

UTILIZATION OF TRADITIONAL HERBAL MEDICINE AND ITS ROLE IN HEALTH
CARE DELIVERY IN GHANA:
THE CASE OF WASSA AMENFI WEST DISTRICT

by

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DECLARATION

I hereby declare that this submission is my own work towards the MA and that, to the best of my knowledge, it contains no material previously published by another person nor material which has been accepted for the award of any other degree of the University, except where due acknowledgement has been made in the text.

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DEDICATION

This work is dedicated, first, to God Almighty for His Divine Guidance and Favour.

Secondly, I dedicate it to my mother, Miss Grace Naana Quaidoo, for her unflinching support and encouragement. This work is for you, Mama

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ABSTRACT

Herbal medicine has been used alongside modern medicine and many continue to rely on it for their health care despite the increasing use of modern medicine in Ghana. Herbal medicine has played a significant role in health care delivery, since time memorial. It is estimated that approximately 80% of the world's population, 80% of the people in developing countries, 80% of Africans and about 70% to 75% of the population of Ghana rely on herbal medicine for their primary healthcare.

This study examined the use of herbal medicine and the role it plays in healthcare delivery in the Wassa Amenfi West District. The specific objectives of the study were to analyse the extent to which people patronise herbal medicine, evaluate the perception on the efficacy of herbal medicine in relation to orthodox medicine, examine the socio-demographic determinants and reasons for the use of herbal medicine, and examine the possibility of integrating traditional and orthodox healthcare systems and the prospects of achieving it.

This was a descriptive cross sectional study and used structured interviews, questionnaires, and Focus Group Discussions (FGDs) Guide as instruments for collecting both quantitative and qualitative data. A random sample of 205 residents aged 18years and above from 5 communities across the district was used for the study. In addition, 10 orthodox healthcare practitioners, and 15 herbal practitioners were sampled through purposive and snowball sampling, respectively. Data was analysed using Predictive Analytic Software for Windows (PASW) version 16.0 and Microsoft Excel 2007 software. Percentages, frequencies, cross tabulations, and pie charts were used to present the data. Chi-square test of independence was applied to identify the relationship between the basic socio-demographic characteristics and use of herbal medicine, with the level of significance at 0.05.

The survey revealed that herbal medicine is highly patronized in the district. Age, marital status, level of education, and place of residence have significant relationship with the use of herbal

medicine. It was also revealed in the study that herbal medicine is effective in the treatment of conditions such as malaria, infertility, sexual weakness, sexually transmitted infections, diabetes, epilepsy, piles, waist pains, menstrual pains, hernia, stroke, mental illness, arthritis, bone fracture, boils and other chronic skin infections. The study also found that there is a strong belief in the potency of herbal medicine making its role in health care delivery very significant. Again, the study found a low level interaction, hence integration between herbal and orthodox medical systems, even though they coexist.

The study concludes that herbal medicine would complement the government's efforts at providing affordable, accessible and effective healthcare for all.

It is therefore recommended that government should make efforts at fully integrating traditional herbal medicine into modern healthcare delivery system, a standard healthcare regulatory framework must be set for both orthodox and herbal practitioners, and traditional medicine must be fully integrated into modern healthcare system.

Ways in which traditional herbal medicine could be integrated into modern healthcare system include inter-disciplinary investigation into the therapeutic claims of herbal practitioners, and the documentation of plants and their therapeutic properties are areas that must be of interest to future researchers.

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LIST OF ABBREVIATIONS

AIDS	-	Acquired Immune Deficiency Syndrome
CAM	-	Complementary and Alternative Medicine
CSRPM	-	Centre for Scientific Research into Plant Medicine
FGD	-	Focus Group Discussion
GHAFTRAM	-	Ghana Federation of Traditional Medicine Practitioners
GHS	-	Ghana Health Service
HIV	-	Human Immunodeficiency Virus
IUPAC	-	International Union of Pure and Applied Chemistry
MLGRD	-	Ministry of Local Government and Rural Development
NGOs	-	Non-Governmental Organisations
PASW	-	Predictive Analytic Software for Windows
PRHETIH	-	Primary Health Training for Indigenous Healers
TMPC	-	Traditional Medicine Practice Council
WAWDA	-	Wassa Amenfi West District Assembly
WHO	-	World Health Organization

CHAPTER ONE

1.0 BACKGROUND TO THE STUDY

1.1 INTRODUCTION

Long before the advent of orthodox medicine in Ghana, traditional medicines including the use of herbs were the main remedies for nearly all ailments (Twumasi, 2005a). Today, notwithstanding the increasing use of modern medicine in Ghana, herbal medicine is also hugely patronized and many continue to rely on it for their health care. In recent times, people have been turning in increasing numbers to the use of herbal medicines as both an alternative and complementary to modern medicine (Lucas, 2010).

