

DEPARTMENT OF SOCIOLOGY  
UNIVERSITY OF GHANA

CARE – SEEKING PRACTICES OF MALARIA AMONG URBAN RESIDENTS  
OF AWOSHIE

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THE AWARD OF **MA SOCIOLOGY DEGREE.**

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## DECLARATION

I hereby declare that, except for references to other people's work, which have been duly acknowledged, this Dissertation is the result of my own research work carried out in the Department of Sociology, under the supervision of Prof. Kodjo Senah and Prof. Clara Fayorsey.

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DATE



### **DEDICATION**

This work is dedicated to the greater glory of God for the gift of intellect. To my parents (Gabriel and Elizabeth) who have supported me through life and laid the foundation I have acquired for taking decisions on my own and being independent to carry out this work. Also dedicated to Atta Quarshie, a man of immense courage, who saw the need to educate me.



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## ACRONYMS AND ABBREVIATIONS

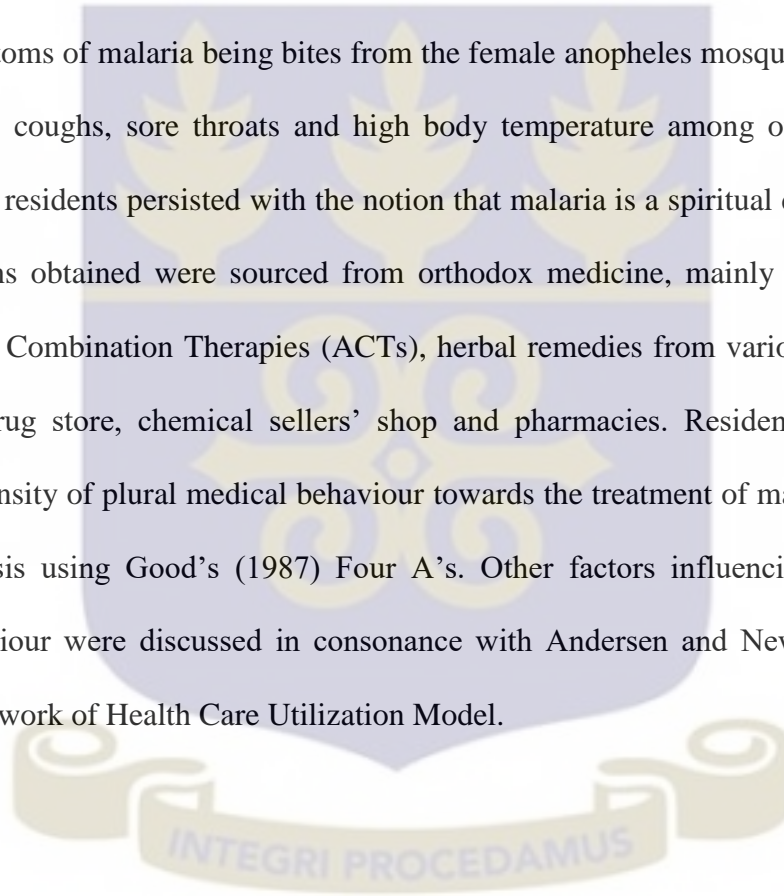
ACT	Artemisinin – based Combination Therapy
CAM	Complementary and Alternative Medicine
CHAG	Christian Health Association of Ghana
CHPS Zone	Community Health based & Planning Services
DFID	Department for International Development
DOT	Direct Observation Treatment
EPI	Expanded Programme on Immunization
GDA	Ghana Dental Association
GDHS	Ghana Demographic and Health Survey
GHS	Ghana Health Service
GMA	Ghana Medical Association
GRMA	Ghana Registered Midwives Association
HIV/AIDS	Human Immune – Deficiency Syndrome
ITN	Insecticide Treated Nets
KATH	Komfo Anokye Teaching Hospital
KBTH	Korle – Bu Teaching Hospital
LLIN	Long Lasting Insecticide Bed Nets
MCH	Maternal and Child Health
MDG	Millennium Development Goal
MOH	Ministry of Health
NGO	Non – Governmental Organization
NMC	Nurses’ and Midwives’ Council
NMCP	National Malaria Control Programme

OTC	Over – The – Counter drugs
PHMHB	Private Hospitals and Maternity Homes Board
RBM	Roll Back Malaria
RDT	Rapid Diagnostic Test
SDG	Sustainable Development Goals
SP	Sulphadoxine - Pyrimethamine
SPMDP	Society of Private Medical and Dental Practitioners
TB	Tuberculosis
TMPC	Traditional Medicine Practice Council
TTH	Tamale Teaching Hospital
UN	United Nations
UNICEF	United Nations International Children’s Emergency Fund
USAID	United States Agency for International Development
WHO	World Health Organization



## ABSTRACT

This study was carried out among urban residents at Awoshie, a suburb of Accra, with the aim of investigating their care practices in malaria. It was also to ascertain the extent to which residents exhibited plural medical behaviour in treating malaria. A KAP survey approach was used to collate responses from 250 respondents. Findings from the research suggest that residents are aware of the causes and symptoms of malaria being bites from the female anopheles mosquito and headaches, chills, coughs, sore throats and high body temperature among others respectively. Some residents persisted with the notion that malaria is a spiritual disease. Treatment options obtained were sourced from orthodox medicine, mainly the Artemisinin – based Combination Therapies (ACTs), herbal remedies from various outlets such as the drug store, chemical sellers' shop and pharmacies. Residents exhibit a large propensity of plural medical behaviour towards the treatment of malaria, based on an analysis using Good's (1987) Four A's. Other factors influencing health seeking behaviour were discussed in consonance with Andersen and Newman's (Undated) framework of Health Care Utilization Model.



## CHAPTER ONE

### **Malaria: A malignant burden**

Malaria is a disease that has scourged society through generations. From its unknown phase to its discovery by the malariologists and further counting for an effective treatment in eradicating its incidence, it has become a burden; and its implications are diversified. The implications span from private cost for families to increased public expenditure for states. As such malaria has become a concern for economic development. Amartya Sen drawing a relationship between health and development opines that health, like education, is considered the most basic capacity that adds value to human existence. Health adds up to prosperity in all its dimensions and is of great value as it allows people to enjoy their potential as human beings (Sen, 1999; WHO, 2001; Bloom et al, 2004). In this vein, the relentless struggle to kick malaria out of the tropics had been one of the preoccupations of the Millennium Development Goals which ended in 2015. This study concerns malaria, whose debilitating effects have become a major setback in the development of sub – Saharan Africa and parts of the tropical world. Its effect on economic development is why the United Nations is committed to leading the fight against malaria and other diseases in its new agenda for 2030. Tackling the unfinished business of malaria in the new Sustainable Development Goals (SDGs), the UN is ensuring healthy lives and promoting well – being irrespective of age. As a specific objective, the UN aims at ending the epidemics of malaria among other tropical diseases such as tuberculosis and water – borne diseases. The importance of good health cannot be underscored in the development of any country’s economy. This goes to say that health plays a crucial

role in any country's agenda if they want to fight poverty and foster economic development (United Nations, 2015; 2016).

Successes have been recorded in the fight against malaria:

More than 6.2 million malaria deaths have been averted between 2000 and 2015, primarily of children under five years of age in sub-Saharan Africa. The global malaria incidence rate has fallen by an estimated 37 per cent and the mortality rate by 58 per cent.

Over 900 million insecticide-treated mosquito nets were delivered to malaria-endemic countries in sub-Saharan Africa between 2004 and 2014, (United Nations, 2015, p. 6).

With these successes chalked with the Millennium Development Goals, one may say then that it's not necessary carrying out any further research on health seeking behaviour, as far as malaria is concerned. But malaria continues to be a public health issue in most parts of sub – Saharan Africa, Ghana inclusive. It is in this vein that the World Malaria Report (2015) recognizes pitfalls in many identified areas. As a continuum in the fight against malaria, the Sustainable Development Goals for Agenda 2030 treats malaria as an unfinished business. Hence the need to reinvestigate any new developments that mitigate appropriate health seeking behaviour as far as malaria is concerned (United Nations, 2015; 2016).

*Malaria as a plague in society.* Once upon a time, the West African coast was described as the white man's grave because the region severed the lives of visitors with malaria and yellow fever. As a suitable area for the growth of the anopheles, Plasmodium falciparum was a common and deadly strand of the malaria infections that killed European explorers. Between 300 and 700 per thousand of European visitors died annually in the West African coast from malaria. Children born in the

coast, however, developed immunity as they battled with the parasite in their first years of existence before the age of five. The African population cannot be said to have been spared from the scourge of this disease since both young and old have died from this disease (Curtin, 1961).

Today, half of the world's population, an estimated 3.2 billion people are within the risk of being infected with malaria. 214 million cases were estimated in 2015 with 438,000 recorded deaths. The area most affected is sub – Saharan Africa which carries the highest burden; recording 89% of malaria cases and a further 91% of mortalities. The economic cost of malaria weighs down on the development agenda for burdened countries. Since the beginning of the new millennium, malaria management cost has amounted to US\$300 million in sub – Saharan Africa alone. This cost is expected to rise up to 1.3% of the continent's gross domestic product. The agenda 2030 of the sustainable development goals will increase economic expenditure in endemic areas by an additional US\$1.2 trillion. The attempt at treating malaria consumes 40% of public health spending in endemic areas (WHO, 2016).

The hard fact remains that malaria is transmitted by being bitten by the anopheles mosquito with the plasmodium falciparum specie being the most deadly among the species that cause malaria in humans. Children, expectant mothers and travelers with low immunity are the most vulnerable to malaria infection. 70% of illness and death occur among children under five in the high transmission zones of the world. It is estimated that approximately 305,000 children die before reaching age five in Africa. Early diagnosis and treatment can prevent death resulting from malaria. Though artemisinin is the primary component for treating uncomplicated malaria today, there

are already reports of artemisinin resistance in some areas around the globe: Cambodia, Laos, Myanmar, Thailand and Viet Nam. Treated mosquito nets with a life span of effective prevention between 2 – 3 years have become the most reliable source of malaria prevention. Indoor residual spraying has also become one of the effective means of ensuring a reduction in malaria transmission. There are still efforts to develop the longer lasting forms of insecticides that control the spread of malaria. By 2030, the world would need US \$8.7billion in order to reach a 90% reduction in malaria infection (WHO, 2016).

*Earlier forms of malaria treatment.* Contracting malaria was seen as an anomaly in body functions. The patient had acquired bad blood and that situation had to be remedied. Treatment was aimed at restoring the patient to his normal bodily fluid functions. With the germ theory of disease causation unknown, the bad blood believed to be the cause of the illness was let out through bleeding and purging. Following the humoral pathology of disease and Brunonian system of treatment, the patient was made to follow some dietary rules and put on tonics to salvage the situation of bad health (Shryock, 1957 as cited in Curtin, 1961).

Quinine became the effective treatment against malaria when it was discovered that malaria was caused by a parasite, *plasmodium falciparum*. It was derived from the Cinchona tree and for a considerable period of three centuries was the effective cure for malaria. In the 1930s and 1940s, quinine was used to cure malaria in Africa. A second effective treatment against malaria has been the use of chloroquine. It was used in the 1940s after the Second World War. Various drugs that have followed in the treatment of malaria include Alebrin or Mecrapine, Mefloquine or Lariam,

Halofantrin, Malarone among others. Artemisinin is now the modern acceptable treatment for malaria. The fight against drug resistance and the search for an effective drug carries on till this day (Lambert, 2003).

### **Problem statement**

Studies in health seeking behaviour have concentrated on aspects of factors like income (Akinawo & Oguntimehin, 1997; Byrne, Jimenz – Soto & Morgan, 2013; King & Maman, 2013) and distance or availability of health care facility (Ward, Clark & Heidrich, 2009; Byrne et al, 2013) as influencing health seeking behaviour at any given point in time. Others (Franckel, Arcens & Lalou, 2008) have also concentrated their studies in African rural settings where it is opined that health seeking behaviours vary between villages in relation to treatment practices and disease management methods in a homogenous environment. Seldom are there any recent studies to holistically examine the myriad factors that determine health seeking behaviour within a heterogeneous setting. This work is meant to examine predisposing factors to health seeking behaviour holistically and to identify the dominant factors within a heterogeneous community.

Again discussions on the relationship between health and economic conditions have assessed the differences in personal finances on health (Anderson et al, 2006; Mirvis, Chang & Cosby, 2008). Health as an ‘economic engine’ is being promoted; suggesting that better health leads to economic development. Both urban and rural dwellers carry the responsibility of contributing to economic development by engaging in productive economic activities. Other studies have focused on the health seeking behaviour of women (Outwater, Nkya, Lwihula & Dallabetta, 2001; Ngom,

Debpuur, Akweongo, Adongo & Binka, 2003; Nayab, 2005; Mathur, 2008) and their reproductive rights. Health seeking behaviour studies have also been conducted in relation to sexual health (Awusabo – Asare & Anarfi, 1997; Akinnawo & Oguntimehin, 1997; Barua & Kurz, 2001; Awasthi et al, 2006; Stadler & Delany, 2006; Barman – Adhikari & Rice, 2011) and psychological health (Coton et al, 2008; Ward et al, 2009). Much attention has been given to the rural poor (Parkhurst et al, 2006, Franckel, Arcens, Lalou & Kneipp, 2008; Burton et al, 2011) because of some known predicament of poverty that negatively affects every facet of their life especially in terms of their health. As such, home based care is one of the options that have been suggested to deal with the health needs of rural people.

Concerning the urban population, not much attention has been given to how urban health needs are addressed. There is indeed a dearth of research studies in the urban context. This is perhaps because there is a commonsense assumption that most health care services are concentrated in the cities and so health needs would be taken care of. However, I have not come across empirical studies to prove this assertion. Again, on a casual day within the vicinity where the researcher lives, there are vans that sell drugs on a daily basis. Residents patronize these drug services in addition to getting medication from drug stores and visiting the hospital. An average individual obtains drugs from many outlets to cure a single ailment, say malaria. One does not know the reasons motivating this behaviour and also at what point a decision is taken to visit the hospital. This study is further going to outline some issues which determine health seeking behaviour, the causes, and treatment and prevention options of malaria

as well as ascertain the extent to which urban dwellers in Awoshie exhibit plural medical behaviour in dealing with cases of ill-health.

### **Objective of the study**

The objective for this study was to identify issues that contributed to the decision to seek medical help and to also ascertain the extent to which urban dwellers exhibited plural medical behaviour as an option to health care.

### **Aims of the study**

The specified aims of this work were to:

1. Examine the perceived causes and symptoms of Malaria.
2. Identify the common treatment options available in treating Malaria.
3. To identify some modes of preventing malaria.
4. To ascertain, to what extent people exhibit plural medical behaviour.

### **Significance of the study**

Knowledge and attitude have been found to be key influencing factors to health seeking behavior in general than age, income, employment status, or education level. Poor knowledge or low health literacy can result in poor health outcomes and add on costs which overburden the Ghanaian economy and health sector. Thus the research which focused on the health seeking practices of malaria would have multiple impacts; on society, the Ghanaian economy, the health sector and the individual.

While the research was aimed at determining the level of knowledge and attitude and explaining the relationship between those levels and sex and level of education for

example, it would help the individuals contacted to begin to be more mindful of their health seeking behaviour. The results of the research would immensely benefit policy makers, and health practitioners as well as NGOs to pursue health agenda and design appropriate programmes for the Awoshie community and communities with similar environmental and demographic characteristics. This has positive economic implications in the long run for individuals and the nation in terms of a healthy population and subsequently productivity and availability of labour.

Increasing socio-cultural diversity; shaping patients' beliefs and values; removing embarrassment or discomfort to ask questions concerning their health; and the practice of seeking information from peers rather than health professionals; inability of patients to read and understand health information and so act on it; taking medications wrongly; and complying with medical directions are other motivations for undertaking this research. The result of this expose would hopefully help people to assume a more positive disposition towards their health care practices especially for malaria. Results of the study will also add to literature on the subject

### **Scope and limitations of the study**

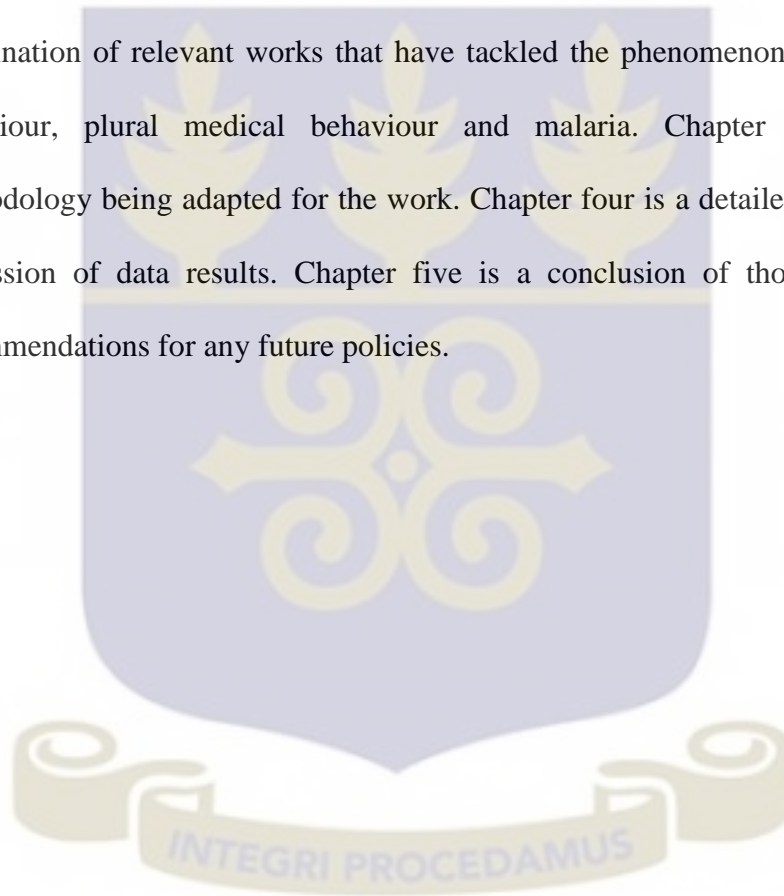
This study was limited to the Awoshie community. It also involved residents above 14 years of age. The expanse of the subject matter covered knowledge, attitude and practice towards malaria.

