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Changes in Treatment for Malaria: Western Influence on Indigenous Practices

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Fall Semester, 2000

To my mother:

For all the endless nights you spent awake, the tears that you cried, and the prayers you said on my behalf. You are my constant inspiration and everything I do is a result of your unrelenting efforts to give me the best of everything.

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Thank you for welcoming me into your home. Your kindness and hospitality will always be appreciated.

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Table of Contents

Section Page

Abstract…………………………………………………………………………..4

Introduction……………………………………………………………………….5

Methodology………………………………………………………………………8

Section I: Perceptions of Malaria…………………………………………………12

Section II: Indigenous and Western Treatments for Malaria………………………17

Section III: Modifications in Treatments for Malaria……………………………...25

Section IV: Herbal Clinics and Government Policy………………………………28

Summary/Conclusions…………………………………………………………..36

Bibliography……………………………………………………………………..37

Appendix A……………………………………………………………………….40

Appendix B……………………………………………………………………….43

ABSTRACT

This paper assesses the impact of western medical influence on the use of indigenous medical practices for malaria. The research was conducted through interviews and observations in four communities within the city of Cape Coast. Section one focuses on the perceptions of malaria held by members in the communities, while section two determines the traditional and western treatments administered for malaria, including the reasons that support individual choices. Section three centers around the shifts in treatment for malaria occurring during individual lifetimes and across generations. Lastly, section four places the collected data in context of private and government efforts to meet the health care needs of malaria sufferers. The conclusion provides recommendations for the future of health care policies in Ghana.

Introduction

Malaria is the single most important cause of morbidity in Ghana. According to statistics in the Roll Back Malaria Strategic Plan, malaria accounts for forty percent of all outpatient attendance, with children under the age of five years accounting for forty percent of these patients.[12] With such high mortality and morbidity rates in Ghana, malaria treatment and management is a prime concern for everyone in the population. Health officials spend long hour searching for ways to control the spread of malaria, while sufferers of the disease spend time and money trying to find the most effective cure. Treatments for malaria come in many forms, but usually they fall within Two main medical systems currently practiced in Ghana: western and indigenous.

European settlement introduced western medical practices, often described as "modern," "scientific," "cosmopolitan," and "biomedicine," into Ghana.[3] British colonization officially sanctioned western health policy as the model for optimal health attainment, and even though colonial rule has officially been eradicated in Ghana for the last decades, the government continues to build health policies based on this model. With a western-influenced health policy in place, malaria treatments are usually synthetic and imported.

Although the official government health policy sanctions the western management of malaria, approximately seventy percent of Ghana's population depends on indigenous forms of medical treatment.[4] Indigenous medical practices,[5] also termed "traditional" "ethnomedicine," and more derogatorily as "primitives," "fetish," "juju", and "unscientific,"[6] are methods practised by the indigenous population to serve their health need. Indigenous medicine does not refer to a system that is stagnant or unchanging but rather the way in which a population utilizes its current resources in conjunction with its value system to provide optimal health for the population.[7] Included in the traditional healing system are traditional healers. P.A. Twumasi, a prominent scholar on medical sociology and specifically the study of western and indigenous medical practices, defines four man types of traditional healers: traditional birth attendants, faith healers, spiritualists, and traditional herbalists.[8] In the case of malaria, Ghanaians normally consult traditional herbalists for treatment considering that traditional birth attendants serve gynecological needs and spiritualists and faith healers deal with diseases usually associated with what Twumasi

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[1] Roll Back Malaria Strategic Plan for Ghana 2000-2010. Draft, 2000; 2-3
[2] 1999 morbidity rates for all out-patient cases in Ghana, located in Appendix 13.
[3] Senah, Kodjo Amedjorteh. Money Be Man: The Popularity of Medicines in a Rural Ghanaian Community. Amsterdam: Het Spinhuis, 1997; 52
[4] Ayitey-Smith, E. Propects and Scope of Plant Medicine into Health Care. Accra: Ghana University Press. 1989; 2
[5] In this report "indigenous" and "traditional" are used interchangeably.
[6] Senah, 52
[7] Twumasi, P.A. Social Foundations and the Interplay between Traditional and Modern Medical Systems. Accra: Ghana University Press, 1988; 7.
[8] Twumasi, 8

terms as "magico-religious" causes.[9] But the majority of Ghanaians view malaria as in imbalance in physical constituents and consider the use of medical herbs as effective treatments, therefore play a large role in the treatment of malaria. With malaria being such a common disease, many Ghanaians have sufficient knowledge of the medicinal herbs that alleviate the symptoms of malaria and therefore usually self-administer treatments.

Ghana's current medical policy is western-influenced, but Ghanaians have been utilizing traditional treatments long before the introduction of the first. Europeans settler. And with seventy percent of the population still relying on indigenous medicine, one questions------ how has the introduction of western medical practices affected the existing traditional treatments for malaria ? This question holds extreme importance to Ghana's public health status, because as Twumasi explaines the existence of these two medical system influences the health status of the entire population.

> *But these two institutions of medicines hold different, though not mutually exclusive, world views guiding their respective practices. Any conflict, therefore, which may arise between these two forms of research medicine has a disruptive effect on the well-being of the people in their pursuit of their medical attention, especially so in the contemporary setting of many rapid social changes.*[10]

Though one clearly sees the effect of western influence in the daily lives of Ghanaians, one must take an in depth look at the population. To gaga the actual influence of western medicine on indigenous medical practices, one must how an individual chooses to treat malaria and the motives behind his choice. This data in conjunctions with environmental and cultural factors affecting choice elucidates precisely how western and indigenous medical systems exist in Ghana and to what extent western medical practices have influenced the use of traditional medicine for the treatment of malaria. Extrapolating the conclusive data from the research into the influence of western medical influences on traditional treatment in the case of malaria provides insight into the existence of these medical systems in relation to Ghana's entire health care systems.

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[9] Twumasi, 12

[10] Twumasi, P.A. Medical Systems in Ghana. Accra: Ghana Publishing Corporation, 1975; 2.

