three weeks to check on their well-being but with regard to malaria treatment practices.

Longitudinal studies demand a rigorous follow - up of the population involved throughout the study period (Onyango-Ouma, 2001). In addition, and from in-depth interviews with informants, this study further conducted a total of 11 longitudinal household malaria case studies (5 in Mosocho and 6 in Raganga villages).

Table 3.1: Characteristics of longitudinal household malaria case studies

| CODE | AGE | GENDER | NO. CHILDREN | MARITAL STATUS |
|----------------|-----|--------|--------------|----------------|
| MOSOCHO | | | | |
| CS1MOFE | 27 | Female | 4 | Married |
| CS2MOMA | 48 | Male | 6 | Separated |
| CS3 MOFE | 34 | Female | 4 | Widow |
| CS4 MOFE | 30 | Female | 4 | Married |
| CS4 MOFE | 45 | Female | 4 | Married |
| RAGANGA | | | | |
| CS1RAFE | 42 | Female | 4 | Married |
| CS2 RAFE | 35 | Female | 3 | Widow |
| CS3 RAFE | 47 | Female | 7 | Married |
| CS4 RAFE | 45 | Female | 6 | Married |
| CS5 RAFE | 30 | Female | 3 | Married |

The data sought yielded rich information on lay people's lived experiences with modern medicines and pharmaceutical technologies, treatment seeking practices for malaria and febrile illness and attitudes towards pharmaceuticals. These malaria case stories were collected throughout the entire period of the study. All but one of the case studies was female, aged between 27 and 48; all of them had children, 7 were married, 1 separated and two widows (Table 3.1).

3.7 Data management and analysis

Various quality control measures were put in place that ensured the quality of information collected was guided. For instance, before we commenced data collection, we organized preparatory field meetings with the community through their leaders. The researcher did a two-weeks training for the field assistants and a data entry clerk. Field assistants and the field data entry clerk were recruited based on literacy skills, availability during the study period and familiarity with the neighbourhood. The study data collection tools for actual census were pre-tested to ensure that any weaknesses were corrected. This process also ensured that the interviewers familiarized themselves with the census protocol. The data collected were subjected to through cleaning and data entry was done by one data entry clerk under close supervision by the researcher.

Survey data were sorted by village and the questionnaires numbered from the first to the last. The data were coded and entered into the computer for storages using MS Word 97-2003. Qualitative data were recorded in written notes and voice-recordings. Written notes were used to provide backup copies and to capture non-verbal cues. The voice-recorded data was verbatim transcribed, translated into English and typed into Microsoft word software. To avoid loss of data during analysis, frequent

comparisons were made between the field notes and transcriptions and relevant sections of the voice records listened to in order to get appropriate quotes. Illustrative words and phrases were kept in their original language especially where direct translation was difficult.

An important feature of much qualitative research is the close connection between data collection and analysis. This closeness allowed the researcher to collect the first data in the field and start to analyze them at the same time. It also provided him with the opportunity to reformulate and modify the data collection protocol. While this procedure was followed in the study, the actual process of data cleaning and analysis for both qualitative and quantitative data and PhD. dissertation writing were done in Nairobi at the Institute of Anthropology, Gender and African Studies (IAGAS).

Qualitative data were manually processed and analyzed. This was done by applying codes within the structure of thematic interview guides. Preliminary analysis included open coding and progressive categorization of issues based on inductive (where analytical categories were derived gradually from the data) and deductive approaches (where ideas from the interview schedule shaped the coding scheme) (Pope et al., 2000). These categories (themes) were further modified as more issues were examined from the data. Categories derived from the data were further analyzed through the development of analysis tables. At this stage, triangulation of data was enhanced through comparisons of analysis table content within and across sites to look for similarities and differences to support identification of key issues.

Descriptive statistical analysis such as frequency distributions, percentages and means were done using SPSS software package for questionnaire survey data. Further,

data from free lists were tabulated and analyzed using free listing method – through a statistical package for anthropological research (ANTHROPAC). ANTHROPAC is a menu-driven DOS programme for collecting and analyzing data on cultural domains. The programme helps collect and analyze structured qualitative and quantitative data including freelists, pilesorts, triads, paired comparisons and ratings. ANTHROPAC's analytical tools include techniques that are unique to anthropology, such as consensus analysis, as well as standard multivariate tools such as multiple regression, factor analysis, cluster analysis, multidimensional scaling and correspondence analysis <http://www.analytictech.com/anthropac/anthropac.htm>.

The two sets of data outputs – quantitative and qualitative – were triangulated. Triangulation is an attempt to map out, or explain more fully, the depth of human behaviour by studying it from more than one standpoint. It was useful for this study because it allowed the study to combine individual and group research methods to help reduce bias. For example, self-reported information from the survey informants was complemented by observational and longitudinal research methods.

3.8 Ethical considerations

Despite the fact that the study did not involve physical pain to any of the study informants as in most biomedical research initiatives, it was still essential that ethical procedures in research were followed throughout the study period. However, ethical issues in qualitative research are often more subtle than issues in survey or experimental research. These issues are related to the characteristics of qualitative or field methodology which usually include long-term and close personal involvement, interviewing and participant observation. Field research such as used in this study is an

approach based on human interaction, rather than one viewed as outside human interactions, hence the need for the field researcher to take keen interest on the respect and rights of respondents throughout the study.

Before the commencement of field work, this study was submitted to two ethical clearance review bodies, Kenyatta National Hospital and University of Nairobi – Ethics and Research Committee (KNH/UON-ERC) and the World Health Organization Research Ethics Review Committee (WHO ERC) for review and research clearance. The study protocol was first, submitted to the KNH/UON-ERC and after approval was submitted to WHO ERC as required of all the research grants that receive sponsorship from TDR/WHO.

Before the start of all the interviews, the interviewee was read information on the informed consent sheet explaining the purpose of the research, the objectives and the nature of their required participation and given the opportunity to ask questions. Confidentiality was assured and ensured to the information provided. Oral consent for all the study participants was sought before any study participant was interviewed.

Written consent was sought from all survey respondents, IDIs and free listing respondents or from parents or guardians on behalf of the children. While verbal consent was obtained from census and FGD participants, as earlier my research experience while working with MERLIN suggested that some of the local people are threatened and discouraged by a written consent procedure. In addition, we sought consent to voice-record information from qualitative interviews.

The study had budgeted for malaria treatment for those participants who were found to be in serious financial need. Further, field researchers were only allowed do

recording of conversations with a taped consent. After the analysis and writing of the dissertation community members shall get a feedback of the findings through community meetings.

3.9 Preparation for the field

Ethnographic research such as this one requires the researcher to address his or her relationship with the field informants. Just before commencing fieldwork, I spent time to reflect about my identity during the research and these reflective moments were always guided by the suggestion by Narayan (1993) that ethnographic researchers should focus on the quality of relations with the people they study rather than fixity of the distinction between who is an insider and an outsider. From the word go, I considered myself both an insider and an outsider in the field.

I considered myself an insider since I am a member of the Abagusii community. I went to the field well aware of the culture and language of 'my people' - Abagusii. Indeed, in many cases, this identity proved to be important from time to time while in the field. During my field work, most of my communications were done in the local *Ekegusii* language. I must say that my understanding of the culture and the language facilitated smooth interaction with the community around me. Knowing the culture also came in handy especially in interpreting cultural phenomena as well as picking subtle clues. For instance, when making interview appointments, I knew that most women in this largely agricultural community preferred these sessions to be conducted in the afternoons, but if they found that I preferred morning hours for a particular interview, they considered it impolite to decline.

At the same time, I was always aware that I am different, because of my other identity as an outsider. Although I was born and nurtured in Abagusii traditions when I was in my early years of life, I have, too, lived most of my adult life in the cosmopolitan Nairobi City. So to my host (community), I was subjected to differed labels, such as a privileged person who has had access to higher education. I was very aware that in places like Mosoch Division where a first degree is considered as a great achievement, not to mention that I am a lecturer at Kenya's premier university (of Nairobi) – I was an outsider. To overcome this, I tried to limit discussions on my full identity beyond where I come from and what I am doing. As much as I tried to down play this identity and be like one of them, some of my informants would not help but refer to me as '*daktari*' (a Kiswahili term commonly used by the locals to refer to medical doctors). They called me *daktari* because they assumed that since I was doing research related to malaria then I am a medical doctor. On the other hand, young men and women who had finished high school who got to know that I am a lecturer at the University of Nairobi spared no time to seek advice from me on their career prospects and choices. To me, this was a constant reminder that they saw me as different – an outsider. An identity that I wanted to shed at every opportunity.

Despite these conflicting identities, I as an ethnographer required to navigate through them in a way that the research objectives would be achieved. According to Githigi (2009), a researcher can intentionally play an outsider or insider identity to obtain information that they would otherwise not obtain. So, throughout the field work, I played this insider and outsider identity to harvest the most of the study from any interactions and discussions. My experiences in the field are part of what Narayan (1993) calls

multiplex identity. She argues that “a person may have many strands of identification available, strands that may be tugged open or stuffed out of sight” (Narayan, 1993: 673); Onyango-Ouma (2003) also argues that we as anthropologists must face these multiple identities while in the field.

CHAPTER FOUR

TRANSACTION OF PHARMACEUTICALS IN MOSOCHO AND RAGANGA VILLAGES

4.1 Introduction

In this chapter I present and discuss the results indicating key findings related to how lay people transact pharmaceuticals in the two study villages, which typically have a pluralistic healthcare system. Medical pluralism is the name given to a situation where a patient has a number of choices when selecting a system of treatment. Specifically, this chapter describes, first, socio-demographic characteristics of the census population. Second, the local realities in which modern pharmaceuticals are transacted and lay people's antimalarial use behaviour in Mosocho and Raganga villages.

4.2 Socio-demographic characteristics of the census population

The village census results for the two study villages indicated that they are largely inhabited by a youthful population with 65.6% and 73.2% of the population for Mosocho and Raganga respectively, aged below 30 years. Only 6.5% of Mosocho residents and 1.8% of Raganga residents were aged above 60 years. The results also showed that most of the people in the two villages are Christian adherents and that the Catholic Church has a huge presence in the two areas (Mosocho, 62.7% and Raganga, 85%).

The data further revealed that a majority of the people in the two villages did not continue with their education beyond secondary level, 70.4% and 85.2% of the residents from Mosocho and Raganga respectively do not have tertiary level of education. A majority of the residents are literate with only 12.1% and 13.7% of

Mosocho and Raganga, respectively, having no formal education (Table 4.1). A close analysis of the data indicated that a majority of those who had no formal education were above 50 years of age.

The spring was the main source of water in the two study villages, (78.2% and 97.4% for Mosocho and Raganga, respectively). The census results further revealed that most residents in the two sites are peasant farmers. However, the question on the occupation of the respondents was not well received by the respondents and as such had a high non-disclosure rate (Mosocho 55% and Raganga 44.9%). Although this was a curious observation by the research team during the whole census exercise that was held at the beginning of the study, later during our continued interaction with the local people we came to realize that people considered the question as obvious for us to discern, since a walk through the villages by the research team 'would without doubt', according to one local resident, have shown us that life in the two villages is all about small-scale farming.

The census results from the two study villages showed that Mosocho Village had a total of 82 households with a total population of 354 people that included both adults and children (48.6% male and 51.1% female). Raganga Village had 49 households with a total population of 227 people (45.5% male and 55.5% female), as shown in the Table 4.1 below.