The study was limited by time and financial constraints. The alternative of performing cross sectional studies through the administration of questionnaires in itself was faced with the tendency to collect unreliable and untrue responses from

survey participants about their experiences. Education and the assurance of confidentiality were used as tools to curb such tendencies.

### **Organisation of thesis**

This work is in five parts. The first, being the introduction, presents the general plan of the work with an exposition on malaria as a health concern. Chapter two begins with a review of suitable theoretical models guiding the scope of literature and an examination of relevant works that have tackled the phenomenon of health seeking behaviour, plural medical behaviour and malaria. Chapter three is on the methodology being adapted for the work. Chapter four is a detailed presentation and discussion of data results. Chapter five is a conclusion of thoughts and further recommendations for any future policies.



## CHAPTER TWO

### LITERATURE REVIEW

This chapter focuses on malaria as a public health concern. Review of the relevant literature outlines some theoretical models and examines the holistic approach to health seeking behaviour including plural medical behaviour and then malaria; its causes, symptoms, treatment interventions initiated over the course of time.

Public health concerns have been a phenomenon that has been with man since John Snow discovered that a contaminated sewage well was causing cholera in London (Newman, 2001 in Eckersley et al, 2001). This is said to have led to an outburst of public health awareness in the late 1840s. Until then, health concerns were curative in approach. Modern day society with a better understanding, examines health issues from a holistic perspective. In this vein, health behaviour has been categorized into three main dimensions by Kasl and Cobb (1966a & 1966b) as:

*Preventive health behaviour* which is an action taken by a person who deems himself or herself healthy. Such a person may undertake behaviours that are meant to prevent the onset of disease. For instance, sleeping in an insecticide treated net to prevent the bite from mosquitoes and hence avoid the onset of malaria.

*Illness behaviour* refers to any action undertaken by an individual who considers himself indisposed. This person looks for an appropriate remedy to deal with his or her ill state. Illness behaviour is depicted, for instance, when an indisposed person obtains homemade rehydration salt, as a way of controlling water loss due to diarrhoea.

*Sick-role behaviour* involves the role played by persons who classify themselves as ill. They may be exempted from everyday chores and be encouraged to seek treatment from medical outlets. To some extent, those who play the sick role are exempted from daily routine work. For example, if a sick person obtains days of absence permission from the doctor, in order to stay at home to rest instead of going to work.

In respect to the three categories mentioned above, any conscious behaviour concerning one's health can be classified as preventive health behaviour, or illness behaviour or sick – role behaviour (Kasl & Cobb, 1966a, 1966b as cited in Glanz, Rimer & Viswanath, 2008).

To provide a comprehensive definition, David Gochman (1988, p. 3) explained health behaviour as:

Those personal attributes such as beliefs, expectations, motives, values, perceptions, and other cognitive elements; personality characteristics, including affective and emotional states and traits; and overt behaviour patterns, actions and habits that relate to health maintenance, to health restoration and to health improvement.

Two important deductions can be made from this definition: first of all, an individual's state of health or health situation is unclassified as behaviour and secondly, health behaviour comprises an individual's perception of health status. It also involves its deterioration or improvement in health status. The idea of sick role reiterates Parsons' idea of the sick role in understanding health behaviour.

### **Theoretical models**

Theoretical models that have been used to analyse health seeking behaviour vary. The Health Belief Model and the Theory of Reasoned Action are some approaches

used in Social Psychology. The most prominent for Medical Sociology is the Health Care Utilization Model also referred to as the Socio – Behavioural Model by Andersen. For the purposes of this research, the Health Care Utilisation model and Good's (1987) Four A's will be used (Hausmann-Muela et al, 2003).

*The Health Care Utilisation Model.*

The health care utilization model, attributed to Andersen and Newman, was first developed in the 1960s and has since gone through various modifications. Its main aim is to assess an individual's behaviour towards the acquisition of health services. Three major characteristics are considered (Andersen and Newman, Undated):

*Predisposing factors* which refers to those factors that consider the socio – cultural features of a person prior to their ill – state. These sociocultural features are categorised into social structure, health beliefs and demographic characteristics. Social structure includes culture, social networks, social interactions, occupation, ethnicity and education. Health beliefs include values, attitude, and people's perception about a prevailing health care system. Demographic characteristics include gender and age.

*Enabling factors* are concerned with the logistics that determine the provision of care. Enabling factors are broken down into personal or family characteristics, community factors and significant factors. Personal or family characteristics include means and knowledge to access health care services, health insurance, travel, and income, quality of social relationships and source of care.

*Need factors* are categorised into perceived need and evaluated need. Perceived needs border on appreciation of treatment and its subsequent action of compliance to drug regimen. Evaluated need is concerned with the amount received from a care provider.

Discussing Andersen and Newman's framework of health care utilization services, Hausmann – Muela et al (2003) note treatment options in addition to the three factors discussed earlier. The treatment options discusses the use of home – made solutions, pharmaceutical products from pharmacies, over the counter drugs from chemical shops, traditional healers and orthodox care products and facilities (Weller et al, 1997 as cited in Hausmann-Muela et al, 2003).

This model had the advantage of facilitating the identification of predisposing factors to health seeking behaviour and further deliberating on accessibility issues.

#### *The Four 'A's.*

Good (1987) has also suggested the model of the four 'A's where health seeking behaviour, mainly medical pluralism is determined by availability, accessibility, affordability and acceptability. Availability borders on the geographical distribution of health facilities, the use of pharmaceutical products and herbal remedies. Accessibility assesses the difficulty with which transportation facilitates the acquisition of health services. Affordability refers to the economic costs incurred in obtaining health services. Acceptability goes to deal with the socio – cultural barriers that are considered in the decision to access treatment. The four A's model had the advantage of facilitating the identification of focal hindrances for comprehensive treatment when analyzing plural medical behaviour (Good, 1987 as cited in Hausmann-Muela et al, 2003, Masud, 2005).

## **Exploring health seeking behaviour**

Sara MacKian (2002) asserts that health sensitization programmes have generally been built on the notion that health awareness contributes to a positive orientation towards health behaviour. She however notes that, there is a growing perception that health education alone is insufficient in inducing positive health behaviour. Health seeking behaviour can be examined from two approaches: firstly, the utilization of health cares and secondly, the process of illness response. For discussion purposes, both levels of approach are holistically influenced by a variety of reasons, such as sociocultural factors, demographic features, organizational factors, and socioeconomic, and accessibility factors. These are discussed shortly.

## **Determinants of health care seeking behaviour**

### **Sociocultural factors**

The element of patriarchy is one of the factors that bar women from seeking prompt health care. Among the Karnataka of India, Sen, Iyer & George (2007) note that women and girls have to bear health rationing due to insecure household economic status. Gender is a more important discriminator among women. Girls and women were more likely never to be treated for long term illness. Locally among the Karnataka, pregnancy is likened to a time when a woman accumulates dirty and bad fluids in her body. Delivery is seen as a ritually polluting process that calls for a prolonged period of cleansing and penance. Therefore, elders enforce restricted mobility, diets and fluid intakes to purge the new mother. These systems interfere with the identification of post-partum complications such as haemorrhage. Women with poor status in Karnataka society endure high levels of pain, discomfort and

humiliation. There are no reasons for protesting because of the embarrassment surrounding women's bodies and the "normalization" of many women's reproductive morbidities (Sen et al, 2007, p. 689). In the case of men, long term ailments are treated since most men are likely to be household heads. Among the Kassena – Nankana in Ghana, gatekeeping mechanisms impede women's promptness in accessing care. This reflects the spiritual role of the household head and the prevalent economic authority husbands wield over their partners. Gender biases disempower women through unequal status and normative local traditions (Ngom et al, 2003; Sen et al, 2007).

In psychological cases (Roh et al, 2014), women commonly seek medical help than men. In as in gynaecological cases, however, behavioural norms demand discretion from women. This renders most women ashamed to receive care from male health workers in cases of child birth and post-partum complications.

Nayab (2005) has observed that accepting the symptom as part of womanhood is one of the reasons why women who contract Sexually Transmitted Infections (STIs) fail to seek medical attention. Women's socialization process has taught them that some disease symptoms are things that happen to women. Some women also claim they do not have time, reflecting the lack of importance given to some medical symptoms. Thus health behaviour is a combination of a woman's health world and her socio – economic and demographic background which determine her access to health care.

Also the duration a symptom is related to a woman's health care seeking behaviour. The duration of a symptom as in the case of gynaecological problems and by extension STIs have dire consequences for women's health. This usually influences

health seeking behaviour as the earlier help is sought by a woman, by extension, benefits her sexual partners. In addition, the perceived severity of a symptom can affect women's daily duties. Women are considered to have a conscious rate of health seeking behaviour if the manifest symptoms are so severe that they impede the performance of daily duties. Thus, health seeking behaviour is lowest for those who perceive a symptom as not severe (Nayab. 2005).

Men see immoderate loss of semen (Verma, Sharma, Singh & Pelto, 2003), through masturbation and regular intercourse as contributing to most sexual health dysfunctions. This thought impacts on care seeking behaviour as most men would prefer help from unqualified and untrained health providers. Also some men with sexual health problems seek help through their friends. This is to safeguard anonymity and confidentiality as well as avoid embarrassment. MacNaughton (2008) has also suggested that wives are a dominant factor to influencing health seeking behaviour among men.

People's health-seeking behaviour, is also influenced by their understanding and interpretation of the causes of their illness or disease. If a person is faced with a life threatening disease the obvious reaction is to understand and look for the cause of illness from various means available (Awasthi, Mishra & Shahi, 2006). When people accept the germ theory of disease causation, they exhibit a different attitude in their search for a cure. This behaviour is usually different from a disease attributed to a supernatural cause (Awusabo – Asare & Anarfi, 1997).

Also, people from the third world believe more in a supernatural health world. Explanations of disease from people from the advanced world emphasize the

individual and his natural world (Furnham, Akande & Bagume 1999 as cited in Awasthi, Mishra & Shahi, 2006). Since supernatural explanations have been given for diseases such as tuberculosis, guinea worm, cancer and HIV/AIDS, people tend to visit traditional healers and spiritualists. Diseases such as malaria, diarrhoea and chicken pox are readily accepted as a breakdown in bodily functions and hence sufferers visit the hospital or clinic to access treatment.

Furthermore, the lay theory of illness (Furnham, 1988; Helman, 1990 as cited in Awasthi, Mishra & Shahi, 2006) reveals that individuals usually have mental conceptions of illness. If the manifestation of a disease matches their fore representations, they tend to exhibit appropriate illness behaviour like seeking care and following up with a comprehensive treatment. Alternatively, if symptoms do not agree with the illness perception, it often leads to a delay in appropriate care seeking. This mismatch in belief also leads to wrong compliance to drug regimen and health proposals (Baumann & Leventhal, 1985; Turk, Rudy, & Salovey, 1985 as cited in Awasthi, Mishra & Shahi, 2006).

Karma as a unique Indian belief system teaches individuals to be temperate with sufferings. It also fortifies the individual with the psychological stamina. In addition, it gives a clearer perspective on the purpose of life. This orientation of Karma differs from the Western perception of disease causation (Awasthi, Mishra & Shahi, 2006).

### **Demographic features**

Another predisposing factor that determines health care seeking behaviour is age. Barman – Adhikari & Rice (2011) argue that young people especially delinquents are reluctant to seek help from traditional health providers. Among some youth, it is

perceived that sexual activities are a preserve for the married while premarital sex is a subculture of deviants. This idea prevents adolescents from accessing reproductive health care (Okereke, 2010). Rather, the internet has become one useful tool in engaging this segment of the population. Young people use the internet for sexual health knowledge including knowledge about HIV and other Sexually Transmitted Infections (STIs). They also discuss personal health problems and seek advice from this medium. As such, involvement in online social sites has prompted online health seeking behaviours and young people seem to have a degree of autonomy over their health issues. The reverse of the case is what Barua & Kurz (2001) found among married adolescent Indian girls in Maharashtra. Domestic chores, shielding of fecundity and silence due to discomfort arising from sexual health issues were the prominent problems determining illness behaviour among married adolescent girls. As reported,

If my wife ever falls sick... we take her to a private doctor. Her sickness does affect the daily routine of all the household members. Not only does her own work get affected but also work of the person who accompanies her to the doctor also gets affected. It also upsets our monthly budget, (Barua & Kurz, 2001, p. 56).

Girls who suffered from general illnesses like colds, coughs, fever with chills and headaches were availed medical treatment. On the other hand, those with gynaecological symptoms like menstrual problems, lower abdominal pain, vaginal discharge and burning urination hardly went for treatment because these complaints were seen as a threat to fertility which is held paramount in a woman's life. Husbands who influenced their wives' decision on health matters were mostly not convinced that gynaecological problems needed medical attention and most mothers – in – law often determined these decisions as the latter saw mild illness in their daughter – in –

law as a way of avoiding domestic chores. Few mothers – in – law were concerned about gynaecological problems as they saw it as a threat to fertility later in life. Thus girls lacked decision – making power and autonomy over their own health. Health seeking behaviour is only sought after consensus by husband and mother – in – law that a particular condition needed quick medical attention (Barua & Kurz, 2001).

Health seeking behaviour is also influenced by one's religious affiliation. Franklin, Schlundt & Wallston (2008) have discussed the Divine Provision factor as one of the means that influence people's health seeking behaviour. This factor measures the belief that God will provide good health. As such, an individual's health status is based on the belief that a person's health is part of God's plan. Therefore health issues are inevitable and should be left in the hands of God. It then follows that persons with this mental orientation about religion and health are less likely to seek medical attention promptly if faced with any disease or medical condition. Religious affiliation predicts the probability of seeking religious help. Sikh devotees were less likely than Catholics to accept help from a religious leader, argues Sood, Mendez & Kendall (2012). There are instances where explanations for illnesses are predominantly based on culturally endorsed beliefs such as evil spirits, astrology, or sins of the past birth as in the case of Karma beliefs. These explanations are ones that are available in the community and often suggested by relatives, faith healers, priests, astrologers and other significant others. Source of help is influenced by the explanations for the illness (Padmavati, Thara & Corin, 2005). Among the Kassena – Nankana (Ngom et al, 2003) who practice a variant of the African traditional religions, the household head mediates between the ancestral spirits and household

members. He is the mediator between the living and the dead and is considered the focal point of the compound hierarchical structure. Most major decisions are discussed with him as evidenced in the following quote: “in our custom, the leadership of the compound has been given by the gods and he must always be the one to give permission before anything can be done” (Ngom et al, 2003, p. 21). The compound head therefore functions as a gate – keeper in a variety of decisions particularly health and reproduction issues. The compound head plays a vital role because the Kassena – Nankana society believes that individuals fall sick because of disobedience towards ancestors. As such, any attempt to treat the sick must begin with a consultation with the Baga (traditional priest) who will determine if the sick should be treated with modern medicine or visit a traditional healer. This process of decision making delays the decision to access treatment in general.

A person’s level of formal education and location has also been discussed as one of the predisposing factors to health seeking behaviour. Individual and psychosocial elements are predominant in a person’s belief system. Illiterate women hold a firmer resolution in psychosocial, supernatural and environmental antecedents as compared to their literate counterparts irrespective of disease and illness. As well urban women readily accept disease factors related to the environment, and social milieu than rural women. Alternatively, rural women uphold supernatural causes of disease than urban women (Awasthi, Mishra & Shahi, 2006). Again, life circumstances and family background influence an individual’s level of education. In most cases when the literacy levels of the parents are low, the children are likely to have a comparative level of education. This suggests that they inherit the educational status of their

parents which in turn may impact negatively on their health behaviour. Higher educated people have better working conditions compared to the working conditions of lower educated individuals which tend to be worse. This affects their health status and health seeking behaviour. People with good education as well have good communication skills which are necessary for reporting health problems. When symptoms are better described, they help the doctor make good diagnosis and find a comprehensive treatment. Again, the highly educated are said to be more aware of their health and live consciously. They show a sense of heightened awareness for their body and their health status generally. Highly educated persons are thought to be proactive when it comes to preventive health. This is because they tend to have a good overview about modern treatment options. They also tend to be more careful in searching for the right therapy, and are likely to opt for more expensive treatment out of their own pockets. Less educated people tend to have little income and can only rely on treatment that is financed through the public health care provisions. Treatment seeking behaviour among the educated is also influenced by access to information. The literate are better informed and consider health knowledge as something important. Television, internet, radio and newspapers are some outlets of information meant to disseminate wholesome information on health. On the other hand these same outlets of information, meant to disseminate wholesome information have been used to jeopardise others' health especially when information given is wrong or prejudiced (Flandorfer & Flaiengenschnee, 2010).

### **Organizational factor**

Outwater et al (2001) also found out that Commercial Sex Workers (CSWs) sought treatment from multiple sources simultaneously. As a respondent explained: “there was a time when I suffered from a lot of venereal diseases. If not for the medicine from the hospitals, local herbs and local healer, I could not be like the human being you see now” (Outwater et al, 2001, p. 24). As such, treatment sources were varied from drug outlets such as pharmacies and chemical sellers, herbal medicine vendors, mission and government health facilities.