Methodology

Data collection:

In order to obtain a wide range of data on the influence of western medical practices on the treatment of malaria, I focused my research on four communities within and surrounding the Cape coast area. The four communities chosen represent various educational levels, socio-economic backgrounds and urban accessibility in order to incorporate those factors into the analysis of the respondents' answers. Researching four various communities within an urban setting was crucial to understanding the affect that western medical practices for malaria have had on the Ghanaian population. The four communities chosen included:

- ❖ University of Cape Coast - professional community, high educational level, urban
- ❖ OLA Estates - working class community, medium, educational level, urban
- ❖ Anafo - fishing community, low educational level, semi-urban
- ❖ Duakro fishing village, low educational level, semi-urban/rural

The main data collection strategy focused on interviews with four to five people from each community, varying in ages and sex, in addition to several groups interviews. In the university community I interviewed three professors / research fellows and conducted a group interviewed with four first year students. I organized four interviews in both the OLA Estates and Anafo communities, concluding with three individual conversations and one group interviewed in Duakro. The selection of interviewees was purposive, in which I utilized previous contacts, random selections and associations with random selections, and associations with the members of each community Through out my research, the "snow ball" process one interview led to a contact with another person within the community propelled the selection of interviews in each of the community. The objective of my interviews was to

1. determine the perception of malaria
2. understand choice of treatment and personal reasons behind choice
3. determine how the impact of western medicine has influenced treatment selections
4. place the previously mentioned objective in context with cultural / community back ground and current state of living[11]

In addition to interviews, simple observations of each community's physical layout were also taken into consideration when analysis data.

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[11] A list of the questions and their explanations are located to Appendix A.

In addition to collecting through interviews within each community I surveyed a variety of treatment centers and conducted interviewees with both western /orthodox practitioners and traditional healers. In order to fully understand the impact of western medical influence on malaria, I wanted to determine how this influence is reflected in the treatment facilities available to the community. I also wish to gain insight into the backgrounds of patients (i. e age, occupation, locality) seeking treatment at each facility and the average rates of patronage.[12] Therefore I conducted interviews at :

- Two local hospitals / clinics:
  - Central Regional Hospital – large hospital located within Cape coast
  - Komenda Community clinic – small clinic located in Komenda (a village approximately 30 kilometers west of Cape Coast)

- One traditional healer:
  - Duakro native herbalist

I conducted inventory surveys at six area pharmacies / chemical sellers (four in Cape Coast, two in Komenda) in order to assess the presence of orthodox medicines for malaria in comparison to traditional remedies.

Finally, with an interest in the present efforts to maximize the interplay between traditional and western medical practices for malaria, I organized interviews with two physician at herbal clinics. One privately owned clinic, Agrata Natural Health Clinic, and one government-sanctioned clinic, Mampong-Akupem Center for scientific Research into plant Medicine. My questions for these institutions were similar to the questions asked of the other treatment centers but with the intention to understand the reasons behind the decision to approach traditional medicine with a western / orthodox approach.[13]

I also researched the official government policy were crucial aspects in the analysis of my field data.

Data analysis:

The data analysis process consist of reviewing my interview notes of meetings conducted in each of the four communities. Essentially I wanted to answer the question, "Who makes what choice for what reason?" Therefore I look for basic trends in the response of the interviewees and attempted to place their responses in context with their cultural environment / way of living.

I examined the data I received from the various treatment centers to discern the correlation between their responses and the community interviewees.

[12] Please refer to Appendix A.
[13] Ibid.

Lastly, after I received all the data from the community interviews and treatment centers, I place the data in the lager context of the official government policy to grasp how well the policy aligned with the community cultures.

Limitations:

Throughout the research project I encountered a few limitations that hindered the depth of my work. With the time constraints given for the project, I was not able to assess the effect of western/ orthodox medical influence on any large sections of the populations (as this was my original intention). Therefore the scope of my study was limited to four communities in Cape Coast. Although the communities were in no way representative of the entire Ghanaian population, they provided insight into a wide range of cultures, opinions and lifestyles. I also encountered hindrances with the selection of those I interviewed. I was basically limited to a small number of associations I maintained within each community and the subsequent interviews that I was able to access from the associations. Hence, at times, my interviews were weighed in no directions in terms of gender and age. During the course of my research I obtained two translators for the Anafo and Duakro communities. Although I specified to each interpretations of the interviewees' responses. Consequently, my data collection reflected biases. In spite of the apparent biases, my research revealed the effect of western medical influence on the use of indigenous medical practices in four communities located in one urban setting. Though not representative of the entire Ghanaian population, the range of western influence manifestations that existed in this small urban setting disclose the enormous variance that is undoubtedly present throughout the entire nation. Therefore the conclusions in this study can be viewed and applied to the Ghanaian population at large.

Section I

Perceptions of Malaria

To fully grasp the effect of western medical influence on indigenous medical practices in the management and treatment of malaria, it is crucial to examine the remedies employed for treatment and the reasons cited in support of them. However, one must first place an individual's rationale in support of a particular treatment in the context of his perception[14] of malaria. The perception of a disease generates the treatments administered for a cure. Hence, in analyzing the management of malaria in a community, it is important to comprehend the definitions for malaria upheld by individuals within the community.

Dr. Stella Boame, physician at the Central Regional Hospital in Cape Coast, defines malaria as "an infection caused by the plasmodium, transmitted by a vector, usually in the form of the female (Anopheles) mosquito". The physician proceeds to cite the symptoms of malaria as "headaches, chills, fever, shiver (rygose), weakness, muscular and joint aches, sometimes vomiting and fever."[15] Through Dr. Boame's explication aligns with the accepted scientific definition for malaria, research into the four communities' perceptions of malaria reveals various interpretations of the disease. The primary discrepancy in the interpretation of the disease is the cause. Although all communities cite mosquitoes as specified cause for malaria, two of the four communities support other origins for the disease. Generally, the trend across the communities follows education level – as education levels increase, the factors contributing to malaria decrease.

With education a prime determinant in the cause interviewee attribute to malaria, the Universities of Cape Coast (U.C.C.) interviewees expectantly connect one cause to malaria- the mosquito. All of the interviewees (professors and research fellows). With the exception of the students posses masters degrees in their field of study, and all of them cite mosquito bites as the sole cause of malaria. Some interviewees reveal their scientific knowledge of the disease, by even asserting that only the female mosquito is capable of transmitting the disease. Although the professors and researchers within the U.C.C. community hold the mosquito as the one cause of malaria, the student interviewees propose a broader range of cause. Phrases such as, living in a dirty environment," and having stagnant water around," accompany the scientific cause of the mosquito bite. One student even states that "too much sun" causes malaria.[16] Though the

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[14] perception in this research context is defined as the cause and symptoms an individual believers are associated with malaria

[15] Dr Boame, Stella. Physician at Central Regional Hospital. Interview by author, November 13,2000, wor journal, possession of author

[16] Anonymous interviewees. Students-University of Cape Coast. Interview by author, November 20, 2000, work journal, possession of author.

descriptions maintained by the students all relate to conditions which breed mosquitoes, it is interesting to note that their responses move away from a strictly scientific cause and expand to include environmental circumstances. Their responses confirm that the more education a person obtains the stricter is his definition of malaria.