Table 4.1 Socio-demographic characteristics of the population census

| Variable | Characteristics | Mosocho Village | | Raganga Village | |
|---------------------------|------------------------|------------------------|----------|------------------------|----------|
| | | N=354 | % | N=227 | % |
| Age | Below 18 | 181 | 51.1 | 136 | 59.9 |
| | 19 -30 | 55 | 15.5 | 30 | 13.3 |
| | 31 - 40 | 60 | 16.9 | 31 | 13.7 |
| | 41 - 50 | 25 | 7.1 | 21 | 9.3 |
| | 51 - 60 | 10 | 2.8 | 5 | 2.2 |
| | Above 60 | 23 | 6.5 | 4 | 1.8 |
| Gender | Male | 172 | 48.6 | 101 | 45.5 |
| | Female | 182 | 51.4 | 126 | 55.5 |
| Religion | Catholics | 222 | 62.7 | 196 | 86.3 |
| | Protestants | 80 | 22.6 | 31 | 13.7 |
| | Other religion | 48 | 13.6 | 0 | 0 |
| | No religion | 4 | 1.1 | 0 | 0 |
| Level of education | Not schooled | 43 | 12.1 | 31 | 13.7 |
| | Primary | 195 | 55.1 | 173 | 76.2 |
| | Secondary | 55 | 15.5 | 21 | 9.2 |
| | College | 47 | 13.3 | 1 | 0.4 |
| | University | 10 | 2.8 | 0 | 0 |
| | No disclosure | 4 | 1.1 | 1 | 1.1 |
| Water source | Spring | 277 | 78.2 | 221 | 97.4 |
| | Piped | 2 | 0.6 | 0 | 0 |
| | Borehole | 75 | 21.2 | 6 | 2.6 |
| Occupation | Farmers | 90 | 25.4 | 124 | 54.6 |
| | Casual labour | 50 | 14.1 | 1 | 0.4 |
| | Formal Job | 30 | 8.5 | 0 | 0 |
| | No disclosure | 184 | 52 | 102 | 44.9 |
| Housing | Mud-thatched | 6 | 1.7 | 5 | 2.2 |
| | Mud-iron sheet | 176 | 49.7 | 222 | 97.8 |
| | Wood-iron sheet | 5 | 1.4 | 0 | 0 |
| | Permanent | 166 | 46.9 | 0 | 0 |

Most of the residence structures in Raganga Village (97.6%) were semi-permanent structures made up of mud-walls and corrugated iron-roofs. In Mosocho

49.7% of the residents had mud-walled and iron-roofed houses, followed by 46.9% of the residents who had permanent houses. It should be noted that Raganga Village is located in the remote parts of the division compared with Mosochi Village that has relatively developed infrastructure near Mosochi market and Kisii Town. Besides, most of the latter's inhabitants are immigrants mostly from other parts of Abagusii land who have settled in the area due to its proximity to Kisii town.

4.3 The meaning of medicine in local contexts

The study revealed that the term medicine is locally referred to as *amariogo*. *Amariogo* in Mosochi and Raganga villages is a general term used to refer to plants and other substances, for instance, herbs and food forms, used for medicinal ends as well as to the pharmaceutical products such as pills and injections. The use of the word *amariogo* in the two villages, however, suggests that the term has a wider meaning. It not only refers to medicine used to treat illness but also substances, objects or techniques used to prevent illness (*ogokenga*) and as a form of protection from misfortune (For instance, wearing amulets). One male informant at Raganga Village reported that *amariogo* are used to cure diseases'. An interesting observation on the use of the term *amariogo* arose when informants were asked to define or explain the meaning of *amariogo* – most qualitative data narratives from the two villages reported that it cures illness.

Data from FGDs, IDIs and longitudinal malaria case studies showed that there are two types of *amariogo* that are used by the local population. This include: *Amariogo yeemete* (herbs) – these are medicines made from plants and herbs and include the curative and preventive remedies offered by traditional healers. Another category of medicine is referred to as: *Amariogo ya nyagitari* or 'hospital medicine' which makes

reference to medicine used at formal health facilities. Hospital medicine as used in the two villages included all the pharmaceuticals and other medical technologies provided to patients by government and private hospitals, pharmacies and other retail outlets that sell biomedical pharmaceuticals.

4.4 Transaction of pharmaceuticals

The study revealed that just like most rural locations in Africa, there are several pharmaceuticals that are dispensed by various medicine sellers and used in Mosoch and Raganga villages to treat the various ailments that affect the local population (Figure 4.1). According to Van der Geest and Whyte (1988), Western pharmaceuticals (just like the case of the two study villages) are flooding the Third World. Injections, capsules and tablets are available in city markets and village shops, from 'traditional' practitioners and street vendors, as well as from more orthodox sources like hospitals. The study findings showed that pharmaceuticals are mainly sourced by the local people through: local health facilities, chemists and drug shops (for example, Figure 4.1).



Figure 4.1 Retail and drug shops in Mosochi Market

This study also, showed that biomedicine is the most popular choice of medical remedies by local populations despite the presence of other alternative therapies. These results are in agreement with an earlier study by Sindiga (1995) which revealed that the use of traditional medicine is present among rural communities of Africa and local people have immense knowledge on ethno-medicine but its use is rapidly diminishing partly due to lifestyle changes and exposure to Western ideologies. This is the case in Mosochi and Raganga villages where traditional remedies and other alternative therapies are increasingly losing their significance and appeal to a majority of the local population. These study findings suggest that an eminent paradigm shift from a plural healthcare system towards a singular dominant health system is in the offing in Kisii County. According to Kleinman (1978), health systems are articulated as cultural systems. Hence, a disappearance of certain health systems may also challenge underlying cultural norms, leading to further polarization of the health seeking behaviour

that may have negative consequences towards healthcare access. It is important, therefore, for health stakeholders at local and national level to put resources in research designs that are aimed at understanding the implications of this paradigm shift.

4.4.1 Medical pluralism and malaria treatment

The study findings indicated that the therapeutic field in both Mosocho and Raganga villages is characterized by a medical pluralism in which a number of therapeutic options are available to the local population for the alleviation and prevention of physical and emotional distress. Medical pluralism describes the treatment avenues available to a person suffering from illness or disease where they could choose from these potential treatment sources or, in fact, choose them all. The study findings indicated that this medical pluralist system elevates the significance of biomedical health system over all other forms of alternative therapies.

A number of therapeutic alternatives exist side by side in the two study villages. These therapeutic alternatives can be categorized into two broad groups, namely: one, biomedicine referred commonly as 'hospital medicine' (94.9%) and locally referred to as *amariogo a nyangitari* and, secondly, other complementary therapies (5.1%). Biomedicine, which is the dominant health system, is represented by local government health centres, private health facilities and local pharmaceutical outlets (drug shops, pharmacies, retail drug outlets etc). On the other hand, complimentary therapies in Mosocho and Raganga include those of traditional healers, traditional herbalists and faith healers.

This study finding corroborates another study done among the Abagusii by Gisesa (2004), who report that plants used by Abagusii traditional health practitioners

have compounds of curative value and therefore play an important role in the basic healthcare of these people.

4.4.2 Preferred malaria treatment options

The community informants commonly reported the following healthcare options as being available whenever local residents suspect that they are suffering from malaria or any other case of ill-health and needed healthcare services to help restore their health. The reported healthcare options include: hospitals (private clinics and government health facilities), drug shops, chemists (private drug outlets), faith healers and traditional healers (Table 4.2).

Table 4.2 Preferred malaria treatment options

| Healthcare option | N=195 | % |
|---------------------|-------|------|
| No preference | 1 | 0.5 |
| Hospitals | 185 | 94.9 |
| Traditional healers | 9 | 4.6 |

In Mosocho and Raganga villages the formal sector is represented by government and private health facilities, while the informal sale of Western pharmaceuticals is done through local drug shops, and general stores (*chiduka*) that sell these pharmaceuticals along with other merchandise, such as food stuffs, clothes, plastic wares and mobile air time vouchers. In fact, most of the pharmaceuticals that are commonly used in the two villages are easily accessible through local shopkeepers and drugs shops.

A further review of these findings indicated that despite the reported acknowledgement of the presence of alternative therapies in the two villages, most respondents (94.9%) prefer seeking medical help from formal health facilities (Table 4.1). This trust in biomedical healthcare providers is captured by a woman informant in Mosocho Village who, while responding to a question on the available healthcare options to sick people in the community, said:

*Here most people go to the local government dispensary since, it is cheap, and especially malaria drugs are free. People nowadays do not like traditional herbs or medicines as most of its practitioners are unreliable. You see, it is useless to go to a traditional doctors or herbalists and when you do not recover (as it is often the case) you start to run to the hospital. If you do that and the daktaris (health workers) in our government dispensaries know it, then they will refuse to treat you - that is why most people are avoiding herbalists. **IDI 1, Mosocho, female respondent aged 27 years.***

A 40-year-old woman informant from Raganga Village in an in-depth interview also explained why an increasing number of local people have begun to distrust traditional therapies. She explained thus:

*We do not depend on traditional medicines. Nowadays we only seek medical help from the hospitals, where we have trained health workers. Traditional healers may be good but most of them are liars, so you cannot take risks with your life. **IDI 4, Raganga, female informant, aged 40 years***

The distrust for traditional healers by the local community in providing holistic healthcare to the local people was attributed to the following reasons advanced by community informants and longitudinal malaria case studies. First, is that most traditional healers are ill-trained as healthcare providers and, second, that it is difficult to establish the medicinal value of the therapies and/or concoctions they administer. The third, reason is that traditional healer's work in environments that

do not uphold appropriate hygienic standards. Finally, most of these healers' activities in the country are not adequately regulated and therefore most of them operate without appropriate regulation and supervision.

4.4.4 Lay people's use of antimalarial drugs

The study findings indicated that several antimalarial drugs used in the two study sites are mostly SP drugs, which is contrary to the expectation that at the time of the study people would have embraced ACT drugs as recommended by the Kenyan health authorities. The most commonly mentioned SP drugs by the free listing respondents include *Fansidar*, *Malaratab*, *Metakelfin* and *Orodah*, all of which are SP drugs that use various brand names. In fact, most respondents in the survey, FGDs, IDIs and longitudinal malaria case studies reported that in the two study sites SP drugs are still the most commonly used antimalarial drugs as expressed below by the following two informants:

People in this village commonly use Fansidar and Malaratab to treat malaria. However, I am also told that we have newer antimalarial drugs that the government (serekari) has recommended, but I have not used them myself.”
IDI 1, Raganga, male informant aged 33 years.

We have several antimalarial drugs available in this area. But personally I know of Falcidin and Orodar. IDI 1, Mosocho, male informant aged 36 years.

The study findings from FGDs, IDIs and longitudinal household malaria case studies showed that despite the change of policy on malaria treatment drugs in the country, local people in the two study sites commonly sourced SP drugs from local retail outlets. For instance, when in-depth informants were asked to state the most commonly used

pharmaceutical in the community most of them reported using pain killers first to manage the pain associated with ill-health regardless of whether one had an intention to seek for 'appropriate' treatment or not. The study found that these pain killers are usually sold by local medicine sellers as branded by their respective manufacturing industries. Further, from the free listing data the following were the most mentioned pain killers: *Action, Asprin, Panadol, Mara moja, and Hedex.*

The popular use of antipyretics in the community was illustrated below by one drug shop owner (Chemist) in Mosochoch who said thus:

Here most popular drugs are painkillers like Panadol, Mara moja etc. However, I try to stock medicines that can treat common diseases in this community like malaria, pneumonia, typhoid and domestic related accidents.
Health Provider 1, Mosochoch, aged 50 years.

A further review of these data, revealed that despite the fact that most patients of febrile illness in the two sites reported using painkillers at the first instance of an illness episode before seeking healthcare from formal healthcare facilities, most community informants still believed that the 'right' medicines for any episode of illness must be prescribed by trained healthcare providers. So, the reported prevalent use of painkillers is seen by local people as a stop-gap strategy used as one prepares to seek 'appropriate' healthcare from formal healthcare facilities. A 36-year -old male informant from Raganga Village corroborated this finding when he said:

Here people prefer to get medication from trained physicians (daktari) at formal health facilities. However, due to pain that is associated with most ailments, people too, prefer first to buy pain killers so as to reduce pain as they prepare to go to hospital." IDI 3, Raganga, male informant, aged 36 years.

These findings are similar to those of Nyamongo (2011) who showed that antipyretics are commonly used in the treatment of febrile illness among the Abagusii. In addition, data from survey respondents also, showed that most of the respondents in the two study sites feel that SP drugs are convenient to use (Mosocho 75.3% and Raganga 72.4%). When the respondents were asked to tell whether they felt any side effects after using SP drugs most of the respondents reported experiencing side effects (70.1% and 77.6% respondents of Mosocho and Raganga, respectively). And when asked whether SP drugs are effective in the treatment of malaria in the area, the majority reported that they are effective in the treatment of malaria (Mosocho 70.1% and Raganga 68.4%). Although it looks contradictory to have most survey respondents reporting that they experienced some unpleasant side effects after taking SP drugs, while at the same time feel that SP drugs are not only convenient to use but are also effective to use. Data from qualitative sources indicated that the respondents believed that the side effects were tolerable.

With regard to their perception of the new antimalarial drugs, most respondents felt that they have some unpleasant side effects but that the drugs are effective in the treatment of uncomplicated malaria. However, data from FGDs, IDIs and longitudinal malaria case studies showed that lay people believe that these drugs are not convenient, first, because they are 'many' tablets per dose as compared to SP drugs. They complained that over 6-24 tablets recommended for treating malaria depending on the body weight of the patient are too many compared to the two or three tablets they were used to when taking SP drugs. Second, they also complained that most of them are yellow in colour. They tested the colour yellow because, they associate it with the

'yellowish substance' that they see as a clear sign and symptom (Siso, 2007). These ideas and notions about ACT drugs pose a challenge to the effective uptake of these remedies.