### **Socioeconomic and accessibility factors**

A major impediment to appropriate care seeking behaviour is the lack of finance to access health care (Akinawo & Oguntimehin, 1997; Nayab, 2005; Burton et al, 2011, Byrne et al, 2013 and King & Maman, 2013). The chemical sellers, pharmacies and herbal homes provide cheap medical services as compared to private health facilities. Burton et al (2011) further the argument that seeking healthcare at good hospitals with specialist care are often meant for persons with higher socioeconomic status. This suggests that treatment behaviour is dependent on preceding factors like disease syndrome, severity of illness, and the demographic attributes of the ill person. Adanu, Seffah, Darko, Anarfi & Duda (2008) contend that income level on its own does not affect health seeking behaviour.

Another barrier in health seeking behaviour is distance and access to the nearest health care facility (Byrne et al, 2013). Accessibility to health care delivery is a barrier in most mountainous and rural areas. To accompany a patient to the health

post comes at a considerable economic cost. The expenses involve a loss of family income and unexpected hospitality expenses.

Wood, Clark & Heidrich (2009) have identified agency issues and socioeconomic factors as some of the systemic barriers to accessing health care. Individual barriers include lack of knowledge of where to access help in the case of mental disorder. There is stigmatisation about mental health conditions, negative cultural perception, discriminatory behaviour towards persons with mental ill health and lack of consciousness. Lack of consciousness here suggests lack of knowledge about mental illness and lack of information on symptoms of mental illness.

### **Plural health behaviour / medical pluralism**

This current part of the literature examines the different forms of health provisions available to prospective health clients. Being humans with varied tastes and preferences, a similar behaviour is exhibited in following treatment or exhibiting appropriate health behaviour. In seeking treatment, some people exhibit plural medical behaviour in the sense that they access multiple forms of treatment with the bid to recover quickly and become well. In this case, health seekers shop from different health providers and follow different health practices.

### **Definition of medical pluralism**

Medical pluralism is defined as the use of multiple medical provisions involving both orthodox and herbal medicines among others as a means of complementing or increasing the efficacy of a chosen treatment. The multiple provisions include both conventional and Complementary and Alternative Medicine (CAM). Although western medicine dominates most areas of health practice, the science of

anthropology with respect to disease and medicine is disputing the dominant claims of western medicine. Even though orthodox medicine is common in most parts of the world, ancient medical systems have shown resilience in the upsurge of western medicine. As such, there is a fusion of ancient medical practice into western medicine. Therefore, people who opt for allopathic treatment still go in for other alternative forms of healing (Wade et al, 2008; Mishra et al, 2014).

### **Types of medicine**

The WHO (2001) details health provisions to include allopathic medicine, complementary/alternative medicine, herbal preparations and products, and traditional medicine as discussed shortly.

Allopathic medicine, (WHO, 2001) which involves a wide range of medical compositions is alternatively called western medicine, orthodox medicine, biomedicine, scientific medicine, or modern medicine. Allopathy is used in various modern hospitals that assent to scientific investigation and critical examination of medical history before treatment is given.

Complementary medicine or alternative medicines are terms used in place of traditional medicine (WHO, 2001). Complementary/alternative medicine involves the use of traditional medicine that may not be ingenious to a local community. This means the knowledge of such medical combinations might be borrowed. The terms “complementary” and “alternative” suggest these medical options are used in combination with allopathic medicine or as a supplement to allopathic medicine. Elsewhere, complementary/alternative medicine and allopathic medicine have similar

legal consideration. Thus, health professionals may combine the practice of complementary/alternative medicine and allopathy.

Herbal remedies are solutions or products obtained from herbs subjected to the conditions of “extraction, fractionation, purification, concentration, or other physical or biological processes” (WHO, 2001, p.1). These may be for instantaneous use or as derivatives for other herbal solutions. Herbal products also contain inert constituents, in addition to the active components. Herbal remedies may be prepared at home for consumption or prepared in large quantities by herbal centres (WHO, 2001).

Traditional medicine involves a plurality of health practices. It includes: “approaches, knowledge, and beliefs incorporating plant, animal, and/or mineral-based medicines; spiritual therapies; manual techniques; and exercises, applied singularly or in combination to maintain well-being, as well as to treat, diagnose, or prevent illness” (WHO, 2001, p. 1 & 2).

From a global perspective, the multifaceted dimension of the terminology “traditional medicine” and the array of actions it comprises do not facilitate its description from a singular point of view. Traditional medical knowledge may be bequeathed to generations. Most often, families specifically localize particular treatments. Traditional medicine may be included in the official curriculum of some universities. Though traditional medical practice may be restricted to some localities, it can be found as a form of medical practice in different parts of the world (WHO, 2001).

## **Systems of medical practice**

WHO recognizes Ayurveda, Chinese Traditional Medicine, Chiropractic, Homeopathy and Unani as the various forms of widespread medical systems. WHO (2001) discusses these systems as follows:

Ayurveda, a Sanskrit term, means “science of life”. It dates back to the 10<sup>th</sup> century BC, though its present – day outlook was formed in the period between 5<sup>th</sup> century BC and 5<sup>th</sup> century AD. The thought behind Ayurveda is from the Vedas sacred writings based on the theory of Panchmahabhutas. It teaches that the world view is comprised of five fundamental elements namely earth, water, fire, air, and sky (Ministry of Health and Family Welfare, Government of India, 1998 – 1999 as cited in WHO, 2001, p. 2). Again, there is a basic concord between the individual and his environment. This concord between the individual and his environment is recognized as a cosmic relationship. This means, one action impacts the other. Ayurveda goes beyond being regarded as a medical practice. It is regarded as a way of life. In dealing with diseases, Ayurveda is used as a preventive and curative means. It includes herbal remedies and medicinal baths. As a medical practice gaining popularity, it is widely used as a health system in Southern Asia, particularly Bangladesh, India, Nepal, Pakistan, and Sri Lanka (WHO, 2001).

Chinese traditional medicine is an ancient medical system which originated in the 8<sup>th</sup> century BC. Treatment is holistic. It is based on the patient and his symptom manifestations, often expressed in the terms of a fusion between Yin and Yang. The components of Yin include femininity, earth and cold whiles Yang comprises masculinity, sky and heat. Yin and Yang control the five elements of wood, metal,

water, earth and fire which constitute the universe. Chinese traditional medical practice aims to influence the components of Yin and Yang through the 12 meridians that transmit power and vitality to the human anatomy. Like Ayurveda, Chinese traditional medicine also has the property of advancing health. Chinese traditional medicine has both curative and preventive properties. Chinese traditional medicine comprises an array of customs involving acupuncture, herbal remedies, manual therapies, exercises, breathing techniques and diets (Liu, 1999 as cited in WHO, 2001). Unlike allopathic medicine, Chinese traditional medicine does not support surgical operations. Acupuncture, a variant of Chinese traditional medicine is a widespread option practiced in almost every part of the world (WHO, 2001). Chiropractic wellness, as the name is widely used, is credited to the work of Daniel David Palmer, a practicing magnetic therapist of Iowa in the United States of America. It came into existence in the 19<sup>th</sup> century. Chiropractic wellness is premised on the principle that there is a relationship connecting the spine and the nervous system. This relationship induces self – healing capacities within the body. Chiropractic teaching curricula are accredited and acknowledged by the World Federation of Chiropractic. This recognition is based on the conditionality that the international standards of education and basic four – year full-time university-level education are obtained. Chiropractic is practised in most parts of the world (WHO, 2001).

Hippocrates (462–377 BC) was the first Greek scholar to have conceived of homeopathy. However, the German physician, Friedrich Samuel Hahnemann (1755–1843), is credited with establishing the fundamental philosophy guiding the practice

of homeopathy. The fundamental principles include the rules of similarity, direction of cure, principles of single remedy, the theory of minimum diluted dose, and the theory of recurrent or persistent disease (Ministry of Health and Family Welfare: Government of India, 1998 - 1999 as cited in WHO, 2001).

In the practice of homeopathy, diseases are dealt with using solutions that would stimulate symptoms in an otherwise healthy body. These symptoms are similar to the disease in question. Therefore, instead of fighting the disease out rightly, medical remedies are meant to induce the human anatomy to attack the ailment. Homeopathy gained popularity in Europe during the second half of the 19<sup>th</sup> century. It is widespread in Asia and North America. Homeopathy as a medical system has been nationalized in countries like India, Mexico, Pakistan, Sri Lanka, and the United Kingdom (WHO, 2001).

Unani, also known as Arabic medicine is attributed to Hippocrates (462–377 BC). Its philosophy is based on theories of the four bodily fluids namely blood, phlegm, yellow bile, and black bile. Scientists like Galen (131–210 AD), Rhazes (850–925 AD), and Avicenna (980–1037 AD) dominated the basis for Unani and built its form. Unani is derived from a plurality of traditional medical systems among the Chinese, Egyptians, Indians, Iraqis, Persians, and the Syrian Arabs (Ministry of Health and Family Welfare, Government of India, 1997 as cited in WHO, 2001).

### **Reasons for medical pluralism**

This segment of the literature review would examine the factors that contribute to plural medical behaviour or medical pluralism. Several studies (Shaikh et al, 2008; Weerasinghe & Fernando, 2009; Afolabi et al, 2013; Waterworth et al, 2016) have

been conducted to investigate the reasons for which people exhibit plural health behaviour. Shaikh et al (2008) have identified socio-demographic characteristics like age, sex level of education, economic issues, cultural factors, social and environmental circumstances, proximity factors and features within allopathy as factors that inform plural health behaviour.

One of the physical conditions that contribute to plural health behaviour is accessibility or distance from orthodox medical facility and non-availability of medicines. According to Shaikh et al (2008), people who are ill consider other alternatives aside hospitals and modern medicine as options to health care. As found in rural Pakistan, modern medicine is known; however, faith healing and traditional methods are predominant, as well. Faith healers use the Du'a – a form of prayer to exorcise the ill person seeking health advice. The ill person is given an amulet or charm which contains Koranic verses for use. Others rely on homemade remedies handed down by family elders and ancestors. A respondent reported, “We go to khalifa [the faith healer] mostly because the health center is located far away from our village, and the government dispensary is open during fixed hours. If it is open, medicines are not available” (Shaikh et al, 2008, p. 750). Thus means of transportation and availability of medicines to a large extent determine whether people would participate in allopathic health care.

Secondly, a cultural factor such as the acceptability of local treatments makes alternative treatments a ready option for people. Local treatments as treatment option is a practice ingrained in people's psyche which is bequeathed to successive generations without questions, for which reason people would consider herbal

preparations even when allopathic health care is available. Shaikh (2008) mentions the role of the “hakeem”, who is a Greco-Arab healer. The hakeem cures patients with *desi* (indigenous) medicines. “Some get well from the hakeem’s medicine and some do not, but people still prefer to go to him. This type of approach has existed from the beginning as a tradition,” a respondent reported (Shaikh et al, 2008, p. 750). Elsewhere, Waterworth et al, 2016 identified culture as an integral factor that influences a person’s health behaviour. Waterworth, (2016, p. 59) reports:

Interviewer: What influences your health behavior?

It’s culture; it’s tradition; it’s identity; its being *moorditj* [Indigenous Australian word meaning strong], and knowing who you are, this is what is the most important when it comes to health things.

Among the Sri Lanka, an institutionalized dual medical system allows for the practice of Ayurveda and orthodox medical prescriptions (Weerasinghe & Fernando, 2009). Weerasinghe and Fernando (2009) claim a decline in the patronage of Ayurveda. The low patronage of Ayurveda has been attributed to reasons such as the availability of orthodox medicines, familiarity with Western medicines and absence of capable Ayurveda health professionals. Ayurveda medicines are also expensive and of compromised quality. The transformation in the lifestyle of villagers who rely on Ayurveda as a means of cure is contributing to its low patronage. Persistently, however, there are symptoms such as fractures, snakebite, and paralysis where most Sri Lankans still subscribe to Ayurveda treatment. Thus, cultural conviction on one hand, and institutionalized plural medical systems on the other are significant means of determining plural medical behaviour or inducing medical pluralism.

A health provider being male or female is a determining element when it comes to which health facility to consult (Shaikh, 2008; Sen et al, 2007). In a rural setting, women generally prefer to visit or consult a health centre where there are female health care providers for the obvious reasons of being able to relate to them easily. One respondent reportedly said, “The majority of the people prefer to get treatment from government health facilities and AKHSP. However, when there is a lady doctor in [the] government hospital, too, our women can go to her easily” (Shaikh et al, 2008, p. 750). Further, gender biases devalue and stigmatize women’s experiences of health seeking behaviour. These understandings restrict women from accessing health care and adhering to some health and diet restrictions. These inhibit health care seeking behaviour.

Economic reasons or affordability are also one of the factors for which people exhibit multiple health behaviour. On a large scale, researchers (Elsevier, 1999; Shaikh et al 2008; Weerasinghe & Fernando, 2009; Waterworth et al, 2016), argue that people widely practice self-medication because they cannot afford the services from an allopathic health provider. In some instances, people get the medications on credit because there is no money to pay for orthodox health services. For instance in Uganda, malaria in pregnancy is a silent killer because the cost of orthodox health services is a barrier in addition to the erratic drug supply. Women therefore treat themselves for malaria with local herbs and drugs bought from shops. Unemployment, impact of the justice system and incarceration are contributory factors that compromise health behaviour among men. A further discussion of economic effects on plural medical behavior is where Churchill (2008) notes that

health behaviour is dependent on whether one is health insured or not. Usually, people use public health insurance as a means of getting around the increasing cost in health care.

The nature of orthodox health care services has also been considered as one of the factors that contribute to plural medical behaviour. Afolabi et al (2013), relate how students in a university community decline the use of the university community's hospital. Students rather conferred with their peers in health related academic disciplines for help. Others visited pharmacies while some rejected allopathic medicine due to religious convictions. Cost of care, prolonged waiting time, hostile attitude of healthcare workers were some of the deterrents of utilizing orthodox medical care. Waiting time, hostile behaviour of health care providers and manifestations of disease symptoms were some determinants of care seeking behaviour.

### **Sources of health care delivery in Ghana**

The health care delivery system in Ghana (MOH, 2007) is manned by the interests of various stakeholders. The Ministry of Health (MOH), Ghana Health Service (GHS) and the Christian Health Association of Ghana (CHAG) are some stakeholders in the health sector of Ghana. Other regulatory bodies that ensure authentic medical practice include the Ghana Medical Association (GMA), Ghana Registered Midwives Association (GRMA), Private Hospitals and Maternity Homes Board (PHMHB), Society of Private Medical and Dental Practitioners (SPMDP) and the Teaching Hospitals. These regulatory bodies ensure general safety of the public.

The Ghana Health Service (GHS), a major stakeholder in health delivery monitors health care at various levels. These include the community, sub-district, district and regional levels. Some of its interventions are the Expanded Programme on Immunization (EPI), Tuberculosis control (TB), malaria, Human Immune – deficiency Virus/Acquired Immune Deficiency Syndrome (HIV/AIDS), nutrition among others. It also manages communicable diseases including neglected tropical diseases like Buruli Ulcer, Leprosy or Hansen disease, Lymphatic filariasis, Onchocerciasis, Rabies, Schistosomiasis and Soil – transmitted helminthiases among others. Some non – communicable diseases managed are diabetes and hypertension (MOH, 2007; WHO, 2016).

Health institutions working under CHAG mainly supplement the endeavours of the government to sustain the general health of the public. Member institutions operating under CHAG are mostly situated in deprived areas with some rendering informal services in urban slums. They are also strategically placed to provide subsidized services to the less privileged and relegated persons of society. This is done in accordance with the healing ministry of Jesus Christ. CHAG institutions constitute about 20% of the health facilities in Ghana (MOH, 2007; Sagoe, 2015).

There are a few teaching hospitals like the Korle – Bu Teaching Hospital (KBTH) in Accra, which provides tertiary health care for the people of Ghana and serves as a teaching facility for the University of Ghana Medical School. Komfo Anokye Teaching Hospital (KATH), located in Kumasi, also renders specialist clinical care services in addition to training under graduate and post graduate medical students from the Kwame Nkrumah University of Science and Technology. KATH also

carries out research into endemic health issues in Ghana. The Tamale Teaching Hospital (TTH) also caters for the medical teaching needs of the University of Development Studies. Its main preoccupation is to build a substantive capacity for tertiary and teaching activities. Additionally, the hospital's objective is to improve the standard of health care within the area. Finally, it is to offer affordable referral services by proactive health staff who are self – motivated and conscious of health needs in the area (MOH, 2007).

There are also Psychiatric Hospitals located in Accra, Pantang and Ankaful that take care of the psychiatric needs of people. The Nurses' and Midwives' Council (NMC) further ensures authentic nursing practice in Ghana. The Ghana Medical Association and the Ghana Dental Association are charged with the prescription, development and enforcement of appreciable quality in allopathic medicine and dentistry to ensure general safety of the public respectively (MOH, 2007).

The Pharmacy Council is charged with guaranteeing the safest form of pharmaceutical practice to the public. Additionally, the Council in collaboration with local bodies and international pharmaceutical bodies promote the efficacy of pharmaceutical products and ensure reasonable medicine consumption among the general public (MOH, 2007).

The Traditional Medicine Practice Council (TMPC) is mandated to check the use of traditional medicine in Ghana. According to the WHO, the Medical and Dental decree of 1972 and the Nurses and Midwives decree of 1972 makes provision for indigenes of Ghana to practice traditional medicine. However, they are restricted from practicing life – endangering procedures to the approximately 70% of the

general public who rely extensively on traditional medicine as their major form of healthcare (WHO, 2001; MOH, 2007).

Sagoe (2015) notes that health services in Ghana include contributions from state coffers, private, traditional and Non – Governmental Organizations (NGOs), civil society and community groups. The hierarchy of the health services is organized into five tiers namely national, regional, district, Sub-district and Community Health and Planning Services level - CHPS Zones who are to deliver health at the doorsteps of remote and unreachable areas with appalling infrastructure.