The responses in the OLA estates community are extremely similar to those in the U.C.C. community. All interviewees confirm mosquito bites as the single cause for malaria.
All respondents, with the exception of one, completed the Senior Secondary School level, with the one exception obtaining vocational training.

Multi-causal explanations for malaria emerge in the responses of the Anafo and Duakro communities. All respondents cite a variety of origins of the disease, with recurrent causes being: a)eating too many "sweet" foods (i. e gari, plantain, etc), b) eating too many oily foods, c) the presence of rubbish or dirt, and, d) walking too much in the sun.[17] No Anafo or Duakro respondent (with the exception of one) possess any level of education higher than Junior Secondary School, and the majority possess either primary school level or no schooling at all. Although all respondents in Anafo credit many causes to malaria. One logical explanation or these exceptions involves tracing the origin of the Duakro village. The duakro community consists of migratory fishermen from the Volta region who travel to Cape Coast in alignment with the fishing season. The Volta region, which contains Volta Lake, attracts many mosquitoes; hence the presence of malaria I extremely high. The people from this region possibly maintain higher level of awareness about malaria than those from other regions in Ghana. From the responses of the interviewees, a trend correlating with level of education materializes. But one cannot espouse education as an independent variable that determines an individual's perception of malaria; one must analyze the factors accompanying educational background. Education is a "double-edged sword" in that it can be the cause and/or the effect of an individual's societal status, attainment of education is relatively unproblematic, while the attainment of high levels of education begets sound incomes and societal status. Varying qualities of environment accompany varying levels of socioeconomic status, and it is environmental differences that subsequently determine the perception of illness. Therefore, the various levels of education represented in the four communities also symbolize four different environments.

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17 Love-Yeboah, Richard. Athlete (Football)-Anafo. Interview by author, November 14, 2000,work journal, possession of author.

Considering that the symptoms of malaria resemble a variety of infectious diseases, an environment that does not encourage the presence of communicable diseases has the ability to isolate the cause and effects of malaria. The university and OLA Estates residents maintain a certain level of nutritional and sanitary conditions that alleviate the onset of many illnesses associated with an inadequate environment. Hence, the signs and symptoms of malaria can be identified correctly in the absence of other communicable diseases. In contrast, the Anafo and Duakro residents live in unhygienic surroundings and survive on foods with poor nutritional content – all conditions that generate a range of infectious diseases. In turn, the symptoms of malaria are difficult to distinguish from other diseases that plaque these communities, such as measles, parasitic infections, typhoid fever, and jaundice. In fact, many people in these communities associate the word "malaria" with any disease that produces the above mentioned symptoms. For example, one woman in Anafo, a fish seller by trade, explains that malaria has three "symptoms: measles, worms, and fever."[18] In this woman's opinion, malaria is a foundational disease that manifests itself through these diseases or "symptoms." A large portion of the interviewees from these two communities use the words malaria" and" fever" interchangeably, revealing that they perceive any rise in body temperature as malaria.

The varying perceptions of malaria collected in the data ultimately relate to the environments in which the field subjects subsist. The data not only reveals the components of each environment but also gives insight into the cultures fostered about the perception of illness in each environment. The communities with larger incomes, higher levels of education, and elevated socioeconomic status cultivate a systematic, "cause and effect" perception of illness. Hence, the definitions for malaria in these communities lean heavily towards verified scientific causes. While the communities with lower levels of socioeconomic status, consistently associate illness with their lifestyles. The people of the Anafo and Duakro communities live in an environment where illness is a part of daily life, so their perception of the cause of malaria reflects the components that make up their daily routine, including the foods that they eat. Kodjo Senah captures the fundamental idea of illness relating to lifestyle in his work, Money Be Man.

> From the perspective of medical anthropology, health problems are cultural phenomena. This is because they find their origin in people's working and living conditions and life styles; they are communicated to others in ways that are culturally patterned; they are explained and labeled in accordance with existing dominant cultural paradigms; and they are experienced in ways that are culturally patterned.

[18] Anonymous interviewee. Fish Monger-Anafo. Interview by author, November 15, 2000, work journal, possession of author.

Essentially, each community's perception of malaria is colored by the manner in which they associate with illnesses.

SECTION II

Indigenous and Western Treatments for Malaria

Perceptions of a disease are crucial to understand why an individual chooses a particular type of treatment, and the case of malaria is no exception. But in order to disclose the influence of western and indigenous treatments employed for malaria. The treatments available for malaria are almost as varied as the causes mentioned by the interviewees. To get a sense of the types of treatments available in the community, what follow is a description of both western and indigenous medical remedies for malaria based on the data collected.

Indigenous medical treatments for malaria (or what interviewees perceive as malaria) consist of a variety of herbal preparations. The line of treatment most utilized to combat attacks of malaria involves the leaves of a neem tree.[19] A Duakro village resident described an in depth method of treatment for using the neem tree.

> First obtain the tender (fresh) leaves of a neem tree, squeeze the juice out of them, and take this three times daily. If symptoms still persist, boil the neem tree with lemon and ginger, sit close to the pot and inhale the vapors for thirty-five minutes, or until the water cools. Then bath normally and drink the water (neem tree juice) for about a week.[20]

In addition to neem tree leaves, many respondents utilize a range of local plants and fruits such as pineapple skins, papaya leaves, guava leaves, and “fever” leaves or lemon grass.[21] The main method of preparation consists of boiling the herbs with water, draining the juice off the herbs, and drinking the mixture anywhere from three to six times a day. Usually patients add lime and sugarcane to the mixtures to induce appetite and neutralize the bitterness in the mixture, respectively. Most interviewees verify that the herbal remedies alleviated malaria symptoms within one to two weeks, with symptoms starting to subside after three days.

In addition to describing the methods for preparing herbal remedies, almost all interviewees ascertain that a herbal remedy’s ability to cause urination is essential to its curative powers. According to one Anafo woman. (herbal medicine) will cause you to urinate, it will start yellow than turn white, that is a sign that cured.[22] This is a reflection on the various perception of

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19 ommon name for local tree, Adzadirachta indica

20 Anonymous interviewee. Banker/Fisher-Duakro. Interview by author, November 17,2000, work journal, possession of author.

21 Common name for local plant, Cybopogon citratus

22 Anonymous interviewees. Native Herbalist-Anafo. Interview by author, November 16, 2000, work journal, possession of author.

malaria. Many respondents view malaria as an internal, physical incongruity manifesting itself through external symptoms (i.e fever, body aches, etc) In order to relieve the symptoms, one must rid the source of the disease from the body through excretion.