In this chapter, the study results indicated, just like other recent studies in the area (Nyamongo, 2004; Siso, 2007), that malaria still remains a major public health problem in the Gusii highlands. Further, the study results revealed that local people with the benefit of public health messages that the Ministry of Health and other health stakeholders have been mounting in the two villages, local people identify mosquitoes as the main cause of malaria and that malaria is commonly associated with mosquito bites and commonly referred to as the 'the malaria of *chiumbu* (*Ekegusii* word for mosquitoes)'.

The signs and symptoms of malaria were also commonly associated with the biomedically accepted descriptions of malaria condition as provided by health practitioners. Traces of these public health messages were evident in comments about malaria, such as '*Abanyagitari*' (Health workers) said that malaria is caused by mosquitoes". In Mosocho and Raganga villages medical 'knowledge' or presentation of malaria has become a part of popular representations of malaria. The connection with mosquitoes was found to be common. For example, symptoms of malaria that were commonly mentioned were fever, vomiting 'a yellowish substance', headache, and diarrhea, all of which are key signs and symptoms that have been medically identified and included in existing public health messages.

This chapter has examined the transaction of pharmaceuticals including the meaning of medicine in Mosocho and Raganga villages. The study findings indicated that local populations have a local term for medicine (*amariogo*) and that medicines are

broadly classified into two, 'hospital' and herbal medicine. The pluralistic therapeutic landscape in Mosochi and Raganga villages is dominated by biomedicine and as such Western pharmaceuticals are part and parcel of day to day treatment regimes of sick people in the community. It is argued that the therapeutic field in the two villages is currently undergoing a paradigm shift from a medical pluralistic society to a monolithic health care system.

To underscore this development, the chapter highlighted that the local community has appropriated its construction and interpretation of western medicine in much the same way as prescribed by biomedicine (which is associated with western medicine). A majority of the local population prefer 'hospital medicine' to 'herbal medicine'

The chapter also described the social contexts in which pharmaceuticals (antimalarial drugs included) are transacted in this rural setting in Kenya, the medical pluralist environment, the popularity of western medicine, community preferred healthcare options, lay people's presentation of malaria illness and their antimalarial use behaviour.

CHAPTER FIVE

APPROPRIATION OF ANTIMALARIAL REMEDIES IN THE COMMUNITY

5.1 Introduction

In this chapter I present and discuss the results indicating key findings related to the how local people interpret and attach meaning to antimalarial remedies in the two study villages. First I, describe the social realities in which antimalarial remedies are used in the two rural villages. Second, I explore the factors that influence local people's choices of antimalarial remedies. Third, I look at how households make decisions on the type of antimalarial drugs that are used by its sick members and lastly, how the local people source and use information on these antimalarial drugs. Because malaria is the most common public health concern in the two villages, the findings on the 'social life' of Western pharmaceuticals are presented here through the lens of lay people's antimalarial drug practice.

5.2 Lay people's presentation of malaria illness

The study showed that malaria is a common public health concern in the community, as 91.3% of the questionnaire survey respondents reported that they had been prescribed antimalarial drugs at one time or another. Although these findings indicated that malaria affected almost everybody in the two study villages, data from qualitative informants showed that pregnant women, children under the age of five and the elderly are perceived as the most at risk population groups from malaria. This was clearly

summarized below by a male informant in Mosocho Village who when asked to state the people who are most at risk from malaria infection, reported thus:

“In this area malaria affects almost everybody but those I see most affected are the children, pregnant mothers and the elderly.” **IDI 1, Mosocho, male informant aged 36 years.**

A female informant reported:

Question: *Who are most at risk from malaria episodes in this community?*

Informant: *Malaria in the whole of Kisii as far as I know affects everybody regardless of age.* **IDI 6, Mosocho, female informant aged 52 years.**

The results from FGDs, IDIs, and longitudinal household malaria case studies clearly confirmed that malaria is a prevalent public health problem in these villages. Indeed, most informants revealed that malaria is so common in the area that in most cases when local people get unwell and are not clear about the cause for their indisposition, they almost always refer it to ‘malaria’. This is aptly captured by a 30 year old woman at Raganga Village who reported that:

Malaria is the most common disease in this area. It is so common that nowadays people refer to any feeling of unwellness as malaria. It therefore becomes difficult for one (especially newly posted daktaris (Kiswahili term for trained medical doctors) to local health posts), to understand when a person is complaining of malaria signs and symptoms and other diseases like pneumonia (ekeuno), diarrhoea (ogosaa) and anemia that are also common ailments in this community.” **IDI 1, Raganga, female informant aged 30 years.**

Other FGD participants in the same village narrated the devastating impact of malaria illness on most households in the area. For example, when in a FGD session at Raganga, participants were asked to state the most common disease in the area. They responded thus:

- All:** (chorus) malaria
- Participant 7:** “Although we suffer from a number of ailments in this community and Abagusii land in general malaria remains the main cause of our problems. When it strikes most household members usually get infected and remember most households here are poor and in many cases cannot afford the treatment costs. It is a nightmare I tell you.
- Participant 4:** Epilepsy is also a problem in this area but as the others have said malaria attacks almost everybody here. If you are lucky not to contract malaria then one member of your family must surely be attacked in the course of the year.” **FGD1 at Raganga Village for adult male and female**

Findings from FGDs, IDIs and case narratives showed that local people have a local name for malaria – esosera, though not widely used by all people. A further analysis of these results revealed that despite the presence of a local term for malaria, most people in the two study villages refer to febrile illness using the term ‘malaria’ as used in the biomedical literature. A further look into these data indicated that the use of the local term for malaria is commonly preferred by a few older people in the community. This is clearly brought out by a discussion during one FGD session in Mosocho Village, where when asked to tell whether the local community had a local term that refers to malaria, they responded thus:

Participant 1: I do not think we have a local name for malaria as far as I know malaria is malaria.

Participant 7: We have a name. I heard it from my mother but I have forgotten it

Participant 6: It is called esosera

All: After consultations among themselves they agreed on the local name esosera

Participant 7: Yes, that is the name. But I must say that most people generally use the name malaria and the term esosera usually is used by few older people. **FGD 4, Mosocho, for youth participants.**

Most of the FGD participants and IDI informants reported that the term *esosera* was traditionally used among the Abagusii to refer to malaria but over time people are increasingly using the biomedical labelling of malaria in their every day conversations. This reported shift from 'native labelling' to conform to scientific labelling by the local people is a pointer to the success of public health campaigns on malaria prevention and control by government and non-governmental organizations that have been going on in the area. Besides, after independence more people in Kenya embraced formal education, hence closer interaction with Western concepts of disease labelling in formal schooling. This may have had a significant effect in this shift. The reported shift in using a local term for malaria is captured below by an adult woman FGD participant in Mosocho Village, who said:

Participant 2: *Originally the Abagusii people called malaria "esosera" but the name now is not widely used and I am sure not many people know it. Many people have now gone to school and can read and write. And since English is widely used in formal education, gradually local people have without their knowledge embraced English names." FGD 3, Mosocho, for women participants.*

It is argued here that the reported shift by the local people from using the local term (*esosera*) to the biomedical 'label' malaria can be attributed to the following factors: 1) common use of the term malaria by local medical providers working in local health facilities and given that most of the community members believe that biomedical health providers have the appropriate medical training, they at the same time trust what they say, and 2). the term malaria is used widely by popular media outlets such as radio especially when advertising antimalarial drugs.

The study findings from IDIs and longitudinal malaria case studies showed that most people in the two study villages reported knowledge of malaria signs and symptoms. The most commonly mentioned included headache, fever, joint pains, loss of appetite, coldness, vomiting, general body weakness and jaundice. Further, the study findings revealed that most local residents believe that vomiting a yellowish substance is a clear indication that the affected person is suffering from malaria. This belief, according to the local people is 'a clear' manifestation that one has contracted malaria. The belief was commonly reported and is clearly captured by a woman in Raganga Village who said thus:

I personally get ill with malaria. I usually start with a headache, fever and chills and vomiting. But when I vomit omochununu bwe engoko (yellow substance) then I am left in no doubt that I have contracted malaria." IDI 5, Raganga, female informant, aged 38 years.

The above finding corroborates another study carried by Siso (2003) in Rigoma Division in the neighbouring Nyamira County. Further, the study showed that all the 28 in-depth interview informants and 10 longitudinal malaria case studies from Mosocho and Raganga villages reported that malaria is caused by mosquito bites on a human body. This was clearly captured by a woman IDI informant in Mosocho Village, who when asked to tell the cause of malaria, explained that:

Mosquitoes are the only known cause of malaria in this area. That is why for instance, the government is currently urging people to use bed nets so that they can avoid being bitten by the mosquitoes. The government these days has gone beyond advising people to use bed nets and now provides the bed nets for free through public health facilities and local administrators. I mean the chief and local village elders." **IDI 6, Mosocho, female informant aged 52 years.**

Another IDI adult male informant from Mosocho responded to the same question thus:

“According to experts it is caused by mosquitoes but not because of being rained on as some people in the community think.” **IDI 3, Mosocho, male informant aged 50 years.**

This is a clear indication that despite the fact that local people are fairly knowledgeable about malaria causation and that the area has been a beneficiary of malaria sensitization and control programmes from government and non-governmental organizations in the last one decade, gaps in knowledge still exist.

5.3 Social realities in which antimalarial drugs are used in Mosocho and Raganga Villages

The study found that the lay people have neither a local name for the antimalarial medicines that are transacted in the villages nor do they attach any meanings other than that of the manufacturers, to the various pharmaceuticals that are daily dispensed in their communities. This is the case with antimalarial remedies that are currently being used in the two villages. Results from all the longitudinal malaria case study informants reported that they preferred to call these medicines by the brand names, in much the same way as provided by the manufacturers and/or prescribed by health workers. For example, when asked to name the most common medicines used in the community, all the answers provided by the study informants were their brand names such as Panadol, Fansidar, and Orodar, etc. These findings are captured below by a 25-year-old Chemist Owner from Mosocho Village, who when asked to tell whether they have local terms for the pharmaceuticals that are commonly used in the community, reported that:

We do not have local names for malaria tablets and even on medicines that we get from health facilities. Usually the names that are given by the manufacturer are the ones we use. Another thing you have to know, most people especially when they go the hospital, do not mind about the names since they believe that any medicine given by a trained doctor is the right one. The most important thing is to be cured. IDI 3, Mosocho, female informant aged 25 years.

It has been observed by medical anthropologists that items from one cultural context may be given a very different meaning when they are introduced into another one. Pharmaceuticals developed according to scientific paradigms are thus separated from biomedical contexts and integrated into culturally specific modes of understanding. There are always pre-existing concepts about treatment and medicine which form a basis for the cognitive appropriation of new drugs (Van der Geest et al., 1990).

For instance, Logan (1973) discussed how Guatemalan villagers categorize Western drugs as 'hot' or 'cold' in accordance with their own illness classification. This situation is different in the two study villages where local populations, despite having some locally existing frames of understanding of pharmaceuticals often preferred the biomedical explanation about their use, since they believed that it is they (biomedical practitioners) who as manufacturers understand the true content and medicinal value of these pharmaceuticals.

Unlike the Guatemalan case, the local population in this study, sustained public health campaigns by the government and other non-state health actors on the 'appropriate use' of drugs has enhanced the local people's appreciation of the biomedical explanation about the pharmaceuticals that are sold in the two villages. The study findings, therefore, showed that local people suffering from malaria and other illnesses have appropriated their construction and interpretation of malaria to realities of

public health messages that solely identify mosquitoes as the cause of malaria. This is manifested in the fact that currently, the local community has neither local term nor do they attach any local meanings and notions to the various pharmaceuticals that are daily transacted in the community. The study corroborates another study in the community by Siso (2003) which show that lay people's ethno-medical perceptions of malaria, largely tallies with those of biomedicine.

The importance of understanding social contexts in which pharmaceuticals (antimalarial drugs included) are used and how this information will inform future drug interventions in malaria affected communities continues to interest healthcare stakeholders (Waitsierah et al., 2010). This information is important in the design of future strategies for the introduction of new pharmaceuticals, in contexts such as those of Mosochoch and Raganga villages or even at the national level.