The Ghanaian health care delivery system also comprises a large informal sector of traditional medical practice, pharmaceutical and chemical activities. The traditional medical practitioners run herbal hospitals and sell drugs in vans circulating their products in most inaccessible areas. Pharmacies and chemical shops are spread all over Ghana. They sell Over – The – Counter (OTC) drugs to the public (Sagoe, 2015).

Within the private sector, there are two types of health providers namely: the private-not-for-profit and the private-for-profit categories. The not-for-profit is of two categories involving faith based providers and Non – Governmental Organizations (NGOs) in health. Some preoccupations of NGOs in health include information dissemination, educational campaigns, and Sexual and Reproductive Health. There is also Maternal and Child Health (MCH), Family Planning Services, HIV/AIDS prevention campaigns, community mobilization for health education and preventive services, potable water provision as well as effective sanitation provision services. Gender empowerment programmes, poverty reduction and food security, aid services

during catastrophes, training and research are among the lot of services offered (Sagoe, 2015).

Private health providers render services including allopathic health provisions, medical, nursing, midwifery, medical laboratory services, drug retails including pharmacies, chemical sellers' shops, and traditional medicine vendors among others. Most of these drug outlets are manned as sole proprietorships operating in the major cities. Complementary and Alternative Medicine is also gradually gaining publicity as Eastern medical practices are gaining popularity in Ghana (Sagoe, 2015).

### **Funding of health services**

The Public health sector, Sagoe (2015) argues, is predominantly funded by State budget allocation 45% - 55%, bilateral and multilateral foreign donors constituting 25% - 35%, financial credits range between 7%-13%, and user fee charges constituting public supported health insurance of 15%. Other sources of funding are out – of – pocket from consumers of medical services and health insurance providers. There are private health insurers and government sponsored health insurance.

## **Malaria**

### **Background and discovery**

Malaria is a parasitic disease caused by the protozoan parasites belonging to the genus Plasmodium (Cox, 2010). It is transferred to humans by the female Anopheles species mosquito. It is a relatively old disease condition and early references to malaria occur from different sources. These sources include a document from China

originating as early as 2700 BC. There are references from clay tablets coming from Mesopotamia around 2000 BC, Egyptian records from 1570 BC and Hindu texts from the 6<sup>th</sup> century BC.

Early Greek scholars, like Homer in 850 BC, Empedocles of Agrigentum in 550 BC and Hippocrates in 400 BC, recognized the features of appalling health, malarial fevers and swollen spleens present in residents of swampy areas. Over 2500 years, there was a persisting idea suggesting malaria fever resulted from stench arising from swampy areas. There was also the wide held belief that malaria came from spoiled air, hence, its Italian derivation mal'aria. This fact has been disputed in academic circles (Cox, 2010).

The discovery of bacteria by Antoni van Leeuwenhoek in 1676, and the subsequent proof of microorganisms as the cause of contagious diseases and the evolution the germ theory of disease by Louis Pasteur and Robert Koch in 1878-1879 intensified the queries for the origins of malaria. In 1880, Charles Louis Alphonse Laveran contributed the discovery of parasites to the origins of malaria. Ronald Ross in 1897 implicated mosquitoes as the causative organisms for avian malaria. Human malarial discoveries are attributed to the Italian scientists Giovanni Battista Grassi, Amico Bignami, Giuseppe Bastianelli, Angelo Celli, Camillo Golgi and Ettore Marchiafava between the period 1898 and 1900 (Cox, 2010).

Present day knowledge of the malaria parasite began in 1880. William MacCallum in 1897 discovered the parasite's sexual stages' development in the blood in infected birds with a related haematozoan known as the *Haemoproteus columbae*. In the same year, Ronald Ross, mentioned earlier, clarified the complete transmission cycle in the

culicine mosquitoes and birds infected with *Plasmodium relictum*. A year later, in 1898, the Italian scientists Giovanni Battista Grassi, Amico Bignami, Giuseppe Bastianelli, Angelo Celli, Camillo Golgi and Ettore Marchiafava concluded that human malaria was caused by mosquitoes, specifically by the anopheles. In 1948, Henry Shortt and Cyril Garnham came to a conclusion that malaria parasites mature in the liver before entering the blood stream. Wojciech Krotoski, in 1982, concluded the final stage within the life – cycle evolution of the malaria parasite (Cox, 2010).

### **Global disease burden**

Malaria is a disease present in most parts of the world. Recent statistics from the WHO, (World Malaria Report, 2015), recorded 214 million new cases of malaria globally 2015. African alone accounted for 88% of the global incidence. South-East Asia and the Eastern Mediterranean Region recorded 10% and 2% of cases respectively.

In 2015, an estimated 438,000 malaria deaths were recorded worldwide. Africa recorded 90% of these deaths. The South-East Asia Region recorded 7% while the Eastern Mediterranean Region recorded 2%. It is also estimated that between 2000 and 2015, there was a global decline in malaria cases by 37%. Africa recorded a fall of 42% in malaria incidence. Within the same period, malaria death rates fell by 60% at the global level and by 66% in African (World Malaria Report, 2015).

In spite of the appalling trends in global infection, there have been some significant declines in the disease burden. The report shows that since the year 2000 malaria mortality rates has fallen by 72% in the Americas. The Western Pacific Region also recorded a decline of 65%. The Eastern Mediterranean Region declined by 64%, and

that of the South-East Asia Region by 49%. The European Region has recorded a zero incidence in 2015 (World Malaria Report, 2015).

According to the report, children under five are the most vulnerable to infection and death resulting from malaria. In 2015 alone, the statistics suggests that malaria killed approximately 306,000 under-fives at the global level. Of these, 292,000 children were from Africa. Between the period 2000 and 2015, the child mortality arising from malaria was 65% globally. In Africa, childhood malaria mortality was 71%. Thus, there are unevenness in the report suggesting success in some regions and failures in other areas (World Malaria Report, 2015).

### **Malaria in Ghana**

A careful analysis of the global disease burden reveals that malaria remains a major public health issue in sub – Saharan Africa, Ghana inclusive. In Ghana, the 2014 Ghana Demographic and Health Survey (GDHS) report revealed a reduction in the statistics by 35% from the earlier 3,256 infections in 2011 to 2,200 infections in 2014. 8% of children between the ages of 6 – 59 months have a low haemoglobin levels which is not more than 8.0 g/dl. There is a 36% incidence of malaria affecting children between the ages of 6 – 59 months. The most vulnerable groups to the high incidence of malaria are expectant mothers and children below the age of five. Ghanaians have some knowledge about the insecticide treated net as 68% of Ghanaians own the insecticide treated net. This figure is an increase over the 2003 (GDHS) level of 18%. However, malaria is recorded among the top ten causes of death in Ghana accounting for more than 20% of child mortalities. Statistics from the National Malaria Control Programme reveals more than 3.2million malaria

incidences are reported annually. This leads to approximately 38,000 malaria mortalities within the country (Binka et al, 1994 as cited in Agyeman – Budu et al, 2013; GDHS, 2014; WHO, 2015).

Furthermore, the National Malaria Control Programme (NMCP) recognizes a possible increase in the incidence of malaria in the Western Region since “galamsey” (local reference to small scale mining) and illegal mining activities have left deep trenches in the mining areas. The statistics show that Western Region is one of the highly endemic areas affected by malaria. 36 out of 100 children below the age of five have contracted the malaria parasite in their blood. The intended resolution of this problem is to embark on a large scale distribution of Long Lasting Insecticide Bed Nets (LLIN) as a preventive measure (WHO, 2015).

### **Types of malaria**

Okeke and Okeibunor (2010) have discussed how malaria is identified by its severity and intensity. In Rural South East Nigeria, there are two types of malaria namely “*Iba nkiti*” which is what Webberley (2016) refers to as uncomplicated malaria. The second type of malaria is “*Iba ocha na anya*” which is the yellow variant of malaria due to the manifestations of yellow eyes considered a serious type of malaria or what Webberley notes as severe malaria.

In rural Ethiopia, malaria is referred to as “busaa”. Two types of busaa include mild busaa and severe busaa locally described as “busaa isa sammuu nama koru (nama maraachu)” (Deressa and Ali, 2009, p 259). Severe malaria is also referred to as cerebral malaria

## Causes of malaria

Malaria is transmitted by bites from the female anopheles mosquito. It infects the body with the Plasmodium parasite (Webberley, 2016). The anopheles mosquito is the only mosquito that causes malaria. On record, there are no less than 100 types of plasmodium parasite infecting species. Five types of the plasmodium parasites, according to Webberley (2016), that affect human beings are:

- Plasmodium falciparum, which is found mostly in tropics mainly Africa. This strand is noted to multiply quickly and can stick to the lining of the blood vessels within the brain. This results in severe cerebral malaria.
- Plasmodium vivax usually found in Latin America, Africa, and Asia, is predominantly spread due to the density of population in the third world. This strand possesses a lurking liver stage that can resurface and attack the blood and subjugate it months or years after. This results in a relapse in many patients frequently resulting in chronic health conditions.
- Plasmodium ovale is found mostly in West Africa. Its biology and morphology is similar to the Plasmodium vivax. Unlike the Plasmodium vivax, plasmodium ovale can affect individuals with a negative Duffy blood group, as found among inhabitants of Sub – Saharan Africa. This accounts for the reason why Plasmodium ovale is common in most of Africa.
- Plasmodium malariae is found in most parts of the world. It is the only plasmodium specie possessing a three-day cycle. With such short cycle development, it can cause persistent infections that stay over a person's existence result in the nephrotic syndrome.

- Plasmodium knowlesi is found in Southeast Asia. It is connected with the macaques; a variant of monkey. This strand has a 24 hour cycle, shorter than that of the plasmodium malariae. It multiplies quickly as soon as a patient is infected. This results in a severe form of malaria.

There are widespread perceptions about the causes of malaria aside the bite from mosquitoes. According to Idowu, Mafiana & Adehanloye (2008), malaria is also acquired by engaging in strenuous activities and overexposure to the sun. Consumption of contaminated drinks and food cause in addition to excessive heat coming from the fire used in cooking gari makes one susceptible to the infection of malaria. Malaria in children is due to playful activities in the sun and not bite from mosquitoes. Okeke et al (2006) also confirms heat from the sun as a possible cause of malaria. Consumption of oily food substances, rain, and hard work are some causes of malaria. Sharing of drinking cup, according to some traditional healers causes malaria as evidenced in the following: "... how it is transmitted is that if you use the same cup with somebody who has Iba (malaria) to drink water, you will be infected" (Okeke et al, 2006, p. 494)

### **Symptoms of malaria**

Uncomplicated malaria and severe malaria have different symptom manifestations. Uncomplicated malaria is when delicate organs like the liver are unaffected in laboratory examinations for the query of malaria. Symptoms of uncomplicated malaria include colds, chills, fever, headaches, vomiting and some mild forms of convulsion in children. There may also be occasional sweats and fatigue. Uncomplicated malaria can become severe if not treated properly. Most often,

persons in endemic areas tend to self – treat uncomplicated malaria. Severe malaria, on the other hand, is accompanied by laboratory evidence of delicate organ malfunctions. Severe malaria is capable of being fatal if left untreated. Some of its symptoms are fever and chills, impaired consciousness, prostration (adopting a prone or prayer position), multiple convulsions, heavy breathing and respiratory distress. There may be abnormal bleeding and signs of anaemia, clinical jaundice and evidence of delicate organ malfunction (Webberley, 2016). Elsewhere, (Esse, Utzinger & Obrist, 2008) noted symptoms of malaria to include loss of appetite, yellow eyes, yellow urine, abdominal pains, diarrhoea and fever as some common causes of malaria. Also, weight loss, white palms, fatigue, body pains and nausea are some additions to the symptoms of malaria. Deressa & Ali (2009) have also recorded the symptoms of malaria as described by a respondent: “If the body is hot, headache prevails, a patient is thirsty and drinks lot of water, back pain occurs, and when the body is chilly, we then recognize that the illness is due to malaria” (p. 259).

### **Treatment of malaria**

According to the treatment guidelines suggested by the WHO (2015), all instances of suspected malaria must be confirmed using a parasitological test (microscopy or Rapid diagnostic test (RDT). The quality of the test is checked by means of microscopy and RDT. The treatment of uncomplicated malaria in children and adults involves any one of the following artemisinin-based combination therapies (ACT): artemether and lumefantrine, artesunate and amodiaquine, artesunate and mefloquine, dihydroartemisinin and piperazine, and artesunate and sulfadoxine–pyrimethamine (SP). However, expectant mothers in their first trimester do not take the ACTs.

Traditional medicines have also been used to treat malaria due to the problems of drug resistance and the inability of poor people not able to afford and access potent antimalarial drugs. Traditional medicines have been in use for over a thousand years. They are the source of the artemisinin and quinine derivatives that are used for orthodox antimalarial (Willcox & Bodeker, 2004).

According to Deressa & Ali (2009), in some remote areas of Ethiopia, garlic, ginger and leaves of local plants like *hargisaa* and *irretti* are the first response to malaria illness. These substances are mixed with water and given to the patient to reduce the symptoms of vomiting and feverishness. If the patient's condition does not improve, it may be decided to visit a health facility.

In Nigeria, Muanya (2012) has noted the efficacy of *Momordica charantia* (bitter melon), *Momordica balsamina* (balsam apple), *Ageratum conyzoides* (goat weed), and *Diospyros monbuttensis* (Yoruba ebony or walking stick ebony) in the treatment of malaria that have developed drug resistance.

Esse et al (2008) have noted that in Cote D'Ivoire, malaria known as 'djekouadjo' can be treated with analgesics and antipyretics. Some of these include acetaminophen, aspirin, combined with antimalarial like chloroquine and amodiaquine. Some herbal remedies comprise of neem tree leaves (*Azadirachta indica*), guava (*Psidium guajava*) and papaya (*Carica papaya*). Some other potent herbal teas are made from acacias' leaves and barks (*Cassia siamea*).

In Tanzania, pawpaw leaves and *Artemesia afra* presumed to have antimalarial components are used to treat malaria (Nsimba & Kayombo, 2008). Among the

Maasai, the primary care of malaria is the administration of herbal drugs used to cleanse the body off malaria (Strang & Mixer, 2015).

In Ghana, Yakubu (2006) notes the use of the plant Nibima for the cure of malaria. In Twi, it is referred to as “Nibima”, the Ewes refer to it as “Kadze” and Hausa’s call it “Gangnamau”. The root extracts from “Nibima” are used to produce the local product for malaria treatment. Also grounded green pawpaw leaves, mixed with water and strained or boiled leaves from the neem tree are some local remedies for treating malaria. The general belief is that efficacy lies in the bitterness of the leaves. The literature goes to suggest that there are modern and traditional means of treating malaria in different localities.

### **Interventions in malaria treatment**

The National Malaria Control Programme in Ghana oversees the management of malaria. Its effort to halt the spread of malaria in Ghana started in the 1950s. Its objective was to reduce malaria to an insignificant public health issue. It became evident that malaria could not be solely managed by the singular efforts of the formal health sector. Thus various plans were put in place with the concerted efforts of other health related sectors (Ghana Health Service, 2015).

Some of the strategies involved residual insecticide spraying against adult mosquitoes, large scale chemoprophylaxis with Pyrimethamine medicated salts and upgrading of drainage systems. Ghana then adopted the Roll Back Malaria (RBM) campaign in 1999 and planned a strategic framework to govern its execution. The Ghana RBM’s objective was to strengthen health services through plural and inter-sectorial collaborations. This was to make curative and preventive strategies

widespread. The objective was to reduce malaria deaths by 50% by the year 2010 (Ghana Health Service, 2015). To realize this goal, four major procedures were adopted:

- Promoting multifaceted preventions including the recommendation of treated bed nets use; chemoprophylaxis during pregnancy and cleaning of environment.
- Improving malaria incidence care from individual households to health facility level;
- Encouraging practical research to generate interventions which are efficacious and
- Finally to improve collaboration among all stakeholders at the various levels (Ghana Health Service, 2015).

Although Ghana has made progress with its implementation of the National Malaria Control Programme (Ghana Health Service, 2015), the efforts are still inadequate. The State was rolling out a malaria control programme aimed at reducing malaria incidence and deaths by 75% by the year 2015. This was in accordance with the objectives of the Millennium Development Goals to be realized through a comprehensive health sector improvement, and increased strategic speculations in malaria control. The access to treatment and prevention of malaria coverage was going to be widened. The main aims of the strategy have been that:

- all households should own not less than one Insecticide Treated Net (ITN)
- not less than 80% of the general population should sleep under ITNs

- more children under five years of age and expectant mothers would be encouraged to use the ITN. The target is to increase ITN use from current levels to 85%.
- all expectant mothers would receive at least two doses of the Sulphadoxine-Pyrimethamine (SP) under Direct Observation Treatment (DOT).
- there would be mass indoor residual spraying.
- Artemisinin – based Combination Therapy (ACT) would be adopted as the first line of treatment and 90% of persons infected with uncomplicated malaria will be treated appropriately.
- community-based treatment will be made available for uncomplicated malaria
- majority of caregivers would be able to recognize the onset of malaria and 90% of children under five with fever will have ACT administered to them within 24hours (Ghana Health Service, 2015)

In terms of funding, the Government of Ghana receives aid from the Global Fund to support activities of the National Malaria Control Programme (NMCP). The NMCP is also supported by World Health Organization (WHO), United Nations International Children's Emergency Fund (UNICEF), United States Agency for International Development/PMI (USAID), Department For International Development (DFID, UK), in the implementation of its activities (Ghana Health Service, 2015).