Herbal medicine has played a significant role in health care delivery. It is estimated that approximately over 4 billion people or 80% of the world's population rely on traditional medicine, one way or the other, for health care (WHO, 2003a). Moreover, an estimated 80% of the people in developing countries and 80% of Africans rely on herbal medicine to meet their primary health care needs (Darko, 2009; Okigbo and Mmeka, 2006; WHO, 2003a; Abbiw et al, 2002). The annual global market for herbal medicines currently stands at over US\$60 billion and is growing steadily at a rate of fifteen to twenty five percent (WHO, 2003).

Countries like China, India and Sri Lanka have achieved tremendous success in developing their herbal sector. In these countries, herbal medicines are highly developed, well documented, and practised not only at the family, community, and primary health care levels, but also in hospitals where they providing secondary and tertiary care. Again, herbal practices in these countries are based on systematic knowledge, comprehensive methodology, and rich clinical experiences (Verma and Singh, 2008; Twumasi, 2005a; WHO, 2000b).

In Ghana, about 70% to 75% of the population rely on herbal medicine for their primary health care. Also, herbal medicine is the first line of treatment for more than 60% of children with high

fever resulting from malaria (WHO, 2003a). There is, on the average, one traditional medical practitioner for every 400 people, compared to one biomedical doctor to 12,000 people in Ghana (Darko, 2009; WHO 2003b; Abbiw et al., 2002).

Indeed, various researchers have found that herbal medicine is effective, more readily available, affordable, culturally acceptable, and is consistently being argued as an easily accessible health care system that can aid and complement government's efforts at ensuring quality and equitable health care (Twumasi, 2005a; Abbiw et al., 2002; WHO, 2002a; WHO, 1998; Buor, 1993). In some rural communities, herbal medicine is the only form of health care that is available, affordable and accessible. Indeed, herbal medicine has demonstrated efficacy in the areas of chronic and psychic ills, boils, tuberculosis, asthma, infertility, hernia, hypertension, diabetes and malaria, where modern medicine has either failed to produce equally good results or has simply ignored the need for systematic attention and research (Twumasi, 2005a; Shaikh and Hatcher, 2005; Buor, 1993).

Another factor that validates the relevance of herbal medicine is that herbs remain the foundation for a large amount of commercial medications used today for treatment of heart disease, blood pressure regulation, pain remedies, asthma and other health problems (Okigbo and Mmeka, 2006; Calixto, 2000). For instance, Artemisinin which is extracted from the Chinese herbal wormwood plant *Artemisia annua* is the basis of more effective antimalarial drugs (WHO, 2008; Okigbo and Mmeka, 2006). Herbal medicines are being used increasingly as dietary supplements to fight or prevent common maladies like cancer, heart disease and depression. The public and herbal medicine community is extolling the miraculous medical benefits of the ginkgo biloba, St. John's wort, moringa, sunflower seed, black cohosh and many other herbs (Okigbo and Mmeka, 2006; Cohen et al., 2000). In spite of all these prospects, herbal medicine remains poorly integrated into the current health care structure of Ghana (Baidoo, 2009).

Concerns are constantly being raised by policy-makers, government officials, orthodox health professionals and researchers on the efficacy, quality, reliability and safety of herbal medicine (Baidoo, 2009; WHO, 2002a; WHO, 2001). For instance, studies have shown that though about three thousand herbal formulations have been documented as being efficacious for specific conditions in Ghana, out of which over six hundred are circulating as herbal medicine products, only a little above sixty have undergone preliminary phyto-chemical analysis and safety test at the Centre for Scientific Research into Plant Medicine, which is the institution mandated by the government to undertake research and development of plant medicine, and to assess and approve the efficacy, long term safety and clinical monitoring of herbal medicine products in Ghana (Darko, 2009; Abbiw et al., 2002, Brown, 1992). Therefore, doubts continue to linger in the minds of policy-makers, government officials, and orthodox health professionals about quality, efficacy, safety, and reliability of herbal medicine.