Similarly, participants were asked where they obtained their drugs, especially the antimalarials. Three main outlets were identified, namely: local formal health facilities (private and government); chemist (retail pharmacies); and drug shops (Table 5.1). This is captured by the following two informants:

*Many of us in this village get our medicines from local drug shops. But for malaria illness we, especially those of us from poor backgrounds, we get drugs from the nearby Raganga Health Centre (government health facility). Here antimalarial drugs are given for free. For those who can afford they go to private health clinics and Chemists. **Case study 5, Raganga, female aged 43 years.***

Another case study informant from Mosocho corroborated the above comments as expressed in the quote below:

*In most cases when our people (village residents) suffer from malaria they go to buy antimalarials from local drug shops or visit local government health facilities where the drugs are given for free or alternatively buy them from chemists and private health clinics. And indeed, that is the case with most of the medicines that we source whenever a member of our household gets sick. **Case study 1 Mosocho, male aged 48 years.***

Table 5.1: Main sources of antimalarial drugs

| Source of drugs | N=195 | % |
|---------------------|-------|------|
| No response | 1 | 0.5 |
| Traditional healers | 4 | 2.1 |
| Drug shops | 29 | 14.9 |
| Chemist | 50 | 25.6 |
| Hospitals | 111 | 56.9 |

This study found out that the new malaria drugs (AL) are mainly dispensed for free at government health facilities as first-line antimalarial drugs. This attests that government facilities were the main source of AL, meaning that they had complied with the change in policy. There are considerable variations in the type of medicine sellers described in different settings and the laws that regulate them, with each country having its own procedures and categories of licenses across SSA (Goodman et al., 2007a). But throughout this thesis any seller who commercially retail medicines to communities with or without a prescription is referred to as a medicine sellers (MS).

These medicine sellers operate from specialist drug shops, *dukas* or kiosks, general retail outlets, kiosks and market stalls, or as itinerant hawkers. In some of these situations, they may also sale a variety of other household goods (Goodman et al.,

2004). The findings in the present study indicated that both formal and informal sale of Western pharmaceuticals is common in the two study rural villages. This corroborates an early study by Van der Guest (1990) who noted that in many developing countries where the medical infrastructure is weak, most medicines are easily diverted from formal distribution channels controlled by professionals to the free market.

However, data from community informants and health providers revealed that whereas private health practitioners, local retail pharmacies and drugs shops in the two villages were dispensing the new malaria remedies, they were also administering/selling the previous generation of antimalarial drugs (SP) despite the new regulatory climate. This was attributed to a continued demand of SP drugs by the local people, as expressed by a 40-year-old chemist owner in Raganga Village, who said:

Question: *Which antimalarial drugs do they usually stock in your retail shop?*

Informant: *First, I must say I have a variety of anti-malaria drugs as you can see (directing the researcher to look at the shelves). They include: Fansidar, Orodar (SP) and AL drugs and quinine, which is the strongest remedy for malaria. AL drugs are the new generation drugs for malaria that I have but at times people insist on Fansidar or quinine. So I must give them, you know I am in business and the client's needs really matter to me.*

Question: *From your experience can you compare for me the consumption of SP drugs and AL drugs as first-line drugs of choice in this community?*

Informant: *To be honest most of us who are in private sector rarely turn down our clients despite our knowledge of the rules. I think people find SP drugs cheaper than AL in this community and they (local people) ask us to sell them SP drugs – which we do, despite our knowledge of change of guidelines. **Chemist owner 3, Raganga, aged 40 years.***

According to Bate et al., (2008), in countries situated in the world's most intense region of holo-endemic and hyper-endemic *P. falciparum* malaria, where the difference between a proper and a bogus medicine cannot be surpassed, various substandard therapies and clinically inappropriate mono-therapies remain widely available, with between a quarter and over half of products sold in urban and peri-urban pharmacies failing basic quality testing. The study findings in the two villages indicated that despite the acknowledged effectiveness of ACT drugs in the treatment of not so severe malaria in the study areas, SP drugs are still being sold and used in these villages as first-line drugs of choice several years after the government changed antimalarial policy guidelines. This is obviously a major challenge in the implementation of current and future malaria policy changes.

5.4 Factors influencing the choice of antimalarial drugs

When the informants were asked to state what influenced their use of antimalarial medicines in the community, they reported various factors that included the cost of the medicine, perceived severity of malaria, perceived efficacy of the medicine, patient's social network, and their relationship with healthcare providers who prescribe the medicine. A male informant from Mosochi village summarized below, some of the commonly reported factors by other informants, when he was asked to tell the factors that influence the choice of antimalarial drugs in the community. When he said:

*The cost of the medicine, friends and a person's previous experience with the antimalarial drug and the doctor's advice after being tested and found to have malaria then he/she will tell what type of drug to administer to you. For example, those who are suffering from severe forms of malaria usually are injected with quinine. This is the strongest type of malaria medicine that is available. **IDI 3, Mosochi, male informant aged 50 years.***

These factors are summarized below:

a) Cost: The cost of antimalarial drugs was an important determinant of the choice of antimalarial drugs that local malaria patients finally used for their treatment. The study revealed that the cost of antimalarials is undermining the implementation of the new treatment guidelines that require AL drugs to be the first-line treatment for a case of not so severe malaria. The study findings indicated that because SP drugs are cheaper than AL drugs, most local people prefer to buy them than the new remedies. This is expressed below by a 50-years-old medicine seller in a local chemist shop who explained thus:

Question: *Which antimalarials do you commonly stock and sell in this community?*

Informant: *Well, I have SP and AL but in this community when a person is suffering from one other ailment, the person comes asking for malaria drugs. You see people first come here to buy pain killers that are relatively cheap before asking for “real malaria drugs”.*

Question: *What are the reasons for this behaviour?*

Informant: *First I suspect and from any experiences dealing with them that most times economic considerations outweigh perceived health benefits. That is why you find one insisting on pain killers to first monitor the disease progress before setting for antimalarial drugs. It is like for today one insists on Panadol, tomorrow the same person who is by then down with malaria accepts to buy the real antimalarial drugs. **Chemist owner 1, Mosochi aged 50 years.***

For effective introduction of new antimalarial drugs the health authorities and policy planners should put into consideration the cost implications for the implementation, as this determines the patients' readiness to buy the drugs. This has direct implications on patient's access to new drugs.

b) Patient's perception of disease severity: The perception of disease severity played a critical role in local patient's choice of malaria remedy. When the disease is perceived to be less severe, community informants said they preferred to first buy antimalarial drugs over-the-counter (OTC) from local drug sellers. But if the disease was thought to be severe most of them preferred to seek for medication in formal health facilities, where they believed they would get adequate treatment that included being prescribed the 'right medicine'. This study results are in agreement with other studies in Kenya and Zambia that have noted that most patients start with self-treatment at home with herbal medicines or medicines purchased at local shops (Ruebush et al., 2000, Nyamongo, 2001).

To illustrate how perception of disease severity impacted on people's antimalarial drug choices an 18-year-old young man from Mosochi Village emphasized the importance of perceived disease severity and the power of advertisement in determining the choice of antimalarial use by patients in the community. He reported thus:

*There are so many factors but the most important to me is the severity of the disease – if it is very severe for instance, there is no time to waste buying pills from drug shops but take the patient straight to the hospital. Also the way certain medicines are advertised through radio has great influence on the popularity of a particular drug. **IDI 4, Mosochi, male informant aged 18 years.***

This behaviour is a public health concern given that most of decisions made by lay people are done presumptively without laboratory confirmation of the presence of malaria. This gives an impression that local people are not aware of or do not care about the asymptomatic nature of malaria manifestation.

c) Patients previous experience with antimalarial drug: The study informants commonly reported that they considered their previous experience when faced with decisions on what antimalarial drug to buy. Typically, the community qualitative informants noted that in case a person did not heal quickly from malaria while using a particular drug, that person would most likely resort to another drug, and vice versa. These decisions were made not based on whether the drug is SP or ACT but purely on the basis of one's previous user experience. A 30-year-old male informant from Raganga Village clearly brings out the role of personal previous experience with the type of antimalarial medicine to use.

My own experience with the use of antimalarial drugs, whenever I suffer from an episode of malaria has taught me that I must use the antimalarial drug that made me recover faster during my previous encounter with malaria sickness.
IDI1, Raganga, female informant aged 30 years.

The study results from FGDs, for example, showed that previous personal experience with a certain type of antimalarial drug did inform local people's antimalarial drug choices. This is also demonstrated by a 45-year-old case story informant from Raganga Village who reported:

Question: *From our early talk u said that despite the fact that the new malaria drugs being provided for free at government health facilities you still prefer taking Fansidar or Metakelfin whenever you suffer from malaria, what is the reason?*

Informant: *I prefer Fansidar because it has fewer tablets (3) and it is friendly with my body. When I take those many AL tablets they make me feel sick when swallowing them. They have a funny after test. I do not like the test.* **Case study 4, Raganga, female aged 45 years.**

The preference of Fansidar compared to the new ACT drugs in the above case is obviously not informed by the latest scientific finding that suggest increased

plasmodium resistance to SP drugs but rather on an individual's previous experiences with the drug.

f) Antimalarial drugs publicity: How widely a certain antimalarial drug is known in the community also determined how widely used it is. Participants from focus group discussions and in-depth interviews reported that those drugs that had received prominent coverage through the mass media and public health education campaigns were being sought in large numbers compared to those that had not. This reason was also attributed to the reported continued popularity of SP drugs compared to the newly recommended first-line antimalarial drugs remedies. This was clearly brought out in an IDI interview with a female informant at Mosoch Village who said:

Question: *You said that most people in this community like antimalarial drugs like Fansidar, Maratab and Orodar, what do you think is the reason for their popularity?*

Informant: *I think most people know these drugs. We hear them being advertised through radio and TV stations. They are advertised in both Kiswahili and the local language. This has made them to be well known by local people. But those drugs dispensed at government hospitals and even at private hospitals cannot be known, those 'daktaris' (Kiswahili word for physicians) normally prescribe for you medicine without telling you their names. **Case study 2, Mosoch, female aged 34 years.***

These study findings showed that publicity of antimalarials is critical in determining uptake of the drugs. This is even more critical especially when you are introducing new antimalarial remedies such as ACT drugs. Unfortunately at the time of the study local people had not been fully informed on the causes and significance of the policy changes.

5.5 Decision-making on antimalarial drug use at the household level

The study also investigated decision-making with regard to antimalarial drugs use at the household level. From the 11 longitudinal household malaria case narratives and community interviews the study found that the family (usually consisting of husband, wife and children) plays a significant role in making decisions on the type of antimalarial drug and indeed on the type of medicines to be used by a sick family member. At the household level, the study revealed that most decisions on the choice of antimalarial drug to be used by a sick member of the family were mostly taken by parents – especially mothers who were reported as ‘natural’ healthcare givers in most families. This was captured by an 18-year-old informant from Mosocho Village who commented that:

*Most decisions in households on matters related to the health of the family are done by the parents. However, these decisions are made by mothers, who are the people who are on a daily basis very close to their children. In most homes they are the people who bathe them, they feed them, they sleep with them...In fact, women are also care givers to their husbands. **IDI 4, Mosocho, male informant aged 18 years.***

An important observation in this study is that whereas the study informants do recognize the fact that husbands are traditionally responsible for all familial decisions in Mosocho and Raganga, they report that decisions on which antimalarial to buy/not buy are done by mothers. For instance, a 38-year-old female in-depth interview informant from Mosocho, reported that:

*The decisions are usually made by husbands since they are the family heads and therefore responsible for family upkeep and protection. That is not to say that women do not play and role; on the contrary, it is mothers who are charged with the responsibility of taking care of the sick in the family, including their husbands. **IDI 5, Raganga, female informant aged 38 years.***

The power of patriarchy that accords privilege to men in the study community was commonly reported by FGD, IDI and longitudinal household malaria case study informants. However, decisions on what drug to buy or not buy was a woman's responsibility.

5.6 Main sources of information on antimalarial drugs

Data from IDIs and longitudinal malaria case studies revealed that most local people in the study sites get information about antimalarial drugs using various sources, namely: health workers (this includes those working at local private and public healthcare facilities and those who have retired and now residing at home); mass media (radio and television); and a patient's social network (friends and relatives). Data from survey respondents indicated that slightly more than a half (52.8%) of them relied on the radio as the main source of information on antimalarial drugs (Table 5.2).

Table 5.2: Main sources of information on antimalarial drugs

| Source of information | N=195 | % |
|------------------------|-------|------|
| No response | 18 | 9.2 |
| Health workers | 33 | 16.9 |
| TV | 5 | 2.6 |
| Radio | 103 | 52.8 |
| Newspaper | 7 | 3.6 |
| Family/friend | 6 | 3.1 |
| Pharmacy/Chemist | 5 | 2.6 |
| Others (drug shop etc) | 18 | 9.2 |

- a) **Health providers:** Local retired health workers and health providers who are currently working in both government and private health facilities in the community were regarded

as crucial in the provision of vital and trusted medical information for not only antimalarials but also other medicines. This group was commonly described by the study informants as educated and had the necessary medical training and therefore worthy consulting on matters related to health. This was clearly brought out by a female informant from Mosochi who answered that:

Question: *What other sources of information do you rely on to get information about antimalarial drugs?*

Informant: *Oh, I was about to forget a very important source of information. These groups include local healthcare providers in both government and private health facilities. It also includes healthcare retirees from the community. These are the people who daily treat the sick. We believe that they are the most reliable on matters related to health. Our only problem with them is that they rarely tell you what type of antimalarial drug they have prescribed. **IDI 5, Mosochi, female informant aged 30 years.***

Information from healthcare practitioners was seen as the most reliable source for medical information, although most informants noted that the cost of accessing this service could at times be prohibitive to mostly poor peasants in the two study areas. The use of radio is therefore important to any future public health malaria control intervention strategy that can be mounted in the area.

b) **Mass media:** Radio, TV and newspapers were reported to be the three most important sources of information on antimalarial drugs for the local population. The local vernacular station was particularly singled out as an important source of information for most local residents. The importance of the radio as an important avenue of accessing information on antimalarial drugs and other pharmaceuticals was clearly brought out during one of the FGD sessions held at Raganga Village.