## CHAPTER THREE

### METHODOLOGY

This chapter describes the methodology of the study. It describes the study design, the study area and setting where data was collected from. The population, sample technique, instrumentation, pretesting, issues of validity and reliability and data collection procedure are also presented in this chapter. The latter part of the chapter expounds on technique for data analysis and ethical considerations.

#### **Research design**

The definition of the research design is quite varied in terms of scope. In some studies it refers to the 'entire research process, from conceptualizing a problem to the literature review, research questions, methods, and conclusions, whereas in another study, research design refers only to the methodology of a study (for instance, data collection and analysis)' (Conrad & Serlin, 2011). The research design of this study delimits itself to all elements enjoined in data collection and analysis. In other words, it concentrates on the strategy of enquiry that moves from the underlying assumptions of the methods and data collection (Myers, 2009). Hence the design here was concerned with why the researcher collected the type of data she collected, what data was collected, where the data was collected and how they were analysed to answer the research questions. As such, and for the above broad considerations, the application of the survey approach which was deemed as an appropriate design for quantitative research was used. This design basically underpins the theory of deductive approach to research which this study could be classified. This is because

the subject of interest generally is already an existing phenomenon and has had some research attention and various theoretical models have been developed for its purpose and development. The peculiarity of this research lies in its empiricism in a local urban albeit of low social class. The investigation in a local context in the chosen geographical setting simply goes to corroborate or otherwise various perspective on the subject and again test the applicability of the theoretical model in the context.

### *The Survey Approach*

Medical researchers usually employ surveys to study the spread, patterns and trend of diseases and observation of health systems over time. Opinion polls make use of survey methodology to produce objective results. Essentially such exercises mainly involve the admittance of a fair representation of the population into the sample, and subjects of investigation usually give an overview of the situation with a particular phenomenon, rather than an in-depth description of the situation. This study used the KAP Survey. KAP is a standard term which stands for Knowledge, Practice and Attitude. The term 'knowledge' is implicitly used as an alternative for awareness. The terms 'knowledge' and 'awareness' are also used interchangeably. The term 'attitude' is used to refer to a manner of thinking and 'practice' refers to the actions related to health care seeking behaviour (Hausmann-Muela et al, 2003). The technique adopted was the quantitative study pattern. Essentially it employed a cross-sectional study approach, because in order to find out about knowledge about malaria, attitude towards health seeking behavior, treatment and practices, among others, a cross – section of the residents of the target population, large enough, need to be involved. Studies by Malik, Hanafi, Ali, Ahmed and Mohamed (2006) on

Treatment-seeking behaviour for malaria in children under five years of age in Sudan used cross-sectional surveys. Another study by Ndyomugenyi, Magnussen and Clarke (2006) on malaria treatment –seeking behaviour and drug prescription practices of low transmission in Uganda used surveys though it involved a longitudinal active case detection of malaria. These wide – area studies among many others all used the survey approach basically because the studies involved large numbers.

Nonetheless, in studies where the systematic inherent selection criteria, does not easily allow the randomization that comes with a survey; the selection process more or less is based on whether the person consented to participate or not after the entire population of interest was considered. For example, in the study of Ndyomugenyi et al (2006), in which they sought to register knowledge of malaria and related treatment seeking behaviour in an area of low transmission, they included participants of case detection, that is, those who have been detected to have malaria either when in hospital or in their villages.

In a study such as this, the eligible participants could only be expanded when the research is conducted over a long period of time. Rather than sampling immediately through a random process, ethical consideration of voluntary participation was applied to narrow the number down too.

This study may not have such a restriction however. For example, while it may be difficult to determine which residents have malaria at the time of the study, the attitude towards malaria which amounts to risk aversive-ness for the disease is

considered. Moreover, the disease is endemic to the tropical region in which this local community can be found and thus presents a higher probability of recording experiences of people with malaria, at least within the time frame that a particular known therapy such as the Artemisinin - based Combination Therapy (ACT) is used to combat a particular breed of the pathogen – *plasmodium falciparum*.

A survey produces quantitative data about an item or phenomena in a population. As hinted on from the beginning of the argument, it is characterized by a probability sampling technique which produces an unbiased representation of the population of interest. Usually surveys gather information which is not available from other sources, and results can be used to complement existing data from secondary sources (Owens, 2002). There are essentially two variations in surveys: cross – sectional survey and longitudinal surveys. This study makes use of the former which involves collecting data at one point in time.

An advantage of survey is the flexibility of collecting a wide range of information. Surveys are standardized and usually are free from errors and they employ a large sample size which allows inferences to be made. Nonetheless, the survey method may have the disadvantage of low validity, especially with close-ended questions, issues of honesty and ability of the subject respondent to respond to certain questions because he/she might have forgotten the reasons for some actions. The overriding advantage of making inferences on the whole population motivates this research approach while efforts have been made to design instrumentation to reduce errors and avoid tasking the memory of respondents.

### **Study site and setting**

The study was conducted in Awoshie, an urban community in the Weija constituency, located within the Weija West district of the Accra Metropolitan area. Awoshie is a suburb of Accra within the Greater Accra Region of Ghana. Being in the regional capital, it falls in the rain shadow area of the Akuapem Togo ranges and experiences perhaps the lowest amount of rainfall in the country. It generally lies in a low lying area in comparison to other close areas such as the McCarthy Hills, and some areas in New Gbawe community CP community. Climatic conditions over the years have become quite unpredictable and thus have almost moved from the double maxima of rainfall (with two peaks in June and September). There is almost no notable dry (Harmattan) season which hitherto was from November to March, but rather the area and indeed the region could experience dry spells in the middle of the year. Yet, the amount of rainfall is one of the lowest, compared to all other parts of the country. The annual mean temperature is about 24<sup>0</sup>C.

There are three second cycle institutions; Odorgonno Senior High School, Apostle Safo School of Arts and Sciences and Edge Hill Senior High School. Some health facilities within the community are Alive Clinic and Pharmacy, Amoah Memorial Hospital, St. Anthony's Clinic and Mary Lucy Hospital among a few. There are countless drug stores, pharmacies and chemical sellers who make medications available to community. There is a zongo community where economic activities engaged in include food vending, trading within the community and outside in the business district of Accra. There is a semi – elite community whose major economic activities include teaching, nursing, banking, administrative secretaryship and civil

service. Thus, the occupations of the people are very varied as they reflect the cosmopolitan nature of the entire Accra city with people of different dialects and education. The community has a dual carriage road that runs from the Awoshie junction through to the Ablekuma corridor towards Pokuase. This road facilitates commuting from house to work by local residents within the area.

There is no documented literature or statistics on malaria transmission specific to the area, but the general consensus from health education on radio and other platforms indicate that malaria transmission is unstable and epidemics are likely to occur after some torrential rains over a period of time which further worsens the drainage conditions of the area and exposes the extent of insanitary conditions in the area. There are a lot of open drains in the Awoshie community even though there are less forested and marshy areas in the almost predominantly nucleated settlements. All age groups are at risk of malaria. There are however, many health centres and chemical sellers in the area. Most health centres are clinics and it was quite difficult obtaining ready data on mortality due to malaria as well as number of malaria detection cases. Some of the health services provided are almost free as they are supported by the National Health Insurance Scheme (NHIS) and subscribers to the scheme benefit.

### **Population**

The population of a study is the larger group from which individuals are selected to participate in a study. Researchers differentiate between target population and study population. According to Elston and Johnson (1994), target population is the whole group of individuals to which the researcher is interested in applying conclusions,

and the study population is the group of individuals to which the researcher can legitimately apply the conclusions. In this study, the target population is residents of the Awoshie community within a specified age group whereas all residents would constitute the study population. Thus, they included all residents of both sexes in all household in the Awoshie Community, including all persons of varied ages. There was no exclusion based on physical fitness, religion and creed, politics, highest education level or perceived social class. In reality the entirety of this target population was not reachable. For example, some residents would consistently be out of home while others are merely weekend visitors. It was easier reaching people who spent most of their time in the community. Perhaps the only exclusion criterion was based on age. Residents to be included in the study were age 14 years and above. The minimum threshold age of 14 was chosen because the study instruments which sought register the knowledge of residents and persons of at least that age who are more likely to be able to communicate their experience and knowledge with regards to specific drugs taken as well as symptoms. It is expected that residents at 14 years would at least be in junior high school if they are schooling. It is from this population that the sample is selected.

### **Sampling technique and sample**

The sample for the study comprised 313 respondents from the Awoshie community. This sample size was chosen anticipating a 25% non-response rate which could be purely due to respondents not returning questionnaire or incomplete questionnaires which were excluded. The high expected non-response rate was chosen because of household surveys and its semblances, respondents may take the questionnaire and

will not deliver it completed on the set date of returning it if self – administered. According to the 2010 census figures, the Awoshie community has a population of 10,332. Based on the prescription of Krejcie and Morgan (1970) that beyond a population size of 5000, a sample size of 400 was deemed adequate for the study. However, the sampling strategy was not to sample everyone in a typical household as that could possibly register similar responses with certain aspects which could over estimate some factors. For example, a mother is likely to suggest and apply same treatment strategy to children and may even transmit the same knowledge in the same household. Such predictable homogeneity in responses was avoided and hence at most two persons were made to complete the questionnaire. Subsequently, to account for this, about half of sample suggested by Krejcie and Morgan (1970) was chosen. The sample of 250 with anticipated 25% non – response rate to yield 313 residents was chosen.

The sampling technic was systematic sampling. Systematic sampling is a probability sampling technique where the first unit is totally selected randomly and the  $k^{\text{th}}$  unit is selected at intervals. Without a proper sampling frame in place, the researcher picked a house at random near her location, since in principle; her house location to any researcher is certainly a random pick. Thereafter every fifth house picked was sampled.

#### **Data collection: Tools and methods**

The primary tool used for data collection in this study was a structured questionnaire, which was administered by the principal investigator, and two research assistants who were given an orientation at the beginning of the study to ensure standardisation

especially with regards to translating questions from English into a local dialect and reporting. The questionnaire was pretested among college students in a school, located at about 4 kilometres from the Awoshie community over 5 working days to improve the quality of data collection. Another meeting with the assistants was scheduled after the pretesting was done and this helped to address issues and questions that came up during the pretesting period.

The procedure for data collection in a typical household involved the following: (i) the research/ assistants greet whoever he/she finds in the household; (ii) he/she verifies the age of the respondents. Typically, when the person looks very young person the age is verified to make sure he/she is at least 14 years old. (iii) the researcher finds out if the potential respondent can speak and write in English; (iv) the purpose of the study is then explained either in English or in a local dialect, mainly Twi or Ga or Ewe; (v) the questionnaire is then given to the person to complete or with the help of interpretation in local dialect is completed; (vi) the questionnaire is retrieved; (vii) residents who chose to complete the questions in their own time collect the questionnaires and specify and date and time when the researcher should come for the questionnaire. It took approximately three weeks on intensive data collection process to collect well completed 250 questionnaires. Households which did not have any person around at the time of the visit are marked and returned to later in the day or in another day. At worst the household was substituted, still based on the process of the systematic sampling.

### **Instrumentation**

Data were collected through the survey questionnaire only. The survey questionnaire was a self-administered instrument made up of both closed and open ended questions. The questionnaire was composed of four main sections. The first section comprised of questions that elicited the knowledge level of respondents about malaria and these bordered on knowledge on causes, symptoms, treatment and location of health centres in the community, among others. The second section covers the attitude to seeking health care which comprise of a range of questions that collect response on the respondents' level for reaction. The third section was health practice on malaria and together, these three sections reflect the KAP model. The fourth section borders on associated elements with respect to health issues and accessibility to health care and the fifth section are the demographic and background questions on respondents. They cover the age, sex, occupation, marital status, ethnicity, religious affiliation, education and income level. Questions on occupation, cause of malaria, symptoms, medications taken as well as location of health centres were all open ended. The rest of the questions were close ended. Questions on attitude to health care or health seeking behaviour were all Likert scaled while most of the questions on health practice were also Likert scale.

### **Pretesting**

Hunt, Sparkman and Wilcox (1982) define pretesting as the use of a questionnaire in a small scale practice study to ascertain problems before the full study is underway. Pretesting an instrument is necessary because no amount of intellectual exercise can substitute for testing an instrument designed to communicate with ordinary people.

The researcher used an undeclared pre-test to design the questionnaire for the residents. By the undeclared pre-test, the respondents were not told the exercise was a practice run. The questionnaire was administered to about 20 students in a high school who were later on excluded from the study. All respondents were given an attached sheet to provide debriefings or comments on question items in terms of how they understood it and whether the scoring criteria satisfied the intent and nature of the question items. This approach was used also because some aspects of the questionnaire were constructed using a Likert scale. Meaningless questions to the students as indicated by them were removed while question items were repositioned. The pre-test took approximately a week to complete.

### **Issues of validity and reliability**

As in all researches, consideration must be given to construct validity, internal validity, external validity, and reliability (Yin, 1989). Levy (1988) established construct validity using the single-case exploratory design, and internal validity using the single-case explanatory design. Yin (1994) suggested using multiple sources of evidence as the way to ensure construct validity. While the design of the study does not allow analysis from multiple sources of data, it used specification by Churchill (1979). They are:

- 1) Specify what information will be sought,
- 2) Select the type of questionnaire and method of administration
- 3) Determine the content of the individual questions,
- 4) Choose the form of response to each question
- 5) Determine the number of questions and sequence of each question

- 6) Re-examine steps 1-5 and revise if necessary and
- 7) Pre-test the questionnaire and revise if necessary

A high reliability of response is obtainable by providing all respondents with the exact same set of questions. Hence for the study, all residents were provided with the same instrument.

Validity on the other hand, is inherently more difficult to establish within a single statistical measure. If a questionnaire is perfectly valid, it must measure in such a way that inferences drawn from the questionnaire are entirely accurate. Suskie (1996) reports that reliability and validity are enhanced when the researcher takes certain precautionary steps:

Have people with diverse backgrounds and viewpoints review the survey before it is administered. Find out if:

- “each item is clear and easily understood
- they interpret each item in the intended way
- the items have an intuitive relationship to the study’s topic and goals, and
- your intent behind each item is clear to colleagues knowledgeable about the subject” (p. 59).

The instrument was developed with the help of a personnel versed in the questionnaire design and the pre-testing of the questionnaire allowed the second and third point stated above to be explored adequately. Weisberg, Krosnick and Bowen (1989) stated that researchers can assess reliability by comparing the answers respondents give in one pre-test with answers in another. The specification of the unit

of analysis also provides the internal validity as the theories are developed and data collection and analysis test those theories.

### **Technique of data analysis**

In analysing quantitative data, the Statistical Package for Social Sciences (SPSS) version 21 was used. Completed questionnaires were cleansed and some missing item responses were taken care of using appropriate methods of logic based on previous responses and assumption and the option of entering midrange or close to midrange values for the Likert questions especially. In cases where non responses were high, the entire case was excluded. After editing and coding the responses and entering it through the SPSS data editor file, preliminary descriptives were run to help further cleanse the data and verify the behaviour of some variables. Analysis involved frequencies and non-parametric tests such as chi-square which was specifically used to investigate the influence of sex/ gender difference and education disparity on attitude to seeking health care.

### **Ethical considerations**

For the study, individual respondents were not misrepresented in reporting their views especially with cases where questions were translated to the local language. Also, individual decisions were respected as to whether to participate or withdraw from the research.

## CHAPTER FOUR

### RESULTS AND DISCUSSION

#### **Introduction**

This chapter presents the results of the study and is divided into five sections. The first comprises demographic and background information on the respondents. The second section presents results mainly related to the knowledge of about Malaria among residents of the Awoshie community. The third section looks at the attitude to seeking health care; the fourth section covers health practices with treatment of Malaria. The fifth section expounded on some few associated health and accessibility issues. Discussions would be under the following objectives:

- To examine the knowledge, perceived causes and symptoms of Malaria.
- To identify the common treatment options available in treating Malaria.
- To identify some modes of prevention.
- To ascertain, to what extent people exhibit plural medical behaviour.

#### **Demographic and background information**

This section presents the demographic information on sex, age, ethnicity, occupation and religion. Other background information presented are marital status, highest educational level and level of income.

#### *Sex*

There were more females involved in the study in comparison to males. Of the 250 respondents, 104 were males and 146 were females, reflecting the predominance of

females in the study area. The sex distribution of sample residents shows that there were approximately 41% males. The rest, 58%, were females.

#### *Age distribution*

The age distribution of respondents is skewed towards the lower age group with more than half (almost 58%) of the respondents between the ages 14 and 29 years inclusive. Table 2 shows the age distribution.

**Table 1: Age distribution of respondents**

Age class (in years)	No. of respondents	Percent
14 – 19	61	24.4
20 – 29	83	33.2
30 – 39	80	32.0
40 – 49	13	5.2
50 – 59	1	.4
60 and above	5	2.0
Non response	7	2.8
Total	250	

Source: Field Work, 2016.

Less than 5% were 60 years old or above. The modal age group was 30 – 39 years with the average age being 27 years. Residents of middle age, that is, 40 – 59 years are just about 6%.

#### *Ethnicity*

The ethnic distribution of the sample residents shows a domination of people from the southern half of Ghana. Twelve persons did not indicate their ethnic group. Table 2 gives details.

**Table 2: Ethnicity of respondents**

Ethnic group	No. of respondents	Percent
Akan	115	46.0
Ewe	55	22.0
Guan	16	6.4
Northern Ghana	24	9.6
Ga-Adangme	23	9.2
Other	5	2.0
Non response	12	4.8
Total	250	

Source: Field Work, 2016.