As with herbal remedies, there are assortments of western medical treatments for malaria. According to Dr. Boame the main treatments for malaria are three chemically produced drugs: chloroquine, fansidar (a sulfur based drug), and quinine, with chloroquine administered as the first line of treatment in all malaria cases.[23] These drugs can take the form of pills, syrups, and even injections. The length of duration varies for each drug – a chloroquine dose consists of eight tablets taken over three days, patients take fansider in three tablets as a single dose, and a quinine dosage consists of three tablets a day spread over a lengthy seven days. Although symptoms begin to subside after one day and are usually completely alleviated on the third day of treatment, the orthodox medicines all possess side effects or limitations. Certain malaria parasites develop a resistance to chloroquine and even if the drug can treat the parasite, severe itching usually afflicts the patient during treatment. Dr Boame claims her patients complain of a "ing-ding" sensation in their ears when she administers quinine to treat their malaria. Finally, fansidar has no significant side effects but patients allergic to sulfur cannot use it.

Just as an individual's environment shapes his perception of malaria, his surroundings also affect his treatment choice. One's environment dictates the options available for a cure. Hence, in an environment where orthodox medical treatments are readily available, one can effectively assess the impact of western medical influence on the use of traditional remedies. Consequently, the four research communities are located in or around the urban city of Cape Coast, which represents a community ingrained with western medical practices. But the curiosity lies in the extent of western medical influence on each community and how this influence relates to their current culture.[24] Interview responses to questions provide insight on the range of treatments used for malaria and the reasons supporting individual choices. The various western and traditional treatments each community employs reflect how western standards alter the criteria for accepting a treatment.

As with identifying the specific cause of malaria, the use of traditional or western forms of treatment for malaria materialize into a socioeconomic trend across the communities, although significantly less concrete. Generally, as one examines responses from the university campus to the Duakro village, a trend surfaces correlating those in the U.C.C. and OLA Estates community

[23] Dr. Boame, Stella. Physician at Central Regional Hospital. Interview by author, November 13, 2000, work journal, possession of author.

[24] "Environment" refers to physical surroundings while "culture" refers to the way one lives as a result of one's environment.

with the exclusive employment of western treatment for malaria, and those in the Anafo and Duakro communities employing an interplay between the two treatments. But this tendency maintains many discrepancies with numerous exceptions surfacing during the research. For example, an OLA Estates resident relies heavily on herbal treatment to handle the onset of malaria, while a young food seller in the Duakro village professes that the only treatment she receives for malaria is at the hospital. Therefore, socioeconomic status cannot solely ascertain the reasoning behind the use of a particular method of treatment, but rather it must be looked at in conjunction with particular factors attributing to choice.

Those respondents who cite western medical practices as their first line of treatment for malaria, support their choice with three main arguments: 1) scientific testing, 2) environmental control, and 3) convenience. The most popular response, scientific certainty of treatment, remains, in the opinions of the respondents, the greatest advantage of western medicine over traditional remedies. A university researcher comments, "[herbalists] don't know the quantity or amount of a particular chemical going into a drug. They don't have a systematic method for testing. One might take herbal medicine and overdose."[25] Specific knowledge of content levels and dosage quantities involved in western medical practices as opposed to the method of "trial and error" many respondents associate with traditional treatment provide reason for many interviewees to hold western remedies in a scientifically superior light. Other interviewees emphasize the capabilities of western physicians to correctly diagnose the symptoms of malaria, and thereby administer appropriate treatment. A young food seller in the Duakro village explains, " The hospital doctor knows exactly what is going on, when you tell him your symptoms… When you go to the herbalist and tell him your symptoms, he will give you something that may cause another illness, or not cure the one you have."[26] Clearly, scientific accuracy and approval are essential criteria for the acceptance of treatment.

Another issue western medicine advocates stress is the uncertainty of the hygienic conditions in which traditional medicine is prepared and sold. The group interview conducted with students at the university reveal many concerns about the sanitary conditions of herbal treatment. A first-year female student comments on the physical appearance of the herbal treatment environment, "The western medicine is cultivated in a pure environment, while the herbal medicine is cultivated in an eye sore."[27] A male first-year student, laments, "In trying to prevent

[25] Anonymous interviewee. Research Fellow at the Center for Development Studies, University of Cape Coast. Interview by author, November 7, 2000, work journal, ,possession of author.

[26] Anonymous interviewee. Food seller-Duakro. Interview by author, November 17, 2000, work journal, possession of author.

[27] Anonymous interviewees. Students-University of Cape Coast. Interview by author, November 20,2000, work journal, possession of author.

one disease, you cause another disease by cooking it in a pot,"[28] emphasizing his view of the deficient hygienic utensils utilized in the preparation of herbal medicine.

In a scenario where both scientific validity and hygienic certainty are established, the convenience western medicine provides in relation to traditional medicine serves to incline many towards its exclusive use. An OLA Estates reside confirms that he experienced phenomenal relief after using a herbal remedy for malaria, which entailed boiling the leaves of a neem tree[29] while sitting close to the mixture of inhale the vapors. The young man claims this procedure cured his malaria in a manner better than nay western treatment he had previously used. But when prompted as to why he does not rely on the herbal remedy on a regular basis for his malaria, he replies, "well I went back to western medicine because although it (herbal medicine) worked the preparation for the traditional medicine was too cumbersome."[30] The benefits of the herbal treatment are overshadowed by the effort it requires to achieve them. In addition to time-consuming and complex preparation, the speed with which western medicine alleviates the symptoms of malaria (three days as opposed to several weeks) serves as another advantages for western medicine.

The interviewees' arguments espousing the use of western medicine in the treatment of malaria are sound reasons, but interestingly, efficacy of western treatment never surfaces in any of their responses. In fact many of the respondents who experienced both forms of treatment usually extol the curative powers of the traditional remedies. The reliance on western medicine stems from the influence of urbanization and the culture it subsequently creates. The requirement of scientific testing and environmental purity for the acceptance of a drug treatment, is a direct result of the scientific educational influence brought by western influences now present in many of Ghana's cities and towns. The priority placed on the speed of the cure also reflects the "fast-paced life" an urban environment creates. Urbanization, as a component in the entire influence of "modernization" creates a culture that sustains a need for the western influences it is based upon.