Question: *Where do you get information on antimalarial drugs in this community?*

Participant 1: *From friends and relatives who have used the drugs before.*

Participant 2: *We also get information about these drugs from radio and TV. However, the radio is the most common and popular source of information, especially the vernacular Egesa FM station. The advertisements have made drugs like Fansidar popular and even with the introduction of new drugs; most people still go and ask for Fansidar from local medicine sellers. **FGD1, Raganga, adult male and female participants.***

Analysis of the survey data indicated that 87.2% of the respondents owned a radio. Besides, using the radio as means of disseminating information about antimalarial medicines was reported to be cheaper and has a wider coverage compared to other media avenues, as most households in the study sites owned a radio (87.2%). The type of language used to present this message was seen by many informants as limiting especially if the advertisements are not done in the local *Ekegusii* language.

Despite the approval of radio as the best means to reach local people, most qualitative data narratives showed that local people were knowledgeable on some of the shortcomings of using radio to disseminate knowledge on antimalarials. For instance, they argued that since most radio owners are commercial oriented, there is a possibility that pharmaceutical companies and private health providers could 'sweeten' the messages so as to make more money. They expressed fears that this might result in the general public getting unreliable information. Given that a study by Nyamongo, (2011) indicated that antimalarial drugs are widely used in Gusiiland and that these antimalarial drugs and antipyretics such as Panadol are bought from shops and without prescription. Therefore, there is need for the Ministry of Health to, monitor some of the messages about the drugs that are passed to the public through these radio outlets.

c) **Friends and relatives:** Daily interactions among family members, friends and relatives provided another important avenue through which local people shared their knowledge about antimalarial drugs. Qualitative data showed that local people converse about antimalarial drugs and other pharmaceuticals in their households, community meetings, and market places as they go about doing their daily engagements. Information about antimalarial drugs, the study revealed, is shared by the community in much the same way other issues are shared through normal social interactions. This is clearly captured a 43-year-old longitudinal malaria case informant with four children from Raganga who explained that:

*In some cases we get to know about antimalarial drugs in this community not through official sources like from the local chief, but through our friends and family members. You see, whenever people interact they talk many things, more so things that concern them and malaria concerns every adult who has a child here. That is why as parents when we meet we must talk about malaria medication. So though such talk we get to know one or two things about these drugs. This enables us to make decision on the best to buy or one we can easily and with little cost access. **CS5, 43 year old lady***

Narrative data also showed that information about antimalarial drugs or medicines typically, is shared naturally in ordinary village conversations without sometimes conscious desire to do so.

d) **Medicine sellers:** The study findings showed that local medicine sellers were also important sources of antimalarial drug information to the two village residents. The medicine sellers in this study include local pharmacies (chemists) and retail drug shop sellers. The drug shop sellers in the two villages have small general stores that mainly sell food stuffs and other household items, but also stock drugs for common ailments in the community like cold and malaria.

The study findings from FGDs, IDIs and longitudinal household malaria case studies indicated that some informants sought information on antimalarial drugs from local medicine sellers. Just like with the radio, most study informants reported that they do not trust fully (local medicine sellers) the information they get from the local medicine sellers. Most of the medicine sellers were likely to tailor the information in order to win the confidence of local consumers of these drugs and as such get some money by selling the drugs. In this case the medicine sellers treat medicines as any other commodity for sale. This situation is captured below by a 50-years-old medicine seller.

Question: *You have sold medicines in this community in the last three years; please tell me where you think the local people get information about antimalarial drugs.*

Informant: *I can say most of them come to us.*

Question: *What do you mean by us?*

Informant: *They usually do inquiries about old and new antimalarial drugs from those of us who sell them medicines. Many times you get a person coming to ask me the 'right' antimalarial drug for a child with fever or a sick husband, and so on. We try to help them to know what antimalarial drugs are in the market.*
Drug shop owner 5, Mosocho Village.

The study findings further showed that there were a variety of avenues through which local people would access information on available antimalarial drugs or any other pharmaceuticals, which they may be called upon to make a decision on whenever faced with an illness episode. These sources are broadly classified here as local health providers, the mass media, friends and relatives, and local medicine sellers.

This chapter specifically, examined the environment in which antimalarial drugs are used. As noted in the previous chapter, Raganga and Mosocho villages are under a medical pluralist health care system. However, the study findings

suggest that public health education campaigns by government agencies and non-governmental organizations and an increasingly literate population in this community are causing changes on the health care landscape in the two villages. For instance, the study findings showed that the communities are readily embracing the biomedical description of antimalarial drug use by the biomedical sector. The study findings showed that the area is essentially on the threshold of a paradigm shift from medical pluralism to a mono-therapy healthcare system. It however, it is recommended here that more studies need to be done in future in order to fully understand the extent of this shift and its implications on health care delivery in the area.

The chapter also described the three major outlets of antimalarial drugs and the factors that influence the choice of antimalarial drugs to use whenever local people suspect that they are suffering from an episode of malaria. The study showed that there are three major antimalarial sources in the two villages, namely, local health facilities (private and government), Chemists or pharmacies, and local retail drug shops. The costs of drugs, perception of disease severity, previous user experience of the drugs, and the publicity of a particular antimalarial drugs were among the factors that influenced lay people's choice of antimalarial drugs.

Household decision-making with regard to the use of antimalarial drugs is also discussed in this chapter. The study findings showed that though men were responsible of making most of the household decisions, women too, did make decisions on a number of family activities and issue. Making family health seeking decisions and for that matter decisions on which antimalarial drug to buy was done

by men as well as women. Women as the primary health care givers in most African societies were responsible for making decisions on what antimalarial drug to buy, especially, when children under their care are affected. Health workers, the mass media (such as radio and TV), friends and relatives, and local retail medicine sellers, are presented in this section as key sources of information about antimalarials and their use. The next chapter answers the question on what happens when health authorities change antimalarial treatment policy - as was the case in Kenya in 2006.

CHAPTER SIX

LAY AND HEALTH WORKERS' PERCEPTIONS AND PRACTICES RELATED TO THE NATIONAL POLICY SHIFT ON FIRSTLINE ANTIMALARIAL DRUGS

6.1 Introduction

In this chapter I present and discuss the results on lay people's and health workers' perceptions and practices relating to the change of government guidelines on the use of antimalarials. Health workers in this thesis refer to all formal biomedical care providers and sellers of modern medicine, while lay people are non-health professionals involved in the management of their health problems or of the health problems of people they know. First, I deal with the lay people's perceptions and practices in section 6.2, followed by health workers' perceptions and practices in section 6.3. Following the government of Kenya's decision to implement a change in the first-line treatment policy for uncomplicated malaria from SP to ACT in 2006 (Amin et al., 2007), there is need for information on drug use pattern following this change on treatment guidelines. There is also need to understand provider practices, factors influencing health providers' behaviour and their perceptions regarding new treatment guidelines so as to help design appropriate intervention measures.

6.2 Lay people

This study was designed to explain what people in Mosochi and Raganga villages do whenever confronted with malaria illness and the factors that determine the health-seeking choices they make. Through longitudinal household malaria case narratives, FGDs and IDIs this study sought information on every day practice of lay health-seeking

behavior by malaria patients, their actual and everyday antimalarial user choices. The study results showed that a patient's social networks and relations, previous experience with malaria and perception of trust were critical considerations in the therapeutic recourse made by malaria patients in these localities.

6.2.1 Lay knowledge of new antimalarial drugs

The study findings indicated that most of the survey respondents had received antimalarial prescription (Mosocho 99% and Raganga 94.9%). When the respondents were asked which drug were prescribed for them, more respondents in Raganga (42.9%) than Mosocho (32%) reported that they had been prescribed ACT drugs, and vice versa for SP drugs. The findings also indicated that 20.6% of Mosocho respondents did not know or did not ask which antimalarial drug was prescribed for them compared to 16.3% of Raganga respondents (Table 6.1).

Table 6.1: Type of antimalarial prescribed

| Type | Mosocho | Raganga |
|--------------|----------------|----------------|
| Do not know | 20.6 | 16.3 |
| SP | 40.2 | 38.8 |
| ACT | 32.0 | 42.9 |
| Others | 7.2 | 2.0 |
| Total | 100% | 100% |

Most IDI and FGD informants in the two study sites revealed that a majority of them did not know the brand name(s) of the new antimalarial drugs but they had knowledge about the introduction of the new antimalarial drugs by the government. This is demonstrated by the fact that 68.1% of Mosocho respondents and 50% of Raganga

respondents reported that they knew about the new antimalarial drugs in government health facilities.

The study findings indicated that most of the respondents in the two study sites felt that the new antimalarial drugs (ACTs) were convenient to use compared to other antimalarials in the community (Mosocho 68.1% and Raganga 76.5 %). When the respondents were further, asked to tell whether there were any side effects associated with the use of ACT drugs and whether these side effects can be described as acceptable, most of the respondents were in agreement that the use of ACT drugs has side effects but these side effects were acceptable to local users.

The reported knowledge about the introduction of the new antimalarial drugs did not, however, translate into local patients knowing the brand names of these drugs in the study villages. For instance, 91.8 % of Raganga Village respondents and 81.4% of those from Mosocho Village reported that they did not know the brand name(s) of the new antimalarial drugs that the government had introduced as first-line treatment drugs for malaria treatment. This is well expressed by a 36-year-old man in Mosocho Village who said:

Question: *Name the two main drugs recommended for the treatment of non-severe malaria in this community?*

Informant: *I do not know the name of the drugs, but I know that these days they (formal health providers) give very many tablets than they used to. You see previously we used to buy or be given at health facilities 2 to 3 tablets as a dose for full malaria treatment. This change has made many people in this community not complete the dose as the drugs are too many.
IDI 1, Mosocho male informant aged 36 years.*

The reported lack of knowledge on the names of the new antimalarial drugs reinforces the fact that the implementation of the new guidelines was done without appropriate sensitization of the local communities.

6.2.2 Lay perceptions and beliefs about new antimalarial drugs

The study found that the local people have a number of ideas and notions that they attribute to these new pills when they are compared with SP drugs, namely:

- (a) the treatment dosage for non-complicated malaria has 'many' tablets;
- (b) they are bitter compared to most SP drugs;
- (c) they are yellow in colour, a colour which some local people associate with the yellowish vomit by malaria patients.

These commonly reported notions and ideas about the new antimalarial drugs are aptly captured by the following IDI informants:

*The newly introduced antimalarial drugs though bitter, have been reported to be more effective than say Fansidar (one of the popular SP drug in the area). A kid like this one (pointing to her young girl) who is about three years got sick recently and we thought she will die but when she was given the new antimalarial drug, the kid recovered quickly and fully. She has not been sick from malaria in the last four months. **IDI 4, Raganga, female informant aged 40 years.***

In Mosocho Village a 52- year-old woman reported:

*In the new dose we are given many tablets (by health workers), that in most cases leads many patients from this community not to complete their doses. Compared to the old pills, like Fansidar, for example, the patient was given only three tablets as a complete dose for an episode of not so severe malaria. And in a sense this is good because, as you know people rarely like taking drugs, so the fewer the better. **IDI 6, Mosocho, female informant aged 52 years.***

The lay people's perceived notions and ideas about the new antimalarial drugs obviously have implications for local acceptability of these drugs and pose a public health challenge. So, if the policy changes have to achieve their desired goal in dealing health authorities and stakeholders need to design a sensitization campaign so as to pass appropriate messages to the local people on these diseases.