The dominant ethnic group was the Akan (46%) followed by the Ewe (22%) who were even less than half of the proportions of the Akan. These two ethnicities are all located at the southern half of Ghana. The Guans, some of who are located at the northern part of the Volta and spread in parts of Southern Ghana, constitute 6.4% while people from the three Northern regions of Ghana including the Gonja, Kusasi, Frafra and Dagaara among others are less than 10%. Deductively, there is an almost 50% chance that any resident selected from the Awoshie community may be an Akan

### *Occupation*

The respondents indicated about thirty different types of occupation, most of which were white colour jobs. However there were a considerable number of students. Table 3 shows the occupation of respondents.

**Table 3: Occupation of respondents**

Occupation category	Occupation	No. of respondents	Percent
Education	Teacher	28	11.2
	Student	85	34.0
	Librarian	1	.4
Business Management	Administrative Assistant	3	1.2
	Administrator	3	1.2
	Manager	2	.8
	HR Manager	3	1.2
	Clerk	2	.8
	Sales Representative	2	.8
	Secretary	12	4.8
	Accountant	4	1.6
Medical / health sector	Doctor	1	.4
	Medical Counter Assistant	4	1.6
	Nurse	20	8.0
	Midwife	1	.4
	Physician Assistant	3	1.2
	Chemical Seller	1	.4
Finance	Insurance Officer	2	.8
	Reinsurance Officer	1	.4
	Mobile Money Operator	5	2.0
	Tax Officer	2	.8
	Banker	6	2.4
Vocational/ technical	Technician	10	4.0
	Fashion Designer	2	.8
	Carpenter	3	1.2
Self-employment	Trader	13	5.2
	Self-employed	5	2.0
Others	National Service Personnel	6	2.4
	Public Servant	4	1.6
	Software Developer	1	.4
	Security Personnel	2	.8
	Retired	3	1.2
	Unemployed	10	4.0
Total		250	

Source: Field Work, 2016.

About a third of the respondents are students (34%) and 11.2% are teachers. Altogether 45.6% of respondents are in education which constituted a majority. Respondents in business management activities excluding traders constituted 12.4%. They were managers, sales representatives, administrative assistants, accountants and secretaries among others. The proportion of respondents in the medical or health field was only marginally lower – 12%, or whom many were nurses.

Insurance officers, reinsurance officers, mobile money operator, tax officer and bankers were categorised under finance and they constituted 6.4%. Skill set regarded as vocational or technical such as fashion design and carpentry had 5% of respondents in that category. Some 5.2% were traders and another 2% indicated that they were self-employed. There were 6 national service personnel (2.4%), 4 public servants (1.6%), one software developer (.4%) and 2 security personnel (.8%). One point two percent of respondents were retired and 4% were unemployed.

### *Religion*

Most respondents were Christians (91.6%) with some few Muslims (7.6%). Two respondents selected the African Traditional Religions, forming 0.8 % of the responses gathered.

### *Marital Status*

The marital status of respondents was basically limited to whether the respondent had partners or not. As such cohabitating couples still had the option of indicating that they were dating. Table 4 shows the marital status of respondents.

**Table 4: Marital Status**

Marital status	No. of respondents	Percent
Single	147	58.8
Dating	29	11.6
Married	73	29.2
Separated/ Divorce	1	.4
Total	250	

Source: Field Work, 2016.

More than half of the respondents were single. These included approximately 41% teenagers who constitute almost a quarter of the respondents. A good number of respondents were married (29.2%), such that out of every 10 residents, 3 were most likely married. Divorced respondents constituted less than 1 percent, suggesting a low divorce or marital separation rate. More than 10% of the respondents were dating.

#### *Educational Level*

The educational level of residents cuts across almost all the qualification levels, from primary to postgraduate education. Table 5 shows the distribution of respondents in the various educational levels.

**Table 5: Educational level of respondents**

Highest educational level	No. of respondents	Percent
Primary	2	.8
JSS/JHS/middle school	24	9.6

Vocational/ Technical	10	4.0
SSS/SHS	54	21.6
Training College	47	18.8
Undergraduate (Bachelor, HND)	90	36.0
Postgraduate	17	6.8
Non response	6	2.4
Total	250	

Source: Field Work, 2016

From Table 5, less than 1 percent had primary education only. Almost 10% could only complete junior high school (JHS) or junior secondary school (JSS) whereas another 4% had their highest qualifications as certificates in vocational or technical training. There seem to be more respondents with undergraduate certificate as highest qualification (36%) than any other qualification. Approximately 7% nonetheless had postgraduate degrees.

#### *Income*

The distribution of income level of residents shows a distribution that slightly tapers out at the high end income levels. This is represented in Table 6.

**Table 6: Monthly Income distribution of respondents**

Highest monthly income level	No. of respondents	Percent	Cumulative percent
Below 200	31	12.4	12.4

201-399	41	16.4	28.8
400-599	19	7.6	36.4
600-999	47	18.8	55.2
1000-1499	32	12.8	68.0
1500-1999	18	7.2	75.2
2000-2999	16	6.4	81.6
3000-4999	12	4.8	86.4
5000 and above	4	1.6	88.0
Non response	30	12.0	100.0
	250		

Source: Field Work, 2016

Approximately 29% of residents indicated that they earn up to about a \$ 1 (GHS 3.5-3.9) a day culminating in at most GHS 399 a month. A similar proportion of residents between GHS 400 and GHS 999 inclusive, suggesting that slightly more than half of respondents (62.7%) earn below GHS 1000. The proportion of residents in the various income brackets reduces consistently, as the income rise from GHS 600-999 income group to the group that earns income of GHS 5,000 and above.

### **Knowledge about malaria**

This section presents the knowledge on malaria as exhibited by the residents of Awoshie on the survey questionnaire. Residents were typically made to provide responses on causes and symptoms of Malaria as well as certain perception of malaria. There are also other questions that examine the health seeking behaviour

with regards to the knowledge of respondents on Malaria. Issues on source of information on knowledge about malaria are also presented.

One of the most important items associated with malaria is a mosquito net. In an urban town, the name ‘mosquito net’ is one that is most likely heard by all. Respondents were asked to indicate whether they may get ill if they failed to sleep in a treated mosquito net for once. About one out of five respondents (20.9%) answered in the affirmative (Table 7). While this does not indicate squarely the residents’ knowledge about malaria, it shows, to some extent, the averseness for disease.

**Table 7: Failure to sleeping in treated mosquito nets and propensity of getting malaria**

Do you think that when you fail to sleep in a mosquito treated net for once you might get malaria?	No. of respondents	Percent
Yes	52	20.8
No	198	79.2
Total	250	

Source: Field Work, 2016

*Knowledge on causes of malaria*

Respondent were asked to put down some causes of malaria. The frequency of responses where respondents were allowed to indicate multiple answers is shown in Table 8.

**Table 8: Respondents’ knowledge on causes of malaria**

Causes of malaria	No. of respondents	Percent
Mosquito	196	78.4

Filthy environment	28	11.2
No treated nets	15	6.0
Stagnant water	17	6.8
Bushy area	1	.4
Chocked gutters	2	.8
No response	5	2.0

Source: Field work, 2016

Respondents indicated six factors as causes of malaria. Majority (78.4%) indicated that mosquitoes were the main cause of malaria. Other responses given were filthy environment (11.2%), no treated nets (6.8%), stagnant water (6.8%), bushy area (.4%) and choked gutters (8%). Only 2% of respondents did not give any response.

#### *Symptoms of malaria*

The symptoms of malaria are basically the signs that people suffering from malaria exhibit. The respondents listed about eighteen different symptoms. These are clearly indicated in Table 9. Since the item was a multiple response question, the number of times/ respondent mentioned it shows its popularity as a symptoms of malaria.

**Table 9: Respondents' knowledge of symptoms of malaria**

Symptoms of malaria	No. of mentions	Percent
Fever	131	52.4
Headache, Migraine	111	44.4
Loss of Appetite, Bitter Mouth	37	14.8
High temperature	37	14.8

Chills	35	14
Diarrhoea, Vomiting	34	13.6
Weakness/body pains	30	12
Cold	16	6.4
Nausea	16	6.4
Dizziness	10	4
Tiredness, Fatigue	8	3.2
Anaemia	5	2
Sore throat	5	2
Cough	3	1.2
Dry mouth	2	0.8
Profuse sweating	2	0.8
<i>Wrong answers</i>		
Nervousness	2	0.8
Death	1	0.4

Source: Field work, 2016

More than half of the respondents mentioned fever as a symptom of malaria. Other symptoms which attracted such high mention were headache / migraine (44.4%), loss of appetite and a bitter mouth (14.8%), running high temperature (14.8%) as well chills (14%). Other symptoms less mentioned are profuse sweating, dry mouth, cough, sore through and anaemia. Less than 10% respondents mentioned these

symptoms. Two respondents indicated nervousness as a symptom while another respondent mentioned death as a symptom of malaria.

#### *Knowledge on treatment of malaria*

The results on treatment of malaria include respondents' response on how they would treat malaria, whom they would accept prescriptions from and whether they read contraindications on the medicines they bought.

The results in Table 10 shows that more than half of respondents would exclusively rely on hospital prescription while close to 40% would use both hospital prescription and herbal medicine. Less than 10% used herbal medicine only.

**Table 10: Treatment option for malaria**

Treatment option	No. of respondents	Percent
Herbal medicine only	17	6.8
Hospital prescription	129	51.6
Both	96	38.4
No response	8	3.2
Total	250	

Source: Field Work, 2016

Further, respondents were asked if they were fine with nurses prescribing medicines for them. Table 11 gives details of the responses they give.

**Table 11: Responses on nurses' offer of prescriptions**

Responses	No. of respondents	Percent
Would accept Nurses' prescription	96	38.4

Would not accept nurses' prescription	154	61.6
Total	250	

Source: Field Work, 2016

From Table 11, there is clear indication that about 38% of the nurses would accept nurses' prescription; the rest would not accept. However, on the issue of having knowledge or trusting in the knowledge of a chemical seller, respondents were to indicate if they would buy an antimalarial for self – treatment from a drug seller who is not a pharmacist. Many respondents indicated that they will never buy from such sellers. This seems consistent with their response on whether they would accept prescriptions from a nurse. Table 12 shows the respondents responses and other responses with regards to treatment.

**Table 12: Buying antimalarial from non-pharmacists**

Question item	Responses. [No. of respondents (%)]			
	Yes/ Always	No/ Never	Few times	Most often
Would you buy antimalarial for self-treatment from a drug seller who is not a pharmacist?	18(7.2%)	171(68.4%)	54(21.6%)	7(2.8%)
Do you indicate your allergies to health attendants when they give you medicine or attend to you?	106(42.4%)	41(16.4%)	63(25.2%)	40(16.0%)
Do you take your time to read about contra-indications of medicines bought?	100(40%)	27(10.8%)	87(34.8%)	36(14.4%)

Source: Field Work, 2016

About two-thirds (68.4%) of the respondents mentioned that they had never bought an antimalarial from a drug seller who is not a pharmacist. Ten percent 'always' or 'most often' did buy from drug sellers who were not pharmacists while approximately 22% did same 'few times'.

One important knowledge about health seeking behaviour is to know which drugs or elements that you are allergic to. Respondents were asked if they indicated their allergies to health attendants when they were given medicine or attended to. A good minority (42.2%) answered in complete affirmation while almost 16% respondents mention that they ‘most often’ did that. Less than 20% never did that while only about a quarter of the respondents did that a ‘few times’.

With regards to reading contraindications of medicines, some 40% said they did ‘always’ while about 11% said they never did. Approximately 35% did only a ‘few times’.

#### *Ancillary knowledge about malaria*

Respondents were further probed on their perception about malaria and some other things they would expect at treatment. They were also asked to indicate their course of knowledge about malaria. Responses on sources of knowledge are indicated in Table 13.

**Table 13: Source of knowledge**

Source of knowledge	No. of respondents	Percent
Public campaigns	175	70.0%
School	196	78.4%
Print Media	112	44.8%
Electronic media	158	63.2%
Parents/ friends	166	66.4%

Source: Field Work, 2016

The least popular source of knowledge from respondents’ responses is the print media (44.8%). Public campaigns seem very popular (70%) and many respondents

learnt about malaria from family and friends (66.4%). The school proved to be the most popular platform to disseminate knowledge about malaria (78.4%).

The question was also posed about whether malaria was a spiritual disease. Less than 6% answered in the affirmative (Table 14).

**Table 14: Opinion on whether malaria is a spiritual disease**

Malaria as a spiritual disease	No. of respondents	Percent
Malaria is a spiritual disease	14	5.6
Malaria is not a spiritual disease	236	94.4
Total	250	

Source: Field Work, 2016

Further on respondents knowledge about ancillary issues connected to malaria, they were asked if they knew the location of the nearest health centres around their vicinity where they could get immediate care for malaria. Almost all the respondents indicated some clinic or hospital. These hospitals were located some reasonable distance from the study area or just in the study area. Finally respondents were questioned on the routine practice of taking blood pressure and other vital statistics at each visit to a clinic or hospital. The question was to solicit their views on whether such activities were always necessary. At least 8 out every 10 person thought it was necessary whereas some 12.6% thought it should be done only at certain times. Less than 2% expressed disagree entirely (Table 15).

**Table 15: Necessity of routine checks at hospitals**

Do you think it is necessary that anytime	No. of respondents	Percent
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you go to the clinic /hospital your vital statistics such as blood?		
Yes	214	85.6
No	4	1.6
Sometimes	32	12.6
Total	250	

Source: Field Work, 2016

### Attitude to health seeking behaviour

The attitude to health seeking behaviour is described by a number of questions to which the answers suggested a degree to which respondents would approach situations pertaining to their health in general and the malaria disease. Table 15 is an exhibit of these questions and the responses generally show that respondents would not want to approach treatment of serious cases of illness. Further analysis on attitudinal variations based on gender differences and educational disparities was also presented in Tables 17 and 19 respectively. In exploring the attitudinal variations only the affirmative responses, that is, 'yes/always' and 'most often' were considered since such responses to the questions described to a large extent an unscrupulous behaviour towards health care.

**Table 16: Attitude to health seeking behaviour**

Question item	Responses. [No. of respondents (%)]			
	Yes/ Always	No/ Never	Few times	Most often
Is it acceptable to self-treat acute malaria conditions?	26(10.4%)	121(48.4%)	92(36.8%)	11(4.4%)
Is it acceptable to self-treat chronic malaria conditions?	10(4%)	210(84%)	26(10.4%)	4(1.6%)

Is it acceptable to order blood test on self for diagnostic purposes?	116(46.4%)	70(28%)	49(19.6%)	15(6%)
Is it acceptable to order blood test on self for monitoring purpose? NR=4	107(42.8%)	54(21.6%)	74(29.6%)	11(4.4%)
Are you reluctant to consult for psychiatric problems?	82(32.8%)	114(45.6%)	46(18.4%)	6(2.4%)
Do you downplay your symptoms of malaria? (NR=2)	6(2.4%)	119(47.6%)	103(41.2%)	20(8%)
Do you attend hospital care late, when things get serious?	28(11.2%)	107(42.8%)	88(35.2%)	88(35.2%)
Do you work while sick?	58(23.2%)	46(18.4%)	109(43.6%)	37(14.8%)
Are you satisfied when you treat yourself? (NR=2)	61(24.4%)	34(13.6%)	110(44%)	43(17.2%)
Are you concerned about confidentiality matters when you get sick? (NR=1)	101(40.4%)	56(22.4%)	75(30%)	17(6.8%)
Is it easy finding a doctor to treat you properly?	99(39.6%)	48(19.2%)	60(24%)	43(17.2%)

Source: Field Work, 2016

Many respondents (84%) indicated that it was never acceptable to self-treat chronic malaria conditions. However, while a significant minority (48.4%) believe it is not acceptable to self-treat an acute malaria case, approximately 37% would do it a few times and fewer (15%) would do always or most often. There is also a clear tendency that respondent would take the symptoms of malaria very serious. Cumulatively, over 80% respondents would never downplay the symptoms of malaria. A similar proportion of respondents (78%) never attended hospital for late care or had only that on few occasions.

On the other hand, on the issue of ordering of blood test on self either for diagnosis purposes or for monitoring purposes, at least 4 out of 10 residents indicated that they would always order for such blood test on self. The same proportions of residents

were equally concerned about confidentiality matters when they are ill. Respondents who showed deferring perception or attitude were relatively few although some 30% had concerns for confidentiality only a few times.

There are a number of questions which response did not show a markedly wide difference in the opposing views in terms of the frequency. For example, while about a third of the respondents indicated their reluctance to consult for psychiatric problems, a slightly higher proportion of respondents (45.6%) said 'no', though about 18% intimated they would on a few occasions feel such reluctance. Also, the response on whether respondents would work while sick showed that just about 2 out of 10 respondents would always or never work while sick. Responses for questions such as 'Are you satisfied when you treat yourself?' do not show any discernible direction. Almost a quarter respondents indicate they are always satisfied and as much as 44% mention they are satisfied only a few times and 13.6% are never satisfied; 17.2% are most often satisfied.

Given the varied opinions that patients naturally form about their care givers given their unique experiences as well as their own level of scrupulousness, respondents were asked if it was easy finding a doctor who treats them properly. Approximately 40% said they did always and about 19% never did and almost a quarter (24%) did only a few times.

The attitude to health seeking behaviour among the sexes was also explored to identify whether there was any variation in respondents behaviour due to their sex. The results showed that there were generally no variations.