In spite of the western medical influences that envelope all of the communities, a large portion of the interviewees name traditional medicine as their first line of treatment for malaria. Unlike the respondents who support western medicine, traditional medicine supporters consistently stress the superior efficacy of the herbs to treat malaria. Essentially, those who advocate the use of herbals treatment emphasize herbal medicine's ability to "cure all." An elderly herbalist in the Anafo community comments, The herbal treatment will cure *every* illness that is hiding in your body, and then you will be free."[31] Another Anafo woman comments, It is better to use the herbal

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[28] Ibid.
[29] Common name for local tree, Azadirachta indica.
[30] Anonymous interviewee. Procurer-OLA Estates. Interview by author, November 9, 2000, work journal, possession of author.
[31] Anonymous interviewee. Native Herbalist-Anafo. Interview by author, November 16, 2000, work journal, possession of author.

than the pills, (herbal treatments) make you strong and well."[32] These sentiments reflect the feelings of many who rely on the herbal treatment to maintain sound health.

As stated before, many of those who rely on herbal medicine live in an environment that produces a myriad of infectious diseases including malaria. Unlike western medicine, many herbal treatments are usually not designed to administer a cure for one specific disease, but rather produced with a variety of methods in order to treat a range of ailments. In act one OLA Estate resident remarks, " Herbal medicines have a way of being complex."[33] Ironically, the same quality that many advocates of western medicine view as a disadvantage for traditional medicine is the same quality that motives others to rely on herbal remedies. Hence, one motivation behind treating malaria with herbal remedies, and a direct result of the multi-causal perception of malaria, is the quality of the environment.

Not only do the respondents employ herbal remedies to treat attacks of malaria in addition to many other infectious disease, but many utilize them as a preventive method. Many respondents who treat malaria with herbal remedies such as the inhaling the vapors of boiled neem tree leaves or drinking the juice of boiled pineapple skins and lime, also employ herbal mixtures on a daily basis in order to prevent the onset of malaria. A young woman resident of OLA Estates admits that she relies heavily on herbal medications for the treatment of malaria. Although she holds a Senior Secondary school level of education and mentions mosquitoes as the only cause of malaria, she still relies on the herbs as preventative method for malaria. "Normally, I don't want to go to the hospital, I use local herbs…Hospitals cure faster, but the local herbs help you to prevent it."[34] The woman also attributes her use of herbal mixtures for treatment of malaria to her upbringing. "In my family house, they always believed in local herbs, so I've been practicing it since my infancy."[35]

This young woman's upbringing reveals insight into the motivation behind using herbal remedies as prevention against malaria. Until the introduction of western medicine, the Ghanaian population did not know the scientific origin for malaria. Since many Ghanaians could not ascertain the specific cause of the disease's onset, herbal treatment as a preventative tactic remained a logical control measure for the disease.

Unlike the advocates of western medicine, those who actively treat malaria with herbal remedies also depend greatly on the use of western forms of treatment. This population utilizes a combination of western and tradition methods to meet their health care needs. Interestingly, the

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[32] Anonymous interviewee. Herbal Seller-Anafo. Interview by author, November 15, 2000, work journal, possession of author.

33Anonymous interviewee. Procurer-OLA Estates. Interview by author, November 9, 2000, work journal, possession of author.

[34] Anonymous interviewee. Seamstress, African Art Buyer-OLA Estates. Interview by author, November 8, 2000, work journal and audio tape, possession of author.

[35] Ibid.

interplay between the two medical regimens reflects the extent of western influences in their lives. Urbanization creates a lifestyle that depends highly on the consumption of western products, but within this overarching urban culture lies sub-cultures with varying degrees of exposure to "modern" Living. Consequently, many communities practice and depend on methods employed by their ancestors. This produces a discrepancy between the solutions promoted by western influence and the actual lifestyles maintained by the population. Consequently, communities depend on traditional forms of medicines to "fill in the gaps," where western influence has failed to affect their lifestyles.

Section III

Modifications in Treatments for Malaria

Current treatments employed for malaria reflect the conditions of individual environments and reveal the extent to which western influence has penetrated each community. However shifts in treatment occurring within an individual's lifetime or throughout generations, in conjunction with the reasons mentioned for these shifts expose the various manifestations of western influence. Two main manifestations of western influence are urbanization and education. These two pathways of influence are the main reasons behind the shift in treatment from indigenous to western medical practices.

Urbanization, according to interviewees with either professional or working class societal status, are the basis for the shift from traditional to western medical remedies in the treatment of malaria. When prompted about the treatment strategies of previous generations, most of the western medicine advocates state that their parents exclusively patronized western remedies. For those whose parents participated in herbal remedies to cure malaria, many attribute the m0odification in treatment to the difference in surroundings. One university professor, who reveals that he formerly used traditional treatments for malaria, but now only utilizes western medicines, ascribes the change to the move from a rural setting to an environment where orthodox medicine is easily accessible. "I am close in proximity to the hospitals and far away from a traditional healer. Plus, my health care is free with the university."[36]

In this community, the effect of western influence is expressed not only through transformation to physical environments that possess access to western medical remedies, but also through adoption of a western manner of life. The interviewees with professional or working class status live and work in an urban setting, consequently they adapt to the physical and material characteristics that accompany western culture. However in adapting to physical attributes, the urban dwellers subsequently adopt many of the practices and philosophies of western culture. Thus the shift from traditional to western medical practices results from lifestyle changes which now align better with western medical solutions.

Those respondents in lower socio-economic classes, living in semi-urban areas also attribute the shift from indigenous to western medical practices to urbanization. But with this group of respondents, it is not the "modern" culture resulting from urbanization, but rather the scarcity of indigenous herbs that cause them to make use of western medicines. One young man

[36] Anonymous interviewee. Senior Lecturer in the Department of Ghanaian Languages, University of Cape Coast. Interview by author, November 8, 2000, work journal and audio tape, possession of author.

In Anafo points out that although he prefers to treat malaria with "fever" leaves, "they are hard to find in the bush at times.[37] A driver in Duakro also reveals that inability to obtain the herbs he normally uses to treat malaria forces him to utilize western medicine. One man in Duakro poignantly emphasizes this point.

> The gods had blessed the lands [of previous times], rains produced fresh leaves, now with War and other things, the rains do not come…The rain does not fall as in that time [of the Ancestors], the leaves are not there because of the dry season. Therefore malaria has Become common in Africa. Therefore, if the leaves are not there, where do you get Those local herbs to treat malaria.[38]

The detrimental effects of urbanization the natural environment marginalized the supply of herbs traditionally employed to treat malaria. Hence, herbal scarcity not lifestyle adaptation forces many respondents to adopt western medical practices.