6.2.3 Lay explanations of the reasons for the policy change

The study findings revealed that most local populations are not fully aware of the reasons for the change of first-line antimalarial treatment drugs. For instance, 67.4% of Raganga respondents indicated that they did not understand the reason for the change compared to 54.6% of Mosochi respondents. In addition, when FGDs, IDIs and longitudinal malaria case study informants were asked to tell whether they knew the reasons for the change, most of them reported that though they did not know the reasons for the change, they however, reported that they believed that the new antimalarial drugs are 'stronger' and therefore more effective than the old ones (SP). Some of the common comments they made to illustrate their lack of knowledge about the biomedical reasons for the change, included the following explanation from a case study informant in Mosochi Village:

*The government may have conducted research and found out that the new Coartem, drug and related drugs are most effective in the treatment of malaria. Many people in the community who have taken the new antimalarial drugs report that it takes a bit longer to suffer from another episode of malaria' if he/she used the new drugs. When we used to take the old antimalarials, one would use one to two doses to fully recover. So they are more effective. **CS5, 45 years, Longitudinal household malaria case study informant.***

6.2.4 Lay suggestions on future policy changes

The study informants suggested a number of steps that should be taken by the Ministry of Health in case any time in future they might want to change the first-line antimalarial drugs in the country. This includes the following:

a) Cost: Local people suggested that in case the government in future wants to change its policy guidelines on the use of antimalarials in the country, then the issue of cost must be taken into consideration. For example, the study revealed that due to the high costs of the newly recommended (ACT drugs) antimalarial drugs compared with the previous regime of SP drugs; patients in the two villages still prefer buying SP drugs at local retail outlets. Obviously, this has affected the uptake of the new drugs outside the public health facilities (that currently provide the new drugs for free) despite acknowledged medical benefits of the new drugs by the local populations. The proposal to lower the cost of the new antimalarial drugs was widely reported in the two study villages. This is illustrated in the expression below:

*The government should consider reducing the cost of the new drugs so that most people can access these tablets. Currently, the new drugs are very expensive and if one is unlucky not to find them at local public health facilities where they are provided for free by the government, it becomes difficult for most people here to buy them at local retail outlets and pharmacies. **IDI 3, Mosocho, male informant aged 50 years.***

The importance of cost of a particular antimalarial drug as a critical consideration during health-seeking by local people as a result of an episode of malaria is clearly explained by a local drug vendor in Raganga Village who reported that:

First, I suspect and from any experiences dealing with them, that most times economics considerations out-weight perceived health benefits of the drug.

*That is why you find one insisting on wanting to buy pain killers so that one can first monitor the disease progress before finally making a decision to buy antimalarial drugs. That is why you find that today, one insists on buying Panadol, and tomorrow when down with malaria the same person then accepts to take antimalarials. **Chemist owner 3, Raganga, aged 40 years.***

Thus, in order for treatment intervention to improve access and uptake, it appears necessary to consider issues of cost before the introduction of medicines, especially when these remedies are new to local populations.

b) **Sensitize local medical staff** on the new antimalarial guidelines: Data from most qualitative sources indicated that there is need to sensitize local health workers about the new policy guidelines since health providers are at the tail end of drug prescription and therefore require to be sensitized about the reasons for these changes. This is important because among the study communities, for instance, most people did trust the advice by health workers on the use of medicines as captured here below by a 38-years-old female informant, who said thus:

*It is the daktaris (health providers) who should be used to explain to us about the changes and at the same time ensure we are given the right drugs as required by the government. **IDI 5, Raganga, female informant aged 38 years.***

The need to train and prepare health workers well before the introduction of new medical interventions is apparent in this study, since they carry a lot of authority on matters related to medical issues and as such are trusted by lay people in many settings like the cases in Raganga and Mosochi villages.

c). **Community sensitization before introduction of new medicines.** The study informants reported that they are a need to sensitize the community on new medical interventions before introducing them into the community. This would help avoid situations where local people feel that there is no need for change. The common

comments by community informants to support this proposal are expressed in the following comment:

*The government was not fair; they introduced the new antimalarial drugs without informing the public. Most of us got to know about the new drugs when we went to the local health facility. In fact, I thought I was going to be given Fansidar only to be given 24 tablets. On inquiry I was told by madam (nurse) that they are new drugs. I found it hard to believe that they can help me recover. **IDI 3, Mosocho, female informant aged 25 years.***

And another said:

*Next time the government introduces a new drug it must put aside some money to inform the consumers of the drug before rolling it out into the market. For example, I do not see any adequate reason for the change; the bottom line is that both drugs (new and old) are effective. Maybe somebody somewhere in authority wants to make money... (Laughs)...it is business. **IDI 3, Raganga, male informant aged 33 years.***

This finding points to a need for health policy makers to ensure that community mobilizations strategies are put in place before introduction any new medical technologies.

6.3 Health workers

In this section I present and discuss key findings related to local health workers perceptions and practices regarding the change of government guidelines on the use of antimalarial drugs from SP to ACT drugs in the two study villages. Health workers in this thesis refer to all formal biomedical care providers and sellers of modern medicine.

6.3.1 Health workers' knowledge of antimalarial policy changes

The study findings from qualitative narratives showed that all health workers and medicine sellers in the two study sites knew of the change from SP drugs to ACT drugs

as new first-line malaria treatment drugs. They were also aware of the fact that this step by the government was prompted by plasmodium resistance to existing treatment SP drugs, hence the need to replace them with more efficacious ACT drugs. All of them reported that the level of parasite resistance to SP drugs had risen to levels where the drugs were becoming ineffective in dealing with malaria infections in the country.

*Looking at the level of malaria parasite resistance to SP drugs at that time, which were the recommended first-line malaria treatment drugs, the government had no option but to replace SP drugs with AL drugs. **Health provider 1, Raganga.***

Another medicine seller at Raganga Village reported growing SP drug ineffectiveness in the treatment of malaria in the study communities as the main reason that forced the government to change malaria treatment guidelines from SP to ACT drugs. The study found that because of the reported resistance, local healthcare providers, especially private practitioners resorted to using multiple therapies as they believed that was the best way to ensure effective treatment. This is aptly described by a chemist owner from Raganga:

*The reason provided by the Ministry of Health is that SP drugs had started showing signs of ineffectiveness in treating malaria and therefore they had to replace them with more effective drugs. But I wish the government knew that - the malaria which attacks people in Abagusii land is a different type. Its treatment may call for treatment outside the guidelines, I mean in some cases you have to combine several drugs to effectively deal with an episode. This is what we have been doing and I doubt the situation will be any different with the new drugs. **Chemist Owner 3, Raganga, aged 40 years.***

6.3.2 Health workers' perceptions and practices on the new policy guidelines

Despite of the reported awareness by local health providers and medicine sellers of the government's policy change in malaria treatment guidelines, the study data from FGDs,

IDIs and longitudinal malaria case studies showed that this knowledge did not translate into practice. This was especially the case with private health clinics and medicine sellers who reportedly continuity in prescribing or selling antimalarial drugs outside the government's stated policy guidelines. The study findings revealed several reported cases where local medicine sellers still continued to administer SP drugs as first-line antimalarial drugs to patients who sought medical help from them. Others continued selling SP drugs as first-line malaria treatment drugs contrary to the new Ministry of Health guidelines. A 40-year-old medicine seller at Raganga market summarized this violation of the new antimalarial treatment guidelines, as quoted below:

Question: *Do you know of the current change of antimalarial policy in Kenya?*

Informant: *Yes I do, but sometimes these changes do not affect our way of doing business, you see I sell what is preferred by the local people, they are my clients. Like currently, I do not have any stock of AL drugs. I do not stock them because, first, they are too expensive for most people in this community. You should know that people in this area are mainly poor peasant farmers and would rather get these drugs (AL) for free from government health facilities than buy them elsewhere. Second, some people argue that the new drugs are too many for their comfort. Third, others still do not understand why the change, since they feel that the old antimalarial drugs are also effective in the treatment of malaria*

Question: *So you are saying that despite the government's policy change you still sell SP drugs.*

Informant: *Yes, if I have to continue to do business I must be sensitive to the needs of my clients. **Chemist Owner 3, Raganga, aged 40 years.***

The continued use of SP as first-line treatment drugs was not confined to the private health actors. Local health workers working in government health facilities also reported that they were still prescribing SP drugs alongside AL drugs as first-line

antimalarial drugs. This practice was explained by a government health worker at Raganga Village, who responded thus:

- Question:** *Tell me two drugs recommended for malaria patients?*
Informant: *SP drugs are recommended for pregnant mothers so as to prevent malarial infection to the foetus. We have the new AL drugs, but we still use SP drugs like Fansidar and Metakelfin in the treatment of not so severe malaria in the area.*
- Question:** *Why is this case since the Ministry guidelines do not allow that?*
Informant: *Sometimes, we run out of stock of AL drugs especially when we have increased cases of malaria in the area. Surely you cannot send away a patient to go and buy AL drugs, when you know that the patient cannot afford the cost and yet you have some SP drugs in our pharmacy. We know these people; some of them are very poor. **Health provider 1, Raganga.***

When local health workers were asked to state their reasons for going against a government stated policy that they were obliged to implement, they attributed their actions to two reasons:

(1) Inadequate supply of these drugs by government: It was reported that although AL drugs are provided for free in government health facilities in the community, these facilities' drug stocks are depleted especially at times of increased infections. This forces the health providers to prescribe SP drugs that are relatively cheaper at local drug shops compared to the expensive AL drugs. Data from qualitative sources corroborates the fact that cost is an important consideration by the mostly poor peasant farmers whenever they make decisions on the type to buy for malaria treatment.

(2) Some health providers felt that SP drugs are still very effective in the treatment of malaria in the area.

(3) Continued demand from local community: The local health providers reasoned that since the local community continued to demand SP drugs, then they are still effective and therefore saw no reason not to prescribe them as first-line malaria treatment drugs.

6.3.3 Health workers' views on the implementation of the new policy changes

The study findings indicated that the implementation of the policy shift in 2006 by the Ministry of Health was not well organized. Most of the health workers and medicine sellers reported that the implementation was abrupt and was done within little sensitization of healthcare providers especially those working in the malarious zones. This state of unpreparedness by health workers and community members was confirmed by a health worker when he said:

*The implementation of the policy change was abrupt and not systematic and many private health providers were threatened with big loss, since they had big stocks of SP drugs. Some of us managed to sell our stocks because of the ignorance of the local people. Besides, I have a clinic behind this chemist where I treat people. So once I diagnose somebody with malaria and recommend that they take SP drugs which they buy from my chemist (drug shop). This helped me to avoid losses. **Chemist Owner 3, Raganga, aged 40 years.***

These sentiments were corroborated, as reported below, by a health provider in Raganga Village said:

*I learnt of the shift of policy in medications that was done in 2006, through an NGO agency that I was working for in 2008. There was also a training workshop that was organized by the Ministry of Health for nurses and clinicians for the whole of Kisii Central District. I did not attend this training as I had attended a similar earlier with the NGO. **Health provider 2, Raganga, Nursing Officer.***

6.3.4 Health workers' suggestions on future antimalarial policy change

When health workers and medicines sellers were asked to make suggestions that could be used in future in implementing a similar policy shift, they proposed several measures namely:

a) **Reduction of the number of tablets per dose:** The new antimalarial drug dose should include fewer tablets just as the case with SP drugs, so that patients can complete the dose as prescribed. They lamented that when they administered AL drugs, they came to realize that very few patients completed their dose.

b) **Cost:** To make the cost of the new AL drugs affordable to most people. The study revealed that most local people go to buy SP drugs from medicine sellers despite knowledge of Ministry of Health's policy shift to ACT drugs because SP drugs are much cheaper than ACT drugs.

c) **Reimbursement of funds:** For effective implementation of the any future policy change the government should also ensure that they reimburse those medicine sellers who had already bought large stocks of previous treatment regimes to protect them from making business losses. The continued sale of SP drugs even after the change of policy guidelines was attributed to the fear by local medicine sellers of making losses on the already acquired stock of SP drugs. The above three suggestions were clearly summarized by a medicine seller at Raganga Village, who said:

If antimalarial policy guidelines were to change, the ministry should ensure the recommended drugs are few, about 2 -6 tablets' than it is the case with the new ACT drugs that are considered too many by patients. I know there is a 'natural fear' of drugs by local people. The government should find a way of compensating those already having the old stock of antimalarials. Otherwise private drug sellers will find reason to continue selling the old type of drugs and this in my opinion is wrong. a 40-year-old Chemist Owner 3, Raganga.

The Kenya Government has in the last one and half decades changed its policy guidelines for treating uncomplicated malaria to artemether-lumefantrine or amodiaquine plus artesunate replacing monotherapy with chloroquine and sulfadoxine-pyrimethamine SP. The policy change became necessary because the therapeutic efficacy of chloroquine and SP had deteriorated. Any introduction of new treatment requires evidence and, specifically in the case of this policy change, health stakeholders should note that the success of a new treatment policy would depend on the adherence of health providers and patients to the recommendations (Zurovac et al., 2004). Furthermore, in Kenya as in many other countries, there is a powerful pharmaceutical industry that aims to influence prescribing in both the private and public sector (Mereruikwu et al., 2007).