**Table 17: Sex difference and attitude to health seeking behaviour**

Question item	Sex [No. of affirmative responses (%)]		$\chi^2(p - value)$
	Male	Females	
Is it acceptable to self-treat acute malaria conditions?	13(12.7%)	24(16.6%)	.645(.422)
Is it acceptable to self-treat chronic malaria conditions?	8(7.9%)	6(4.2%)	1.571(.210)
Is it acceptable to order blood test on self for diagnostic purposes?	49(48.1%)	80(54.7%)	1.098(.295)
Is it acceptable to order blood test on self for monitoring purpose? NR=4	48(49.9%)	69(47.2%)	.069(.792)
Are you reluctant to consult for psychiatric problems?	37(36.3%)	50(34.7%)	.063(.802)
Do you downplay your symptoms of malaria? (NR=2)	11(10.8%)	14(9.7%)	.074(.786)
Do you attend hospital care late, when things get serious?	23(22.5%)	32(22.9%)	.014(.906)
Do you work while sick?	27(26.5%)	67(45.9%)	9.622(.002)*
Are you satisfied when you treat yourself? (NR=2)	38(37.6%)	66(45.5%)	1.520(.218)*
Are you concerned about confidentiality matters when you get sick? (NR=1)	36(35.6%)	80(54.8%)	8.791(.003)
Is it easy finding a doctor to treat you properly?	62(59.7%)	79(54.1%)	1.091(.296)

NB: Percentages are valid percent \* Result is significant NR – Non response

The Chi-square tests which tested the relationship between sex difference and the differing responses – of affirmative and non-affirmative responses – showed that, for many of the descriptors of attitude, there were no variations in attitude between males and females ( $P > .05$ ) (Table 17). The only exceptions were that more males were likely to work while sick in comparison to females ( $\chi^2 = 9.622$ ,  $p = .002 < .05$ ) and are also more particular about confidentiality with regards to the condition of their ailment ( $\chi^2 = 8.791$ ,  $p = .003 < .05$ ) (Table 17).

The other factor explored with regards to respondent's attitude to health seeking behaviour was the disparity in the highest level of education. Educational levels were put into two groups: respondents with below senior high/ college education and those who had at least a senior high education. The results were presented in Table 18.

**Table 18: Education disparity and attitude to health seeking behaviour**

Question item	Education Level grouping [Affirmative responses (%)]		$\chi^2(p$ - value)
	Below College/ SHS	College Education and higher	
Is it acceptable to self-treat acute malaria conditions? (NR=6)	7(19.4%)	30(14.4%)	.601(.438)
Is it acceptable to self-treat chronic malaria conditions? (NR=6)	7(13.9%)	9(4.4%)	5.188(.023)*
Is it acceptable to order blood test on self for diagnostic purposes? (NR=6)	20(55.6%)	109(52.5%)	.122(.727)
Is it acceptable to order blood test on self for monitoring purpose? (NR=9)	16(44.4%)	102(49.4%)	.346(.557)
Are you reluctant to consult for psychiatric problems? (NR=8)	19(52.8%)	67(32.5%)	5.487(.019)
Do you downplay your symptoms of malaria? (NR=8)	7(19.5%)	18(8.7%)	3.792(.051)
Do you attend hospital care late, when things get serious? (NR=6)	11(30.6%)	43(20.7%)	1.739(.187)
Do you work while sick? (NR=6)	14(38.9%)	80(38.4%)	.002(.961)
Are you satisfied when you treat yourself? (NR=8)	17(48.5%)	86(41.6%)	.604(.437)
Are you concerned about confidentiality matters when you get sick? (NR=7)	15(42.9%)	102(49.1%)	.459(.498)
Is it easy finding a doctor to treat you properly? (NR=6)	18(50%)	129(57.2%)	.648(.421)

\* Result is significant NR – Non response

There were no variations in attitude between respondents of lower education (below SHS) and high education (SHS and higher) in the majority of descriptors ( $P > .05$ ) (Table 18). The only element of exceptional results was with regards to the question on whether it was acceptable to self-treat chronic malaria conditions. Proportionately

more respondents of low education answered in the affirmative (13.9%) in comparison to respondents of high education (4.4%) and this difference in reference to their distribution of opposing views was significant ( $\chi^2 = 5.188$ ,  $p = 0.023 < .05$ ).

### Health practices on malaria

The health practices of respondents was explored by soliciting their responses on the drugs taken to cure malaria, health centres patronised and how and where to treat illness as well as following prescriptions.

In respect of the drugs taken to cure malaria, the responses from respondents showed that some took ACTs, haematinic, herbal based medications, analgesics, antibiotics and supplements. Table 19 gives details.

**Table 19: Drugs taken for self-medication**

Health Centre/ avenue	No. of respondents	Percent
ACTs	206	82.4
Herbal	47	18.8
Analgesic	61	24.4
Antimalarial (monotherapy)	24	9.6
Haematinic	6	2.4
Antibiotic	4	1.6
Supplement	2	0.8
Jesus	1	0.4

Source: Field Work, 2016

The mostly used medication were ACTs (82.4%) followed by Analgesics such as Aspirin, Panadol, paracetamol, and Augmentin. Close to 20% mentioned using herbal medicine (some locally branded) and about half that number used antimalarial drugs such as chloroquine and brands such as p-alaxin. Less than 5 percent mentioned the

use of haematinic (blood tonic, multivites) antibiotics and supplements. One respondent indicated that Jesus had healed her when she suffered from malaria.

### **Treatment centres patronised**

Respondents were asked to indicate which health centres they had patronised most in the past years and which ones they had patronised in the past month (Table 20). The results show that in spite of the high proportion of respondents who had not visited any health centre in the past month, the relative frequencies associated the various health centres/ avenues were reflective of the proportions (relative frequencies) of same stated for the patronage of past years.

**Table 20: Treatment centres patronised:**

Health Centre/ avenue	During the past one month	Past years on usual basis
Hospital/ clinic	67 (26.8%)	222(88.8%)
Herbal Centre	4(1.6%)	9(3.6%)
Faith healer	1(.4%)	12(4.8%)
Drug store/ chemical seller	64(25.6%)	111(44.4%)
Other (own herbal medication)	4(1.6%)	5(2%)
None	132(52.8%)	-

Source: Field Work, 2016

Over half of the respondents (52%) had not visited any health centre in the past month. Noticeably the relatively high proportion of usual attendees of hospital/ clinics over the past years month is reflected, though not exactly in proportion indicated for patronage in the past one month. Similarly the small proportion of regular Herbal Centre users (3.6%) and person who for example prepare their own

herbal medicine (2%) is reflected in the small proportions stated for attendance for the past one month. About a quarter of the respondents (25%) mentioned that they had bought medicine at the drug store and 44.4% respondents indicated that they patronised that health option usually (in the past years). The difference in the proportions here and for the others associated with the other health avenues statistically can be traced to the high non-patronage of any of the health avenues in the past month and zero non-patronage over the years.

Further probe into the practices of respondents showed that almost three-quarters of the respondents take malaria drugs exactly as prescribed. An even greater proportion mentioned that they never take herbal medication together with antimalarial prescribed. These are shown in Table 21.

**Table 21: Analysis on some items for health practice on malaria**

Question item	Responses. [No. of respondents (%)]			
	Yes/ Always	No/ Never	Few times	Most often
Do you take malaria drugs exactly as prescribed?	186(74.4%)	9(3.6%)	23(9.2%)	32(12.8%)
Do you take herbal medication together with antimalarial prescribed?	5(2%)	214(85.6%)	24(9.6%)	7(2.8%)
Would you treat fever at hospital rather than home? (NR=14)	84(35.6%)	28(11.9%)	89(37.7%)	35(14.8%)
Do you continue to do exactly the same things which cause malaria while taking drugs for it?	25(10%)	155(62%)	59(23.6%)	11(4.4%)
Do you take drugs (as a preventive measure) even before you are diagnosed with malaria?	28(11.2%)	141(56.4%)	72(28.8%)	9(3.6%)

Source: Field Work, 2016

Generally about half of the respondents (50.4%) would at least most often treat malaria at the hospital while the rest - 49.6% - would either not want to treat malaria at the hospital or would do that on very few occasions.

Asked whether they continued to do exactly the same things which cause malaria while taking drugs for it, one out 10 respondents answered 'yes'. However, over 60% desisted from doing the very things which causes malaria.

Finally, results on taking drugs as a preventive measure showed that about 11% did take drugs as a preventive measure even before they are diagnosed with malaria. More than half respondents (56.4%) indicated that they never did. Some 28.8% submitted that they did that in very occasions.

#### **Associated health issues and accessibility**

The associated health issue explored in this section covered which ailments respondents reported often as being sick. Accessibility to health covered whether the respondent had a personal doctor, how accessible the doctors were at the health facility, time spent at the health facility and financing of health costs. These are presented in Tables 22, 23 and 24. Responses to the items do not preclude respondents who usually use other source avenues apart from hospitals and clinics. Respondents, though may patronise drug stores usually can provide answers regarding their experience at the hospital if they have ever been there before. This has a strong bearing on the element of accessibility.

**Table 22: Elements on health issues and accessibility**

Item	Yes (%)	No (%)
Are the doctors accessible in the facility you do visit?	216(86.4%)	34(13.6%)

Do you waste a lot of time at the health facility?	138(55.2%)	112(44.8%)
Is the doctor's diagnosis almost predictable at each visit?	147(58.8%)	103(41.2%)
Do you have a personal doctor?	54(21.6%)	196(78.4%)

Source: Field Work, 2016

From Table 22, many respondents (86.4%) submitted that the doctors were accessible in the facility they visited. A little more than half of the respondents (55.2%) in general, however, indicated wasting a lot of time at the health facility and even more (58.8%) mentioned that the diagnosis was almost predictable at each visit. Only 2 out of 10 respondents claimed to have personal doctors.

Health finance was done through insurances, out of own pocket or company paid. Sixty percent of respondents sponsored their own health costs at times (Table 23). The use of the national health insurance was mentioned 44%, private health insurance, 24.4% and company sponsored 5.2%.

**Table 23: Financing of health**

	No. of respondents	Percent
National Health Insurance	110	44.0
Private Health Insurance	61	24.4
Self-sponsor/ out of own pocket	150	60.0
Other (e.g. company paid)	13	5.2

Source: Field Work, 2016

The relationship between the source of financing health costs and the health facility mostly patronised was explored. Table 24 gives the details. Since all the variables are

multiple response items, the percentages are not given as the appropriate denominator is indeterminate for the cross-tabulation.

**Table 24: Health facility patronised in relation to source of finance**

Source of finance	Health facility usually patronized					
	Hospital/ clinic	Herbal Centre	Faith healer	Drug store/ chemical seller	Witch doctor	Other (own herbal medication)
National Health Insurance	103	5	5	60	-	1
Private Health Insurance	52	-	-	31	3	-
Self-sponsor/ out of own pocket	139	9	9	72	-	1
Other (e.g. company paid)	10		1	2		3

Source: Field work, 2016.

From Table 24, there is no discernible relationship between the source financing health costs and the health facility usually patronised. Whether out of pocket (self-sponsored) or from private and/ or public insurance or company paid, respondents would usually go to the hospital/ clinic or make purchases at the drug store with the latter health avenue attracting relatively lower patronage.

Finally, respondents provided illness they often reported at the various health avenues. This was to gain an appreciation of the preponderance of the ailment with respect to malaria. The top five illnesses mentioned are indicated in Table 25 and they were at least complained by one out of 10 persons.

**Table 25: Top five illnesses often reported by respondents**

Ailment reported	No. of respondents	Percent
Severe headache/migraine	77	30.8

Malaria	53	21.2
Weakness/ body pains	40	16.0
Fever	37	14.8
Diarrhea	25	10

Source: Field Work, 2016

The most popular ailment mention was severe headache and migraine (30.8%), followed by malaria (21.2%), weakness/ body pains (16%) and Fever (14.8%). It is notable that some of these ailments are actually symptoms of malaria. Diarrhoea was mentioned by only 10% respondents.

### **Discussions**

Discussions are under the following objectives:

- To examine the knowledge, perceived causes and symptoms of Malaria.
- To identify the common treatment options available in treating Malaria.
- To identify some modes of prevention.
- To ascertain, to what extent people exhibit plural medical behaviour.

### **Knowledge about perceived causes and symptoms of malaria**

Before delving into the perceived causes and symptoms of malaria, respondents' views were sampled on common diseases that affect individuals in the community. Some common ailments identified were severe headache and migraine, malaria, body weakness and aches, eye pains, cough and diarrhoea. These diseases were not considered endemic as its contraction depended on an individual's local health

practice. There were other diseases mentioned which some residents agreed needed prompt medical attention. These included: HIV/AIDS, cancer, kidney disease, heart disease, vaginal discharge, peptic ulcer, tonsillitis, stomach ache, skin infections, cholera, throat infection and severe chills.

The next item was to find out if residents knew about different types of malaria. Being a heterogeneous community various answers came up. Some Akan referred to malaria as “atriidi”. The Dangmes referred to it as “asra” and “asraku”. Asra is considered as mild or what Webberley (2016) calls uncomplicated malaria. Asraku refers to severe malaria. These findings were consistent with the findings of Agyepong (1992) as cited in Dzator and Asafu – Adjaye (2004).

Knowledge about causes and symptoms were also explored. Concerning the knowledge on the causes of malaria, the frequency of responses indicated that most people (196 respondents out of 250) were aware that infected mosquito bites transmitted malaria. Some specified that the female anopheles mosquito carried the malaria parasite but could not tell if there were different types of malaria carrying mosquitoes. Although this finding confirms Webberley’s (2016) assertion that the anopheles mosquito is the only mosquito that causes malaria, Mbonye et al (2006) have intimated that “omusujja” (local name for malaria in Mukono, Uganda) is a manifestation of pregnancy and not a disease condition that requires attention. Thus, primigravidae and some segments of the population were not considered at risk of contracting malaria. Symptoms such as backache, nausea, loss of appetite, vomiting and nausea were considered signs of pregnancy and not manifestations of malaria.

Also, respondents could differentiate uncomplicated malaria from severe malaria. Uncomplicated malaria is understood to mean a simple or mild form of malaria. On the other hand, severe malaria was referred to as chronic malaria. In this case chronic malaria or what Webberley referred to as severe malaria was understood to have spiritual connotations. A respondent explained:

“Every disease has a spiritual root. When you treat fever (malaria) and it does not go, then you have to look elsewhere”.

But how is fever (malaria) spiritual?

“You see in the Bible, Jesus Christ healed Peter’s mother – in – law who was sick with fever. But you know that fever is malaria. So malaria is in the Bible and has strong spiritual evidence” (response from a respondent; fieldwork 2016)

Malaria as a spiritual disease is consistent with the findings of Nsimba and Kayombo (2008) who argue that mashetani (evil spirits in Tanzania) are the cause of malaria. Thus relatives move away from localities where they suspect people with evil eyes might be watching them.

On the note of malaria and related complications being spiritual, Ahorlu et al (2005), commenting on malaria with convulsions in children hold the opinion that certain individuals think that convulsion, a symptom of cerebral malaria is caused by evil spirits though some think mosquitoes cause cerebral malaria.

Aside the causes of malaria attributed to bites from the female anopheles mosquito respondents put down other perceived conditions causing malaria to include filthy environment, stagnant water, not using treated nets, bushy areas and chocked gutters.

The Ghana Health Service being aware of these conditions has adopted the cleaning of the environment, mass indoor residual spraying and recommended the use of treated bed nets to address the perceived causes of malaria (Ghana Health Service, 2015). There are still some people (5 out of the 250 respondents) who have no idea about the causes of malaria or are simply disinterested in the issue.

Further, there were no references to the heat coming from the sun as causes of malaria as opined by Ahorlu et al, 2005, Okeke et al, (2006) and Idowu et al (2008). In some time past, malaria was attributed to eating bad and oily food as well as living in a dirty environment. Exposure to the burning heat from the sun was also believed to cause malaria. Ideas of the dirty environment still persist but malaria due to exposure of heat coming from the sun is almost becoming extinct. This perception could be dying in the urban area due to the persistent campaign emphasizing the spread of malaria caused by mosquitoes or as Idowu et al (2007) opine, knowledge about transmission of malaria by mosquitoes is better known in urban areas.

To survey the knowledge about malaria in Awoshie, respondents were asked to mention some symptoms of malaria they knew. Varied responses were given, among them: fever, headache and migraine, loss of appetite, bitter mouth, high body temperature, chills, diarrhoea, vomiting, weakness and body aches. Other symptoms included cold, nausea, dizziness, fatigue and tiredness, anaemia, sore throat, cough, dry mouth and profuse sweating. These symptoms agree with the findings of Esse et al (2008) and Webberley (2016).

Finally, the sources of knowledge about the causes and symptoms of malaria and how it is spread were acquired from public campaigns, school, print media, electronic

media, and parents and friends. Public campaigns and knowledge from parents and friends were among the highest responses concerning sources of knowledge about malaria.

### **Common treatment options for malaria**

The two major options explored for the treatment of malaria were herbal remedies and orthodox medicine. Some residents also claimed they used herbal remedies alongside orthodox medicine, thus exhibiting plural medical behaviour.

#### *Orthodox Treatment*

According to provisions within the Ghana Health Service in conformity with WHO guidelines for treatment of malaria, Artemisinin – based Combination Therapy (ACT) is the first line treatment of uncomplicated malaria (Ghana Health Service, 2015; World Health Organisation, 2015). Branded ACTs used by some respondents included Lonart, Coartem, Artesunate Amodiaquine, Arthemeter Lumefantrine and Mefloquine. Some respondents still used the monotherapies for treating malaria. Some of these monotherapies included Chloroquine and P – Alaxin. A point worth mentioning is the fact that in some rural communities in Abeokuta, Nigeria, ACTs are not used as the first line of treatment for treating malaria. Rather, herbal remedies are the first line of treatment. This occurrence conflicts the conception by the Ghana Health Service that ACTs are meant to be the first line of treatment for malaria (Idowu et al, 2007).

It can also be argued that urban dwellers subscribe more to orthodox treatment as a majority of the respondents (129 out of 250) chose this option. In consistence with the findings of Okeke and Okeibunor (2010) urban dwellers believe more in the

efficacy of orthodox medicine. As a mother put it: “going to hospital for both mild/severe malaria and convulsion is very good because we have a lot of specialist doctors who will diagnose the child and administer suitable treatment and drug” (p. 65).