In addition to scarcity of medicinal plants, many respondents living in semi-urban communities cite scientific education as the foundation for the change from traditional to western medicine. The British colonizers introduced western medical practices along with science education into Ghana in the seventeenth century.[39] With the onset of scientific education came the elucidation of the cause for malaria, and consequently the colonizers endorsed western treatments over traditional treatments. Therefore, members of the Anafo and Duakro communities identify the influence of western science culture as the cause of malaria treatment shifts. While accessibility to health care facilities remains the popular explanation for shifts in previous to present generations, predominance of western education explains the shift from present to future generations. Though most adults in the Duakro exclusively treat their children with western forms of treatment. When prompted for motivations behind this trend, one man in Duakro answers, "Because of education…The health advisors now advise everyone to use western medicine." The respondent proceeds to give an example, "Take for instance prenatal care, when a woman is going to have a baby they give her malaria drugs, then when she goes the weigh[40] the baby, they advise her to give the baby chloroquine." [41] The main sentiment among this group reveals that emphasis of a particular method, not necessarily adoption of a western culture, form the basis of the medical treatment transformation. The move from traditional areas to urban environments results from

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[37] Lover-Yeboah, Richard. Athlete (Football)-Anafo. Interview by author, November 14,2000, work journal, possession of author.

[38] Anonymous interviewees. Collection of men-Duakro. Interview by author, November 17, 2000, work journal, possession of author.

[39] Senah, 52.

[40] "Weighing" of babies is equivalent to a medical check up.

[41] Anonymous interviewees. Collection of men-Duakro. Interview by author, November 17, 2000, work Journal, possession of author.

Western educational practices, but neither scientific education nor physical transformation in environments, creates the complete adoption of western culture in every community. Analysis of the four communities confirms this hypothesis. Therefore a major dilemma is presently facing Ghana-the practice of a foreign medical policy that does not align with its varied cultures.

Section IV

Herbal Clinics and Government Policy

The field data collected in the research reveals a variety of perceptions, management, and opinions about malaria. And all of these varying factors ultimately reflect the equally varying environments which produce them. Nevertheless, since the introduction of western influence nearly five centuries ago, and official sanctioning of its medical practices with British colonization, western approaches for the treatment of malaria remain the model by which all Ghanaians must attain optimal health. With the obvious problem that this particular set-up creates, the government and private practitioners continually attempt to provide a scientifically verified interplay between the two medical systems. Private and government-sanctioned herbal clinics that approach traditional medicine with western standards are currently the most prominent, visible manifestation of these efforts. In addition, the government policy on malaria maintains action items that incorporate traditional strategies for the management of malaria. But upon close analysis of these efforts, the question still remains-what amount of these efforts are based on detailed study of the numerous environments and the subsequent cultures that they produce present in Ghana? In the ends, health care strategies are successful based on their ability to effectively encompass of the needs of all applicable communities.

Herbal clinics exemplify the interaction between western medical practices and indigenous medicine. Senah provides a thorough description of the characteristics of this interplay.

> Herbal clinics operate mostly in the urban center along the lines of modern bureaucracies: There is a reception where patients" records are kept, a consulting room, and a dispensary. A few others admit patients. Typically, the herbalists here behave like the modern doctor- They have complimentary cards with the title 'Dr.' affixed to their names; they dress in White over-coats and use modern medical equipment such as weighing scales, stethoscope, And sphygmomanometer in their practices. Medicines dispensed here are mostly herbal But are often prepackaged and labeled with the instruction for use.[42]

The Agrata Natural Health Clinic and the Mampong-Akuapem Center for Scientific Research into
Plant Medicine represent privately-owned and government-sanctioned herbal clinics, respectively. Each center formulates malaria remedies using medicinal plants as a basis, but while the Agrata herbal clinic obtains its malaria remedies from formulations produced by western trained physicians, the Mampong-Akuapem clinic researches already existing herbal remedies from

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[42] Senah, Kodjo Amedjorteh. Money Be Man: The Popularity of Medicines in a Rural Ghanaian Community. Amsterdam: Het Spinhuis, 1997; 62-63.

indigenous healers and produces formulas based on their initial remedies. Both the Agrata and Mampong-Akuapem herbal clinics base their malaria remedies on a combination medicinal plants, with the extracts from neem tree leaves being a main component in the remedies. But as Senah described, unlike other herbal remedies, these centers scientifically test, adequately dose, and concisely pack their herbal remedies.

The data collected reveals that large portions of Ghanaians rely on an interplay between traditional medicine and western drugs to treat malaria. Therefore, herbal clinics should encompass the health needs of the majority of the population, but research into these institutions reveals that they fail to reach many of the communities from which they acquire their herbal resources. One factor that isolates herbal clinics from certain communities is cost. Data collected from interviews at both the Agrata Natural Health clinic and the Mampon-Akuapem Center for Scientific Research into Plant Medicine reveal the average cost of a herbal remedy for malaria is approximately 25,000 cedis, while the average cost for one course of chloroquine is only three hundred cedis. In addition, an interview with the Duakro village traditional healer reveals that he usually does not charge for his services. "God gives us the medicine without charge, how can I charge people."[43] So where does that leave the people of the community? Traditional medicine can be obtained for free or with very little money. Western medicine has become so ingrained in the culture, and malaria such a common disease to combat, the price for an orthodox treatment of malaria is of financial insignificance for a large portion of the population. But the price for scientifically tested herbal treatments, does present a financial burden for many individuals with lower income levels. Ironically, the verification of an indigenous, cost-free remedy generates greater financial burdens than imported, synthetic drugs. Where does that leave the woman who relies on traditional treatments for malaria, but would greatly benefit from the scientific verification of herbal medicines because an over dosage of a malaria treatment caused her son to fall critically ill? Though herbal clinics incorporate an interplay between the two medical systems present in Ghana, which reflects the medical practices of a large majority of the population, their actual consumer audience is small-even compared to users of orthodox medicine.

If the incorporation of indigenous medicine into western practices is not serving the population who depend on the traditional treatments, then what is the purpose of approaching indigenous medicine with western standards? Dr. Archibald A. Sittie, malaria researcher and deputy director at the Mampong-Akuapem Center for Scientific Research into Plant Medicine, cites two reasons why he chooses to approach malaria treatment in this manner: 1) the use of local people as a resource for the development of anti-malaria drugs and 2) "purely academic"-as a

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[43] Anonymous interviewee. Herbalist-Duakro. Interview by author, November 17, 2000, work journal possession of author.

photochemistry his interest in plant mechanics creates curiosity in its healing properties.[44] Interestingly, Dr. Sittie does not mention researching herbal medicines with the purpose of incorporating the health needs of those communities who rely on them. The use of local people as a "resource" to develop anti-malaria drugs connotes the image that researchers use scientifically based herbal and monetary attributes. According to Akua Britwum, senior researcher at the Center for Development Studies, U.C.C. , the apparent exploitation of natural resources is a result of the international influence (which includes western influence) over the production of herbal remedies.[45] Though herbal remedies obtain their basis from materials indigenous to Ghana's health care system, even when utilizing indigenous resources.