This chapter has presented study findings on the perceptions and practices of both lay people and health workers with regard to the new antimalarial treatment guidelines. This study design was aimed at exploring these key concerns. For instance, the study showed that health workers and medicine sellers in the two study sites had knowledge of the change from SP drugs to ACT drugs as new first-line malaria treatment drugs. They were also aware of the fact that this step by the government was prompted by plasmodium resistance to existing treatment SP drugs, hence the need to replace them with more efficacious ACT drugs. All of them reported that the level of parasite resistance to SP drugs had risen to levels where the drugs were becoming ineffective in dealing with malaria infections in the country.

However, this knowledge about the introduction of the new antimalarial drugs did not translate into local patients having to know the actual names of these drugs in the

two study villages. For instance, 91.8 % of Raganga Village respondents and 81.4 of those from Mosochi Village reported that they did not know the actual name(s) of the new antimalarial drugs.

Further, despite the policy shift from SP to ACT drugs as first-line malaria treatment drugs by the government, still SP drugs were widely being sold to or prescribed for patients in the two villages as first-line drugs by local health workers at the time of the study, about four years from the date of the implementation of the policy change. Even in local government health facilities where ACT drugs are provided for free, the study findings indicated that sometimes health-workers ignore the new treatment guidelines and prescribe SP drugs as first-line malaria treatment drugs. The findings contrast with those of a study by Abuaku et al., (2004) which showed that prescribers in government healthcare facilities tend to follow national treatment guidelines more than prescribers in private health facilities.

This blatant violation of expected behaviour and unprofessional behaviour by health workers was attributed to three main reasons. (1) Inadequate supply of ACT drugs by government, (2) local people's preference for SP drugs because of their being cheaper as a dose of SP drugs usually consists less than three tablets compared to a maximum of 24 tablets depending on body weight for ACT antimalarial drugs, and (3) lack of surveillance to ensure that the new malaria treatment guidelines are adhered to. In light of this, the study underscores the fact that despite the effectiveness of Artemisinin-based combination therapies (ACT) in the treatment of malaria and the good intentions of the government that informed the change, when you get to "real life"

movement of these drugs, it becomes a system issue of distribution, provider behaviour and affordability that combine in complex ways to determine the uptake of ACT drugs.

The study findings also showed that local people have a number of ideas and notions that they attributed to these new antimalarial pills that include: 1) the dosage has too many tablets for a single episode of not so severe malaria; 2) They are bitter compared to most SP drugs; and 3) Most of them are yellow in colour. In addition, although most informants agreed that ACT drugs are effective compared to the most commonly used SP drugs in the community, *Fansidar* and *Metakelfine*, such ideas and notions about the new antimalarial remedies pose a major challenge to the implementation of the new policy changes. It is argued here, therefore, that for effective implementation of new malaria treatment innovations and interventions, there is need to sensitize local communities about the intervention just before the commencement of the treatment intervention.

CHAPTER SEVEN

CONCLUSIONS AND RECOMMENDATIONS

7.1 Introduction

The main objective of this study was to explore the socio-cultural interpretation and appropriation of pharmaceuticals with regard to antimalarial drugs in a rural Abagusii community. The study also sought to know lay and health workers' perceptions and practices with regard to the change of antimalarial drug policy changes.

Conclusions drawn from the study findings are based on the research questions and are presented below.

7.2 Conclusions

This study examined the local medical pluralistic system in which pharmaceuticals are used. The findings showed that Mosochi and Raganga villages are characterized by a medical pluralistic health care system that accords local people a range of therapeutic options for the alleviation and prevention of physical discomfort or emotional distress. The medical systems exist side by side. These treatment avenues are broadly classified in this study into two groups, namely, a biomedical health care system (which offers western medicine is referred to as hospital medicine) and traditional therapies. Biomedical medicine is provided by local government health facilities, private clinics, drug shops, chemists and by the unlicensed drug vendors. On the other hand, traditional medicine such as herbal medicine is provided by traditional healers. The study results further showed that while it is acknowledged that people in

Mosocho and Raganga villages have a wide therapeutic field to seek for healthcare whenever confronted with ill-health, it is also clear that a majority of them trusted and preferred health care avenues that are associated with biomedicine. This finding, points to a societal healthcare system that is in transition with a possible paradigm shift from a plural healthcare system to a single dominant healthcare system.

Another central concern that this study sought was to know how lay users of antimalarial drugs construct and disseminate knowledge about these drugs through their daily relations. Essentially the study sought to understand lay people 'appropriate' and 'localize' their understanding of antimalarials and the relation of this to the prevention and control of malaria. To achieve this objective the study used the cultural reinterpretation approach to seek to know whether the popular use of Western pharmaceutical in Mosocho and Raganga villages undergo cultural reinterpretation when they are introduced into locally existing frames of understanding, since they are moving from one context of meaning to another.

The study findings indicated that Western pharmaceuticals (antimalarial drugs included) manufactured using the scientific paradigm have more or less found expression and meaning in the local community as originally prescribed by biomedical science. For example, as much as possible antimalarial drugs were 'seen and transacted' by local people in ways recommended by health practitioners. In other words local people do not attach new notions and ideas to Western medical technologies on the contrary; they strived to 'approximate' their interpretations of meaning to that of biomedicine. Drawing from the theoretical understanding of the introduction, transfer and appropriation of concepts and material objects the sale of

antimalarials in Mosochi and Raganga villages highlights the challenges for health professionals seeking to scale up public health interventions.

The other objective of this study focused on every day practices of therapy seeking by malaria patients on the actual and every day choices these patients make on antimalarial use. The importance of understanding social contexts in which pharmaceuticals such as antimalarial drugs are used in a community and consequently how this information would inform future drug use interventions in malaria affected communities continues to interest healthcare stakeholders and medical anthropologists. Medical anthropologists have long urged that pharmaceuticals developed according to scientific paradigm (etic understanding) and separated from their biomedical context and integrated into culturally specific modes of understanding (emic understanding). It is therefore argued in this thesis that lay people's ideas about drugs (Explanatory models) are formed according to their experiences and situations. To capture the depth of landscape in which antimalarials were being transacted in the two villages the study also sought to understand the sources of information about antimalarial drugs, factors that influence the use of these drugs and household decision-making about antimalarial drug use.

The study findings showed that medical 'knowledge' or presentation about malaria had become part of a popular representation of malaria in the community. The connection with mosquitoes (*chiumbu*) was consistent in the two villages. People were more or less certain as to the symptoms, which indicate that a person has malaria. Most cases of malaria in the community were treated through self-medication; through buying antimalarial drugs since biomedical care is the preferred choice of a majority of

suspected malaria cases. In addition, the study findings showed that the community has a number of avenues through which the local population access information on antimalarial drugs. This include: Mass media (radio, TV and newspapers), health facilities, social networks and pharmacies. The mass media through the radio was singled out as the cheapest and easily accessible means through which the local population got information on antimalarial drugs. The study further showed that lay people are knowledgeable on the merits and demerits of each of the local sources of information. At the household level, decisions on which type of antimalarial drugs to be used or not are mostly taken by women. Consultations between women and their male partners are only done in situations where a member of the household has a case of complicated malaria or the woman is unable to raise enough money for medication. The central role of women in making antimalarial drug use decisions can be attributed to the fact that women usually play the role of care givers to their children and husbands whenever they are in poor health.

The importance of understanding what happens when antimalarial drug policy guidelines change, was one of the core concerns of this study. Specifically, the study sought to understand lay people's and health workers' perceptions and practices regarding the shift of policy on the use of first-line antimalarial drugs, SP to ACT drugs. It is clear from this study that most lay people prefer to use SP drugs as first-line drugs of choice four years after the government changed policy. The case was no different with health providers in the two villages who were found to dispense new generation antimalarial drugs (ACT) alongside the previous generation antimalarial drugs (SP) despite the new regulatory climate. This failure to adhere to the policy change can

probably be attributed to the way the new antimalarial drugs were introduced in the study area without sufficient awareness creation among health providers and community stakeholders. Since the success of any new treatment policy would depend on the adherence of patients and health providers to the new recommendations, it is important to understand these dynamics if the benefits of the new antimalarial drugs are to be realized. For this reason, the introduction of new antimalarials in future must take cognizance of the implications of the realities of the environment in which antimalarial drugs are used and introduce them in a manner that maximizes the interventions effectiveness so as to realize the positive impact of these antimalarials.

This study also focused on the therapy seeking practices of malaria patients, antimalarial drug choices made, when faced with malaria and health workers prescribing practices after the shift in antimalarial treatment policy. The study revealed that lay people in the community, while aware of the change in malaria treatment guidelines, have nevertheless limited knowledge on the factors that motivated the government to make such changes. Health workers too, as expected, understood the reasons for the change but ironically were still prescribing SP drugs as a first line antimalarial drug. This unexpected behaviour from patients and health providers poses a big challenge to effective implementation of the new policy guidelines as prescribed by the government. The result of this is that the beneficial effects of the new antimalarial remedies might not be realized as earlier anticipated.

In conclusion, it is noted that medical pluralism remains an important field of research and reflection to medical anthropologists and other social scientists, especially because of the rapidly changing medical and human conditions. The existence of plural

medical systems in society requires constant renegotiations and new relational dynamics among the various health avenues that need to be taken into consideration by public health practitioners. The study showed that pharmaceuticals (including antimalarial drugs) are commonly transacted in Mosochi and Raganga villages just as do other general merchandise. These medicines range from 'Western' or hospital medicine provided by the local public health facilities, the private clinics and by biomedical medicine sellers and 'traditional' healing using herbal medicines. However, despite, the presence of these two medical systems, biomedicine (Western medicine) remains the dominant healthcare system in the area. There appears to be a shift from a plural healthcare system towards a singular dominant system is taking place, although a more systematic study needs to be carried out in the area to establish this empirically.

Given that new medical techniques and innovations linked mainly to biomedical approaches are dramatically spreading all over the world, there is no doubt this would have implications on the way in which social actors think and perceive them in their quest for treatment. The importance of all health stakeholders understanding social contexts in which new medical innovations and remedies are introduced is brought out in this study.

Finally, this study has made two main contributions of intellectual and public health significance. First, it provides knowledge that continues to define the growing field of medical anthropology. For instance, the study has generated scientific insights into the use of Western pharmaceuticals in a non-Western context. This information is important since most of research studies in this line of inquiry have been undertaken from a biomedical or economic perspective. These two perspectives hardly apply

contextualization of medical and pharmacological concepts. Second, the study has provided evidence-based information that can inform future introduction of new medical innovations and technologies, such as the change in malaria treatment guidelines in Kenya.

7.3 Recommendations

Based on the study findings the following recommendations can be made:

- There is need to improve communication between health workers and patients if the benefits from new medical interventions such as the ACT drugs are to be realized. There is need to understand 'patients rationality' with regard to their appropriation of meaning to these drugs. Future introduction of new antimalarials must take cognizance of the implications of the various realities of the environment in which these antimalarial drugs are introduced.
- Due to the popularity of western medicines in non-Western societies there is need for more context-based qualitative studies on how these pharmaceuticals have been incorporated into healthcare systems in non-Western settings.
- Wide spread use of new antimalarial remedies would only occur if deliberate efforts are made towards educating local communities so that they understand the rationale and benefits of such interventions.
- Given that this study has shown that health workers do not always prescribe the appropriate antimalarials to patients, there is also need to further investigate health workers' practices regarding drug prescription. This will create an

understanding the factors that influence health worker's behaviour and their perceptions regarding new antimalarial treatment guidelines so as to better design appropriate interventions that can improve diagnosis and prescribing practices.

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APPENDICES

APPENDIX ONE: Informed Consent

Name of Research Leader: Jared Maaka Siso

Name of Organization: Institute of Anthropology, Gender and African Studies,
University of Nairobi

Information sheet for the individuals participating in the research

“Pharmaceuticals: Socio-cultural interpretation and appropriation of antimalarials in a medical pluralist society in a rural Kenyan Community”

I study at the Institute of African Studies, University of Nairobi. I am doing some research on the treatment of malaria in this community. Malaria as you know is a common health problem in this area.

Purpose of the research: The availability and popularity of pharmaceuticals in the developing countries has increasingly been a subject of scientific interest. The main objective of this study is to understand how people from different socio-cultural backgrounds have actually incorporated the pharmaceuticals in their treatment regimens. Since we are ill-informed about the actual uses of these pharmaceuticals, the context in which they are used and what such drugs mean. The quest for such knowledge is important since we have ethnographic accounts that have showed that pharmaceuticals continue to be used outside the biomedically required practice. For instance, over 80% of malaria treatment cases in Africa are treated using antimalarial drugs obtained from private sector. Given that we have increased cases of anti-malaria resistance and consequent frequent first-line antimalarial policy changes, there is need to not only understand the lay people’s rationale for drug use but also that of health workers perceptions to the changing guidelines.