Respondents who self – treated uncomplicated malaria also mentioned that they combined ACTs alongside other analgesics like Paracetamol or Acetaminophen, Aspirin, Tylenol, Augmentin, APC, Panadol and Efpac. There were those who also used haematinics to treat anaemia associated with malaria. These included Bioferon, Zincofer, Nexcofer and Durol. Supplements used included multivites and B – complex.

#### *Herbal Remedies*

According to WHO (2001), approximately 70% of the Ghanaian public rely on herbal remedies as their major form of healthcare. Slightly different from findings in this work, a few (17 out of 250) residents used herbal remedies. A further 96 out of 250 respondents combined treatment options. Dzator and Asafu – Adjaye (2004) have also intimated that Ghanaians opt for alternative treatments such as home remedies, a point in agreement with the findings from the field. Some home remedies according to Dzator and Asafu – Adjaye include herbal concoctions and medicinal solutions from plant and animal residue. Consistent with the findings in this study, some herbal remedies included Malanix, Class Malacure, Malafan, Masada, boiled “nunum” leaves, quinine tonic, Adutwumwaa bitters and Taabea herbal bitters.

### *Drug Outlets versus Self - Medication*

Another finding from the field was the purchase of drugs and other antimalarial from drug stores and chemical sellers. Drug vending is one of the activities which encourage the act of self – medication as noted by Dzator and Asafu – Adjaye (2004). In rural Nigeria, self-medication is the norm as hospital visitation is the last resort if all forms of self-treatment fail. Also drug hawkers are those who sell modern drugs for the treatment of malaria (Idowu et al, 2007). A good number (64 out of 250) of the respondents patronised drug stores or chemical seller shops for antimalarial. This finding supports the presuppositions noted earlier.

### **Modes of preventing malaria**

One of the most important items associated with malaria is a mosquito net. In an urban town, the name ‘mosquito net’ is one that is most likely heard by all. Respondents were asked to indicate whether they may get ill if they failed to sleep in a treated mosquito net for once. About one out of five respondents (20.9%) answered in the affirmative. While this does not indicate squarely the residents’ knowledge about malaria, it shows, to some extent, the averseness for disease. Cruz et al (2006), researching on who sleeps under the mosquito net as a preventive measure against malaria, noted that the Insecticide Treated Net (ITN) was the most preferred means of malaria prevention. In this vein, urban residents recognising the importance of the treated bed net are in consistence with the evidence obtained from the field. They, however, noted some other forms of malaria prevention including the use of mosquito repellents, mosquito coils, and weeding around one’s surroundings as a measure against the growth of mosquitoes. Also, they opined that the most vulnerable

of the population, children under five and pregnant mothers need not compromise the use of the treated bed net since it is the surest way of preventing malaria.

Adongo et al (2005) opine that perceptions about malaria impact on the modes of prevention adopted. There is a belief that only God can heal malaria because it is inherited. People predisposed to malaria can only avoid its reoccurrence by avoiding sweet foods. Other people believed that malaria prevention had nothing to do with using the insecticide treated bed net.

**To what extent do people exhibit plural medical behaviour?**

Medical pluralism is defined as the use of multiple medical provisions involving both orthodox and herbal medicines among others as a means of complementing or increasing the efficacy of a chosen treatment. The multiple provisions include both conventional and Complementary and Alternative Medicine (CAM), Wade et al, 2008. Consistent with the findings of Adongo et al (2005) some respondents (96 out of 250) combine both orthodox medicine and herbal remedies. Most families are practical – minded in combining herbal remedies with modern medicine for the treatment of malaria. Although people know about malaria as a parasitic disease, its treatment is influenced by the level of confidence people have in the formal sector of health. In the case of malaria attack, people initiate home treatment drinking herbal teas and using baths derived from neem leaves, pawpaw, guava and eucalyptus leaves. Indicated by the Four A's (Good, 1987), herbal remedies are available in the sense that most people learn herbal remedies from parents and friends as a means of treating malaria instead of spending time and money at the hospital. In addition, barks and leaves from neem trees, the acacia, “nunum” leaves, pawpaw leaves among

others are elements that are inexpensive and so affordable to all compared with the ACTs that are becoming expensive. Ingrained in the psyche of the average respondent is the fact that herbal remedies consumed alongside orthodox medicine are the best form of treatment for malaria. In terms of accessibility of treatment, most respondents knew about health centres around where they could obtain orthodox treatment. Some of the health centres mentioned were far and near the research area. These included Alive clinic, Mary Lucy hospital, SDA clinic, Samala clinic, Vicom hospital, Amoah Hospital, St. Anthony clinic among others. Knowledge of these treatment centres suggested that orthodox medicine was widely accepted and accessible. However, some respondents cited the hostile behaviour of some health care practitioners as a deterrent to visiting the health post. Rather, they preferred the drug store or chemical seller where they could lodge their complaints and receive prompt care. Also, most drug stores now sold herbal remedies neatly packaged and so respondents would go for those options. Some of these packaged herbal remedies included Adutwumwaa herbal mixture, Taabea herbal Mixture, Malanix, and Masada among others.

Conclusively, the factors of availability of herbal remedies, affordability of herbal remedies in comparison with ACTs, accessibility of neatly packaged herbal remedies against the hostile behaviour of certain health practitioners and acceptability of herbal treatment as a complementary medicine with orthodox medicine go a long way to determine plural medical behaviour. In view of the discussions so far, it could be said that herbal remedies are receiving prompt attention and enjoying patronage in the face of dominant western medicine. The WHO (2001) statistic that about 70% of

Ghanaians patronize herbal remedies is debatable significantly. Confidence in allopathy is increasing as a certain 51.6% (129 out of 250) respondents would opt for orthodox medicine. However, there are still a good number 45.2% (113 out of 250) of respondents who still believe in herbal remedies. On the whole, those who patronize herbal remedies believe in its efficacy as an alternative or complement to orthodox medicine.



## CHAPTER FIVE

### SUMMARY, CONCLUSION AND RECOMMENDATIONS

#### Summary

This work was divided into five main chapters examining the care seeking practices of malaria among urban residents of Awoshie. The first chapter elucidated on the contribution of health to development bringing out the parallel relationship between health and economic development. Malaria as a public health concern revealed the economic burden that endemic areas face in the fight against malaria. Malaria is not a private family problem but a world problem that needs concerted efforts from the family and state to reduce its incidence. This role is what the UN has taken in its unfinished business of malaria as highlighted in the SDGs of Agenda 2030.

Literature reviewed revealed that the phenomenon of health seeking behaviour takes into account a good appreciation of preventive health behaviour, illness behaviour and sick role behaviour. Factors influencing health seeking behaviour were discussed under sociocultural factors, demographic features, organizational factor and socioeconomic and accessibility factors.

Plural medical behaviour, an aspect of general health seeking behaviour was also discussed. The types of medicine and systems of medical practice recognized by the WHO in the practice of plural medical behaviour was examined. Further, factors that influenced plural medical behaviour were also deliberated.

The health care delivery system in Ghana was the next subject of discussion. The literature revealed that there were various stakeholders in the Ghanaian health care delivery system charged with responsibilities to ensure the safety of the public in terms of medical facility use and drug preferences. The country has a number of teaching hospitals and government and private institutions that manage the health problems of people out there. There is a mixture of allopathy and herbal medical practice in the country. The health sector is funded through government revenue and help from donor partners.

Delving into malaria, a brief trajectory about the discovery of the malaria parasite was discussed. Also various strains of the parasite were mentioned. The global disease burden surveying endemic areas in the world were discussed. The literature then narrowed down to the Ghanaian incidence of malaria identifying vulnerable groups and high transmission zones. Types of malaria in the sub region were further delved into. Some causes, symptoms and treatment of malaria were discussed. Interventions in malaria under the auspices of the National Malaria Control Programme in Ghana were examined.

Two theoretical perspectives; Andersen and Newman's health care utilization model and Good's 4As discussed the phenomenon of health seeking behaviour.

The third chapter of the work discussed the methodology employed in carrying out the research. A quantitative research design sampling 250 respondents using a KAP survey approach was detailed in this chapter. The study site, Awoshie was described. Limitations of the study were the issue of non-response rate, time allowed for the

thesis and financial constraints. The alternative of conducting a cross sectional studies through the administration of questionnaires in itself to collect unreliable and untrue responses from survey participants was also expected.

### **Conclusions**

The objectives of the study were to examine the knowledge, perceived causes and symptoms of malaria. Secondly, to identify common treatment options available in treating malaria, thirdly to identify some modes of prevention and lastly to ascertain to what extent people exhibit plural medical behaviour.

Concerning the perceived causes and symptoms of malaria, many respondents were aware that malaria was caused by the bite from the anopheles mosquito, though a few contended that malaria was a spiritual disease. The campaign, that only mosquitoes carry malaria, seemed to have gone down well with respondents in this area. Some symptoms were also mentioned in consistence with available literature. Residents did not have a clear idea of the difference between uncomplicated malaria and simple malaria.

Common treatment options used in the treatment of malaria in the study area was orthodox medicine and herbal remedies obtained from drug outlets like the chemical sellers', drug stores and pharmacies. Some people self-treated uncomplicated malaria once they recognized the symptoms. Some ACTs were well known for treating malaria and other herbal remedies prepared at home or purchased from common drug outlets were used. Other drugs for managing the complication of symptoms that came with malaria were the haematinics and supplements.

Some modes of preventing malaria were the insecticide treated bed nets widely known in the study area, mosquito coils, mosquito repellents, weeding around one's surroundings and insecticide sprays. Some respondents were of the view that malaria had nothing to do with the mosquito net and relied on God to heal them since malaria was inherited.

To a significant extent, respondents combined orthodox medicine with herbal remedies. The availability of herbal remedies, its affordability, accessibility or easier acquisition in relation to orthodox medicine and acceptability of herbal treatment suggests that the question of herbal remedies for the treatment of malaria needs to be examined.

### **Recommendations**

- Malaria is a public health concern that needs the concerted efforts of basic stakeholders such as CHAG, MOH, GHS and the lay person who suffers the disease. Most indigenous people are knowledgeable about herbal remedies that could be incorporated into the treatment guidelines of malaria treatment in the country. This suggests that well packaged herbal remedies should be made available in hospital pharmacies and not just limited to drug stores and chemical shops outside the hospital setting.
- The Ghana Medical Association and Traditional Medicine Practice Council should recognize each other as partners in the fight against malaria and not yield to antagonism arising from the sense of superiority that shrouds the

former at the expense of the latter. In practical terms a patient who reports to the hospital as a last resort to the treatment of malaria should not be insulted by health practitioners who relegate the potency of herbal medicine.

- The health practice within the country is largely curative – based. It is a suggestion to complement the curative practice with preventive measures through health education that would foster behavioural change. In this respect, the health beliefs of indigenes need to be respected and incorporated into the health curriculum of all health teaching institutions in the country.
- Lastly, the governing bodies that regulate the activities of health practitioners in this country need to be active in suggesting treatment options and localize some of these options, thus, making them affordable. For instance, insecticide treated bed nets need to be locally produced to reduce the dependence on foreign expertise and ensure a localized contribution to the fight against malaria since these options come at a cost and so individuals may compromise the prevention modes.



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**Appendix**

Questionnaire

**QUESTIONNAIRE ON “CARE – SEEKING PRACTICES ON MALARIA”**

I am a student of the University of Ghana researching into care – seeking practices in malaria. Please be assured of complete confidentiality as the work is solely for academic purpose. Thank you for accepting and making time to answer this questionnaire.

<b>General Introduction</b>	<b>Tick where applicable to you [x]</b>
1. Mention any two health problems in this community that affects	
Men:.....	.....
Women:.....	.....
Children:.....	.....
2. Generally where do people seek care in this community?	
3. Identify any two problems people encounter in seeking health care in this area?	

**Part A: Knowledge about Malaria** **Tick where applicable to you. [x]**

1. Do you think that when you fail to sleep in a mosquito treated net for once you might get sick? Yes [ ] No [ ]
2. Do you know any symptoms of Malaria? Yes [ ] No [ ] Mention them:
3. What are some causes of Malaria you know? Mention them:
4. What are your sources of knowledge about Malaria? Tick all applicable  
 Public Campaigns [ ] School [ ] Print media [ ] Electronic media [ ]  
 Parents/friends [ ]
5. Do you think Malaria is a spiritual disease? Yes [ ] No [ ]

6. Do you indicate your allergies to health attendants when they give you medicine or attend to you?

Yes/ always [ ]      No/ never [ ]      few times [ ]      Most often [ ]

7. Do you take your time to read about contra-indications of medicines bought?

Yes/ always [ ]      No/ never [ ]      few times [ ]      Most often [ ]

**Part B: Attitudes to seeking Health Care**

1. Is it acceptable to self-treat acute malaria conditions?

Yes [ ]      No/ never [ ]      few times [ ]      As often as possible [ ]

2. Is it acceptable to self-treat chronic malaria conditions?

Yes [ ]      No/ never [ ]      few times [ ]      As often as possible [ ]

3. Is it acceptable to order blood test on self for diagnostic purposes?

Yes [ ]      No/ never [ ]      few times [ ]      As often as possible [ ]

4. Is it acceptable to order blood test on self for monitoring purpose?

Yes [ ]      No/ never [ ]      few times [ ]      As often as possible [ ]

5. Are you reluctant to consult for psychiatric problems?

Yes/ always [ ]      No/ never [ ]      few times [ ]      Most often [ ]

6. Do you downplay your symptoms of malaria?

Yes/ always [ ]      No/ never [ ]      few times [ ]      Most often [ ]

7. Do you attend hospital care late, when things get serious?  
Yes/ always [ ]      No/ never [ ]      few times [ ]      Most often [ ]
8. Do you work while sick?  
Yes/ always [ ]      No/ never [ ]      few times [ ]      Most often [ ]
9. Are you satisfied when you treat yourself?  
Yes/ always [ ]      No/ never [ ]      few times [ ]      Most often [ ]
10. Are you concerned about confidentiality matters when you get sick?  
Yes/ always [ ]      No/ never [ ]      few times [ ]      Most often [ ]
11. Is it easy finding a doctor to treat you properly?  
Yes/ always [ ]      No/ never [ ]      few times [ ]      Most often [ ]

**Part C: Health Practice on Malaria**

1. What are some drugs you take for self-medication when you have malaria? List as many as you can.
2. In the past month have you visited any of the following? Circle all applicable. a. Hospital /Clinic [ ]      b. Herbal Centre [ ]      c. Faith healer [ ]      d. Drug store/Chemical seller [ ]      e. Other [ ]

3. Which would you use to treat malaria? Herbal medicine only [ ] Hospital prescriptions [ ] Both [ ]
4. Do you take malaria drugs exactly as prescribed?  
Yes/ always [ ] No/ never [ ] few times [ ] Most often [ ]
5. Do you take herbal medication together with antimalarial prescribed?  
Yes/ always [ ] No/ never [ ] few times [ ] Most often [ ]
6. Would you treat fever at home or take it to the hospital?  
Yes/ always [ ] No/ never [ ] few times [ ] Most often [ ]
7. Do you continue to do exactly the same things which cause malaria while taking drugs for it?  
Yes/ always [ ] No/ never [ ] few times [ ] Most often [ ]
8. Do you take drugs (as a preventive measure) even before you are diagnosed with malaria?  
Yes/ always [ ] No/ never [ ] few times [ ] Most often [ ]
9. Are you fine with nurses prescribing medication informally for you?  
Yes [ ] No [ ]
10. Do you think it is necessary that anytime you go to the clinic /hospital your vital statistics such as blood pressure, temperature should be taken?  
Yes [ ] No [ ] Sometimes [ ]

11. Would you buy antimalarial for self-treatment from a drug seller who is not a pharmacist?

Yes/ always [ ]      No/ never [ ]      few times [ ]      Most often [ ]

**Part D: Associated health issues and accessibility**

1. Is the doctor's diagnosis almost predictable at each visit? Yes [ ] No [ ]

2. Which type of health facility do you visit when sick? Choose all applicable. a.

Hospital/Clinic [ ]      b. Herbal Centre [ ]      c. Faith healer [ ]

d. Drug store/Chemical seller [ ]      e. Witch doctor [ ]      f. Other [ ]

3. How do you finance your health care costs? Choose all applicable. a. National Health Insurance [ ]      b. Private Mutual Health Insurance [ ]      c.

Self-sponsored/Out of own pocket [ ]      d. Other .....

4. What type of ailments do you report as being sick? List as many ailments as possible.

5. Do you have a personal doctor? Yes [ ]      No [ ]

**PART E: Demographic Characteristics**

1. Sex: Male [ ]      Female [ ]

2. Age: .....

3. Main occupation:.....

4. Marital status: a. Single [ ] b. Married [ ] c. Separated/ divorce [ ] d. Widowed [ ]
5. Ethnicity: a. Akan [ ] b. Ewe [ ] c. Guan [ ] d. Ga – Dangme [ ] e. Kusasi [ ] f. Dagomba [ ] g. Gonja [ ] h. Frafra [ ] i. Other.....
6. Religious affiliation: a. Traditionalist [ ] b. Christian [ ] c. Islam [ ] d. Other .....
7. Highest educational level: a. Primary [ ] b. JSS/JHS [ ] Vocational/Technical [ ] d. Secondary [ ] e. Training College [ ] f. Polytechnic [ ] g. University [ ] h. Post graduate [ ] i. No education [ ]
8. Income per month (Gh¢) (from any source): below 200 [ ] 201-399 [ ] 400 – 599 [ ] 600 – 999 [ ] 1000-1499 [ ] 1500 – 1999 [ ] 2000 – 2999 [ ] 3000 – 4999 [ ] 5000 and above [ ]