In an attempt to provide sufficient treatment and management of malaria for Ghana's entire population, the local government incorporates a variety of strategies in the revised policy on malaria control. Previous to the most recent revision, Ghana's official policy on malaria control supported a "case by case" management-that is, malaria was treated on an individual basis with on observance of the community. Government policy creators in conjunction with the Ministry of Health, World Health Organization, and other health policy organizations recognized the failures of the program and determined to create a policy which alleviated the problematic issues in the former policy. The Medium Term Health Strategy summarizes the problems of the former policy.

> Ghana, has responded to malaria control, over the years, to reflect global responses to malaria control. But efforts to control it to the levels where it is on longer a disease of public health importance, had proved difficult in the past due to several factors:
>
> . Lack of a database for reference
> . Lack of well-defined indicators for assessment of programme implementation
> . Weakness in programme direction and management
> . Non-flexibility in the design of action plans in order to withstand policy changes
>
> Under the medium term strategy plan for malaria control, however, all these factors have been incorporated as issues addressed. It is therefore hoped that malaria control in Ghana in the Medium Term will have the desired impact[46]

Although the policy makers successfully identify the characteristics requiring emphasis in order for the policy to be effective, they fail to recognize that even if they can successfully implement the policy, malaria will continue to be a public health issue if the new policy does not embody the numerous cultures present in Ghana and the methods these cultures use to treat malaria.

As a result of the collaborative efforts to revise the malaria management policy, the Roll Back Malaria Strategic Plan for Ghana 2000-2010 surfaced as the official malaria management

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[44] Dr. Sittie, Archibald A. Phytochemist, Deputy Director at the Center for Scientific Research into Plant Medicine. Interview by author, November 21, 2000, work journal, possession of author.
[45] Britwum, Akua. Senior Researcher at the Center for Development Studies, University of Cape Coast. Interview by author, November 17, 2000, work journal, possession of author.
[46] Ministry of Health, Medium Term Health Strategy Towards Vision 2020. Accra: revised August, 1999.

plan to guide Ghana for the next twenty years. The new plan successfully recognizes the essential role the community must play in malaria management. For example, the new policy includes a section detailing "Improved Home-Based Care" which focuses on the need for improving training in individual households to correctly identify the signs and symptoms of malaria in attempts to alleviate misdiagnosis and subsequent inaccurate treatment. The training will focus on groups in close association with local communities so that training can be dispensed through local channels as opposed to official government organizations.[47] In addition, the new policy also aims to "strengthen competence of informal providers from other sectors" in order to impart knowledge of malaria diagnosis and treatment to community service or product providers (i.e, teachers, chemical sellers), in the absence of professional health care providers. These new policy additions reflect the variance in community dynamics and the misconceptions about malaria and inaccessibility to appropriate facilities they present.

But although the new policy attempts to incorporate more community involvement by using the various communities as vehicles for malaria education, the policy fails to incorporate traditional remedies for the prevention and treatment of malaria, but rather opts to promote western, imported products. A major focus of the new policy promotes the widespread use of insecticide treated materials (ITMs). Mosquito bed nets, coils, and sprays are all examples of the materials the new policy emphasizes as a preventative method for the onset of malaria. The new policy goal is to, "increase the number of people especially children and pregnant women sleeping under an adequately treated mosquito net from about 4% to 70% by 2010." [48] The policy goes on to address how attempts will be made to alleviate the financial burden of these ITMs for the population who needs them most.

> Currently, a treated bednet costs about C30,000 and re-treatment costs C5000 per net. There is not affordable to the majority of the people who need them. A number of measures shall be undertaken to make ITMs relatively affordable to many. Advocacy for tax and tariff waivers on bednets and insecticides shall continue. Already the Ministry has been able to pass memo on through the cabinet to Ministry of Finance, which has promised to pass it to parliament for the waiver.[49]

The effort put forth by the committee responsible for the policy should be commended, but the applicability of their action items needs to be questioned. How does one expect the majority of the population to support and utilize mosquito repellants for the prevention of malaria, when many within the population do not even attribute mosquitoes to the cause of malaria? One begins to question how much community research went into the creating of the new policy. Along with

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[47] Roll Back Malaria Strategic Plan for Ghana 2000-2010, Draft, 2000; 9.

[48] Roll Back Malaria Strategic Plan for Ghana 2000-2010, Draft, 2000; 17.

[49] Roll Back Malaria Strategic Plan for Ghana 2000-2010, Draft, 2000; 18.

poor research into the various communities in Ghana, foreign influence and the marketable products they import and produce are responsible for this discrepancy. Nevertheless, without basis on the various lifestyles present in Ghana and the perceptions, limitations, and treatments they afford for malaria, a malaria management policy will fail to supply the health care needs of Ghana' population.

In order to successfully combat the malaria epidemic affecting the entire population of Ghana, there must be an effort to assess the range of living environment and approve the of herbs for the treatment of malaria, it has already been established that due to foreign production control their consumer patronage does not encompass those individuals who rely on herbal medicine. A future effort for malaria policy should focus of teaching individuals to properly use the malaria remedies they have been utilizing for years. Future policies should emphasis proper dosages and promote clean environments to help maintain the health of those individuals relying on traditional medicine. This interplay between indigenous medicines and western standards is the most beneficial to the population at large.

Efforts to control malaria by the use of insecticide treated materials again present a problem of applicability. In addition, biologists have identified environmental controls that successfully diminish the presence of mosquitoes. But efforts to pursue this line of prevention are consistently de-emphasized; the new policy admits this drawback.

> Though biological control can be used to control mosquitoes, stimulating interest microbial insecticides in Ghana has not attracted much attention from investors. This is apparently due to the large capital outlay and funding for biological control measures and the inability to develop microbial insecticide into marketable product.[50]

The monetary gains obtained by investor who import and produce the large majority of ITMs maintain priority over the financial expenditures required to investigate the biological control of mosquitoes. However, the successful control of the mosquitoes that cause malaria will subsequently save Ghana's government large amounts of financial expenditure in the long run.

Finally, in order for Ghana to control malaria and maintain optimal health care for the entire population, health policy organizations must move away from the western approach of managing diseases and move towards a system which aligns with the needs of Ghana's current cultures. Twumasi comments on the ill alignment of developed approaches to health care management in developing countries.

> In most developed countries, there has been and still is a strong influence toward high technologically-specialized medicine. This has also become a major medical direction despite the

[50] Roll Back Malaria Strategic Plan for Ghana 2000 – 2010, Draft, 2000; 22.