This study therefore seeks to explore the local context of use of pharmaceuticals with regard to antimalarials in two villages in this community

Procedures: To find answers to some of these concerns, we invite you to take part in this research project. If you accept, you will be required to take part in an interview where we will ask you questions concerning community's malaria treatment behaviour. You are being invited to take part in this interview because we feel that your experience as a community member/medical personnel/opinion leader in the community can contribute much to this discussion. During this discussion, however, we do not wish you to tell us your personal experiences, but give us your opinion on the questions that we will pose to you, based on your personal experiences and your experience within the community. If you do not wish to answer any of the questions, you may say so, and keep quiet. The interview will take place at a convenient venue yet to be identified and no one else but the research team will be present during this discussion. The entire interview will be tape-recorded but you will not be identified by name on the tape. Additionally, the information recorded is considered confidential, and no one else except the research team will have access to the tapes. Once we are through with them we will erase all the information. The expected duration of the discussions is about 30 to 60 minutes.

Risks and discomforts: There is a slight risk that you may share some personal or confidential information with the research team by chance, or that you may feel uncomfortable talking about some of the topics. However, we do not wish this to happen, and you may refuse to answer any question, if you feel they are personal.

Benefits: There will be no direct benefits to you. But your participation is likely to help us to make better decisions concerning antimalarial use in this area.

Incentives: You will not be provided any incentive to take part in the research. However, you will be provided with soda and bread (**for FGD participants**) after the discussion session

APPENDIX TWO: Free listing Question Guide

A study on the Socio-cultural interpretation and appropriation of antimalarials in a medical pluralistic society in a rural Kenyan community

Introduction

My Name is.....I study at the Institute of African Studies, University of Nairobi. I am currently doing some research on the treatment of malaria in this community for about a year in this community. Malaria as you know is a common health problem in this area and the country in general. I am interested to know the medicines that you use in the treatment of malaria in this area, so as to make appropriate decisions on malaria treatment.

In this regard I would like to ask you a few questions regarding this. The interview will take a few minutes. I cannot ask everyone in the community, so, we are choosing a few of you at random. That is how you have been chosen. If you agree, I would like to ask you some questions on malaria treatment.

Your participation is entirely voluntary. If you do not want to be part of this interview, you are free to say no. if you do not take part now you are still welcome to participate in our other interviews in the coming months.

Do you have any questions at the moment?

Please sign for me the consent form as a confirmation of your acceptance (*Should sign after fully explaining the full contents in the consent form-Appendix One*).

Questions

1. Please tell me the most commonly treatment pills used in this village?
2. Tell me all the drugs used that are used by the local people in the treatment of malaria?

APPENDIX THREE: Questionnaire survey

Information sheet and consent

Introduction

We are from the Institute of Anthropology, Gender and African Studies, University of Nairobi. We are currently doing some research on the treatment of malaria in this community for about a year in this community. Malaria as you know is a common health problem in this area and the country in general. We are interested to know the medicines that you use in the treatment of malaria in this area, so as to make appropriate decisions on malaria treatment.

In this regard we would like to ask you a few questions regarding this. The interview will take about.....minutes. We cannot ask everyone in the community, so, we choose a few of you at random. Your household has been selected. If you agree, we would like to ask you some questions on malaria treatment.

Your participation is entirely voluntary. If you do not want to be part of this Survey, you are free to say no. if you do not take part now you are still welcome to participate in our other interviews in the coming months.

Do you have any questions at the moment?

Please sign for me the consent form as a confirmation of your acceptance (*Should sign after fully explaining the full contents in the consent form- Appendix 1*).

IDN:

Interview date.....

Interviewer initials

| | | |
|-----|---|--------|
| 1. | Name of health facility _____ | |
| 2. | Sex male=1, female=2 | __ |
| 3. | Date (or year) of birth (dd/mm/yyyy) | __ __ |
| 4. | Village Mosochi=1 Raganga=2 | __ |
| 5. | District Kisii=1 | __ |
| 6. | Do you know how to read? 1. Yes 2. No. | __ |
| 7. | What level of education have you reached? 1=None or incomplete St 7 2=Complete St 7 3=Secondary school or higher | __ |
| 8. | What type of roof does your house have? 1=iron roof; 2=grass; 3=other specify..... | __ |
| 9. | What type of floor does your house have? 1=cementi; 2=soil; 3=others specify | __ |
| 10. | Is there a radio in your house? Yes=1, No=2 | __ |
| 11. | Does anyone own a mobile phone in your house? Yes=1, No=2 | __ |
| 12. | How many bed nets are there in your house? | __ __ |
| 13. | What types of healthcare provisions are available in this community? | |
| 14. | How do you source these pharmaceuticals | |
| 15. | Have you been prescribed an antimalarial drug? Yes=1 No = 2 | __ |
| 16. | If so what is the drug? SP=1, ACT=2, Q=3, other=4, Specify..... | __ |
| 17. | If antimalarial prescribed, specify the dose: No tabs/ times per day...../.....No days..... | __ __ |
| 18. | Name two Malaria drugs that you can obtain over the counter without a prescription | |
| 19. | Name your drug of choice if you have non-severe malaria? If it is not available, what drug do you | __ |
| 20. | List in order of importance your 2 main sources of information on malaria treatment? Health facility=1, TV=2, Radio=3, Newspaper=4, Family/friends=5, Pharmacy=6, Other (specify)=7..... | __ |

| | | |
|-----|---|-------------------------|
| 21. | <p>I would like to ask you about SP(Fansidar):</p> <p>a). How do you find the dosing of SP drugs? convenient=1, Not convenient=2</p> <p>b). Do you feel any side effects while using the drugs? Yes=1, No=2</p> | <p> __ </p> <p> __ </p> |
| 22. | <p>I would like to ask you about the new antimalarial drugs</p> <p>Do you find the dosing is convenient? Yes=1, No=2</p> <p>Do you feel that side effects are acceptable? Yes=1, No=2</p> | <p> __ </p> <p> __ </p> |
| 23. | <p>Have you heard that a new antimalarial treatment is in use in government clinics in Kenya? Yes=1, No=2</p> | <p> __ </p> |
| 24. | <p>If so, where did you hear it?.....</p> | <p> __ </p> |
| 25. | <p>Do you know the name of the new treatment? Yes=1, No=2</p> <p>If so, name it.....</p> | <p> __ </p> <p> __ </p> |
| 26. | <p>Do you know anything about the new treatment? Yes=1, No=2</p> <p>If so, specify</p> | <p> __ </p> |

APPENDIX FOUR: FGD Question Guide

A study on the Socio-cultural interpretation and appropriation of antimalarials in a medical pluralistic society in a rural Kenyan community

Community knowledge and perceptions of malaria

What are the common illnesses in this community?

What is the local name for malaria? (*Probe: local term for malaria- which one is considered to be the most dangerous?*)

What are the signs and symptoms of malaria?

Who is at most risk from malaria in the community?

How malaria caused?

Provision Healthcare

What types of healthcare provisions are available in this community? (*Probe: all available health providers*)

What types of medicines are commonly used in this community with regard to malaria treatment? (*Probe: other remedies, drugs and injections*)

What meaning do you attach to these medicines? *Probe: how they are labelled, local terminologies and categorization?*

How to you source these medicines?

Treatment seeking decisions

What types of malaria treatment drugs are available to malaria patients in this community? (*Probe: use of non-pharmaceuticals*)

How do you get these antimalarial? *Probe: types of sources and how they got to know the drugs*

What factors influence the use of this from that type of antimalarial drug?

Who is responsible in making decisions for buying antimalarial? (*Probe: family members, social networks, health providers and care givers*)

Information about antimalarial drugs

What antimalarial drugs do malaria patients in this village use? (*Probe: Knowledge on dosage and dose completion*)

How did you get to know about the availability of these antimalarial drugs? (*Probe: mass media, relatives, social network, health providers?*)

What are the merits of using these sources of information?

What are the demerits of using these sources of information?

Perceptions and practices on malaria treatment

Do you know of the policy shift from SP to ACT drugs in the treatment of malaria?

How did you get to know this information?

Why was the policy changed?

APPENDIX FIVE: In-depth interview Question Guide

A study on the Socio-cultural interpretation and appropriation of antimalarials in a medical pluralistic society in a rural Kenyan community

Community perceptions of malaria

What are the common illnesses in the community?

Which of these illnesses are considered to be the most important? (*Prevalence, severity, mortality*)

What is the local name for 'febrile illnesses'? (*Probe: terms- which one is considered to be the most dangerous?*)

What are the signs and symptoms of (*local term for malaria*)?

Who is at most risk (*Local term for malaria*)?

Who is it caused?

Healthcare provisions

What types of healthcare provisions are available in this community?

What types of pharmaceuticals are commonly used in this community?

What meaning to you attach to these pharmaceuticals? *Probe: how they are labelled, local terminologies and categorization?*

How to you source these pharmaceuticals?

Treatment seeking decisions

What types of malaria treatment drugs are available to malaria patients in this community? *Probe: use of non-pharmaceuticals*

How do you get these antimalarial drugs? *Probe: types of sources and how they got to know the drugs*

What factors influence the use of this from that type of antimalarial drug?

Who is responsible in making decisions on buying or not buying of antimalarial drugs?
Probe: family members, social nets, health providers and care givers

Information about antimalarial drugs

Have you ever used antimalarial drugs to treat an episode of malaria? Probe: What types? Knowledge on dosage and adherence to dosage

How did you get to know about the availability of these antimalarial drugs? Probe: mass media, relatives, social network, health providers?

What are the merits and demerits of using these sources of information?

Lay people's perceptions and practices

Do you know of the new antimalarial drugs being used in government clinic in Kenya?

Do you know anything on the new drugs?

How did you get to know this information?

Tell me the reasons of this change?

Name the two main drugs recommended for the treatment of non-severe malaria?

What is your opinion on the dosing of the new drugs compared to SP??

If antimalarial drugs are to change again? What do you suggest be done?

APPENDIX SIX: Health workers' Interview Guide

Name of the health facility.....

Staff designation.....

Sex.....

Number of years in this position.....

Number of staff that work in the facility.....

Introduction

What types of healthcare provisions are available in this community?

What types of malaria treatment drugs are available to malaria patients in this community? Probe: use of non-pharmaceuticals

Health worker's perceptions and practices

Do you know of the policy shift from SP to ACT drugs in the treatment of malaria?

How did you get to know this information?

Tell me the reasons of the policy change

Name the two main drugs recommended for the treatment of malaria?

Experience of change from SP to ACTs

Were you working at this facility at the time of the change?

Where did you first hear of the changes from SP to ACT DRUG?

What was your main source of information that you used to implement the changes at work? Probe: Guidelines, posters, senior staff, radio etc

What is your overall impression of the way the change in 2006 was managed?

Opinion on the current antimalarial drugs used

Tell me your first choice in prescribing for an episode of non-severe malaria? Probe reasons

In your opinion do you think ACT drugs are popular among Healthcare providers? Probe: reasons

In your opinion do you think ACT drugs are popular among patients? Probe: reasons?

Change from SP to ACT

Do you know about the dosing of the new drugs?

Do you anticipate problems with these changes of antimalarial drugs?

Do you know anything else about these new drugs?

If antimalarial drugs are to change again? What do you suggest be done?

APPENDIX SEVEN: Village census

Pharmaceuticals in a medical pluralistic society: Socio-cultural interpretation and appropriation of antimalarials in a rural Abagusii Community in South Western Kenya.

District:

Village:

Household No:

Interviewer Name:

A: Information regarding all persons

| Name | Serial No. | Relationship | Sex | | Age | Religion | Marital status | Education | Occupation | S. Water | Residence |
|---|------------|--|-------------------------------|---|------------------------------|---|---|---|--|--|--|
| | | | M | F | | | | | | | |
| All the names of family from oldest to the youngest | | 1-Head 2-Spouse 3-son 4-Daughter 5-Bro/sis 6-Fa/Ma 7-relatives 8-non-relatives 9-DK . | Mark X in the appropriate box | | Record using two digits "00" | 1-Catholic 2-Protestant 3-other Christians 4-Muslim 5-Traditionalist 6-No religion 7-DK | 1-Never married 2-Monogamous 3-Polygamous 4-Widowed 5-Divorced 6-Separated 7-DK | 1-Not schooled 2-Primary 3-Secondary 4-College 5-University 6-DK | 1-Farmer 2-Casual 3-Formal job 4-DK | 1-Pond 2-spring 3-Piped 4-tank 5-Borehol 6-DK | 1-Mud-thatched 2-Mud-iron sheets 3- wood-iron Sheet 4-Parmanent Hse 5- Other (specify) |
| | | | M | F | | | | | | | |
| | 1 | | | | | | | | | | |
| | 2 | | | | | | | | | | |
| | 3 | | | | | | | | | | |
| | 4 | | | | | | | | | | |
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