> fact that the two major problems still affecting the health of the people are malnutrition and unhygienic living condions.[51]

Western approaches to medical practices provide Ghana with many benefits, but complete adoption of the system assumes that western culture is common throughout the entire Ghanaian population and that indigenous medical practices have no validity and provide no benefit to the people of Ghana. So how does Ghana create a policy to encompass the best qualities from each medical regimen. Akua Britwum, questions, "Can't we just take what we need and add to what we have?" [52] This simple suggestion provides the future course of action Ghana needs to adopt to effectively handle the health care needs of the population.

[51] Twumasi, P.A. Social Foundations and the Interplay between Traditional and Modern Medical Systems. Accra: Ghana University Press 1988; 21.
[52] Britwum, Akua. Senior Researcher at the Center for Development Studies, University of Cape Coast. Interview by author, November 17, 2000, work journal, possession of author.

Summary / Conclusion

The research revels that four distinct communities exist within the small urban setting of Cape Coast Each community possess its own individual culture and ultimately these cultures indicate the impact of western influence in their daily lives. This impact can be seen in the way individuals within the communities perceive and subsequently treat malaria. For indigenous medical treatments for malaria, but for a large majority, reliance on traditional herbs is essential because their way of life does not pattern after the model western culture. Consequently, western medicines present limitations such as cost, accessibility and efficacy. Hence, an interplay between the two medical system has emerged, but efforts to officially sanction this interplay with herbal clinics and health policy makers should utilize the traditional remedies already in practice placing special emphasis on educating the users of policy makers must move away from a complete western approach to health care and design a policy based on the various cultures present in Ghana.

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Appendix A

Interview Questions

Research communities:

1. What is your age range (18-24,25-35,36-45,46-55,55+)?
2. What is your level of education (primary, junior secondary school, senior secondary school, university degree)?
3. What is your current occupation? If retired, what was your former occupation?
4. What is your religious background?
5. Please explain to me your definition of malaria? What do you think in the cause of malaria?
6. When you are afflicted with malaria, how do you treat the illness?
7. Why do you choose this type of treatment?
8. Have you ever had experience with other forms of treatment (other than the one you use now)? And how did you feel the other remedy treated the malaria?
9. At what point would you chose traditional medicine over western/orthodox medicine (or vice versa) when treating your malaria?
10. In which arena of medicine do you feel more comfortable/place more confidence in-traditional or western? And how does this affect your choice?
11. Where do you obtain your treatment for malaria? Is accessibility an issue?
12. Is the treatment you choose today, the same treatment that you used for malaria during your childhood? If different, what do you think are the reasons behind the change?
13. Is the treatment you choose for yourself the same treatment you give to your children (if applicable)? If different, what do you think are the reasons behind the change?
14. Is the treatment you choose today the same treatment that your parents and grandparents used?
15. How do you feel about the impact of western medicine on the treatment of malaria?
16. Do you do anything to prevent the onset of malaria?

Purpose of Questions:

Questions 1-4: Determine personal profile

Questions 5: Determine perception of malaria

Questions 6-11: Determine personal reasons for choice

Question 12-15: Determine the ways western influence has affected choice

Question 16: Determine the procedures employed for the management (prevention and treatment) of malaria

Treatment Centers:

1. What is definition of malaria? How do you explain its causes?
2. How do you diagnose malaria in your patients?
3. What treatments do you administer to your patients who suffer from malaria?
4. How long do the treatments take to be effective? What is the average dosage?
5. What is the cost of your average malaria treatment?
6. Are there any side effects with the treatments you administer?
7. Generally speaking, what category of people patron your facility/services? (i.e economic background, age group, etc.)
8. Do you administer different forms of treatment to different groups of people? If so, why?
9. Do you administer any advice to our patients to prevent the onset of malaria? If so, what do you advice them to do?
10. Are there any efforts on your part to incorporate western techniques/practices into your treatments for malaria? If so, why? (for indigenous healers)
11. What are the rates of patronage to your hospital/clinic for treating malaria? Have they increased throughout the years? (for western practitioners)
12. What are the influences (if any) of traditional medicine on your practice? (for western practitioners)
13. Where/how did you obtain your knowledge on how to malaria?

Purpose of Questions:

Questions 1-6: Determine how malaria is treated

Questions 7-8: Determine what category of people is seeking which type of treatment

Question 9: Determine efforts put forth to manage malaria

Questions10and12: Determine the influence of western medical practices on indigenous medical practices and vice versa

Question 11: Determine if western influence has diminished patronage to traditional healers or elevated patronage to western practitioners

Question 13: Determine training

Herbal Clinics:

1. What is your definition of malaria? How do you explain its causes?
2. How do you diagnose malaria in your patients?
3. What treatments do you administer to your patients who suffer from malaria?
4. How long do the treatments take to be effective? What is the average dosage?
5. What is the cost of your average malaria treatment?
6. Are there any side effects with the treatments you administer?
7. Generally speaking, what category of people patron your facility/services? (i.e economic background, age group, etc.)
8. Do you administer different forms of treatment to different groups of people? If so, why?
9. What is your background training?
10. Why do you choose to administer herbal treatments as opposed orthodox medicine?
11. Why do you feel the need to place a western approach on herbal treatment?
12. Do you administer/have you researched any herbal/natural malaria prophylaxis treatments?

Purpose of Questions:

Questions 1-8: Same as treatment centers

Question 9: Determine orthodox or traditional training

Questions 10-11: Determine reason behind promoting interplay between herbal and western medicines

Question 12: Determine if herbal remedies can aid in the management of malaria

Government Policy Organizations:

1. What are the policies put forth by your organization for the treatment and management of malaria?
2. What is the purpose of this policy? Of your organization as a whole?
3. Do the policies reflects efforts to promote a western approach to the treatment of malaria or a traditional approach?
4. Does the policy focus/ promote the interplay between the two form of treatment?
5. Can I please review your policies and statistics (morbidity) on malaria?

Purpose of Questions:

All questions were asked to determine the various policies in place for the management of malaria and which treatment system (traditional or western) was emphasized in them.

Appendix B

Summary Sheet for Out-Patient Cases, Ghana

All Institutions and 8 Regional Hospitals (1999)

Month	Number of Cases Seen	Confirmed Clinical Malaria
January	796,609	249,969
February	738,121	231,365
March	777,763	243,708
April	736,346	230,726
May	882,668	276,720
June	893,065	279,904
July	976,960	306,243
August	740,526	232,158
September	903,993	283,434
October	647,384	202,827
November	767,674	240,556
December	700,962	219,610
Total	**9,562,071**	**2,997,220**