It is against this backdrop that this paper seeks to explore the place and utility of herbal medicine as a vehicle to effective, affordable and accessible health care in Ghana, as well as its possible mainstreaming into modern health care system. The study is based on a sample of 205 residents in five communities, 10 orthodox healthcare professionals and 15 herbal practitioners selected from five communities in the Wassa Amenfi West District. The study will lead to reactions that can enhance the integration of both herbal and orthodox medicine.

1.2 PROBLEM STATEMENT

Ghana, like most developing countries, is struggling to provide quality, accessible and efficient health care services to its citizens. The current health care system, which is predominantly founded on the allopathic approach, is struggling to meet the basic health needs of the people, especially for ailments like malaria, diarrhoea, buruli ulcer, diabetes mellitus, stroke, and

hypertension with the poor being severely hit (WHO, 2010; Baidoo, 2009; Darko, 2009; Ghana Health Service, 2008). For instance, malaria accounts for more than 200,000 under five mortality (Ghana Health Service, 2008; Mensah, 2008) and generally, 13.5% of total deaths in Ghana. Additionally, HIV/AIDS accounts for 7.4%, anaemia for 7.3%, pneumonia for 6.2%, and hypertension for 4.1% of the total deaths occurring in Ghana (GHS, 2008).

The health situation in the Wassa Amenfi West District reflects the poor access to orthodox medicine and increasing use of herbal medicine. The Wassa Amenfi West District, with a population of 161, 166 (Ghana Statistical Service, 2010), has fourteen health care facilities, two of which are hospitals. The two hospitals are also privately owned. The other health facilities are clinics and health centres (Ghana Health Service, 2009). These health facilities are also not well-equipped with modern diagnostic and surgical equipment to be able to effectively address the health needs of the people (Ministry of Local Government and Rural Development, 2006; Wassa Amenfi West District Assembly, 2006). The situation therefore typifies that of Ghana.

Additionally, about 65% of the people in the district live between 6km and 35km away from health facilities and the road networks linking communities to the health facilities are mainly unmotorable, especially during the rainy seasons (MLGRD, 2006; WAWDA, 2006). The district has 883.6km length of roads. Out of this, only 40km (4.5%) has been tarred, which is the Bawdie-Asankrangwa road (MLGRD, 2006; WAWDA, 2006). Gravel roads do not last in the district because of the copious nature of the rainfall. Roads are constantly prone to flooding during rainy periods, which makes them impassable for close to eight months in a year (WAWDA, 2006). The poor nature of roads has adversely affected the delivery of services to the entire district by decreasing accessibility and utilization of these services (MLGRD, 2006; WAWDA, 2006).

The health professional staffing in the district is not encouraging. The district has 44 health professionals including those on secondment to the two hospitals in the district, and a doctor-

population ratio of 1:38,841 is approximately three times the national average of 1:13,683 (GHS, 2008; MLGRD, 2006; WAWDA, 2006). Malaria is the most common disease in the district and also the top cause of mortality in the district (WAWDA, 2006).

Moreover, the district has high maternal mortality ratio of 757 per 100,000 live births compared to the national average of 214 per 100,000 live births (MLGRD, 2006; WAWDA, 2006). Important micro nutrients such as iodine, vitamin A and iron are found to be deficient in the diet of a significant number of people in the district. Iodine, among other nutrient deficiency, has serious implications on productivity, physical and mental development of the people (MLGRD, 2006; WAWDA, 2006). In the major communities, there is lack of proper drainage system and heaps of refuse are easily sighted upon entering the communities. Access to potable water is inadequate. Most of the households do not have toilet facilities in their homes and they rely on public toilets where available. The poor sanitation coupled with inadequate potable water result in occasional outbreak of diarrhoea.

The decaying condition of modern health care delivery has encouraged over-reliance on untrained traditional birth attendants, self-medication, 'quack doctors,' unwholesome drugs, and the use of herbal medicine to bridge the gap created by the inadequate access to modern health care services (MLGRD, 2006). This has brought to the fore the need to research into the utilization of herbal medicine and how suitable it will be to integrate it into the modern health care delivery system in the Wassa Amenfi West District. This is needed to help ensure a comprehensive and a more compact response to the health needs and threats of the citizens.

1.3 RESEARCH QUESTIONS

The following questions are structured to guide the study:

1. To what extent do people in the Wassa Amenfi West District patronize herbal medicine and for what ailments?
2. What is the perception about the efficacy of herbal medicine in relation to orthodox medicine?
3. What are the background characteristics and reasons for usage of herbal medicine?
4. Is there a possibility of integrating traditional and orthodox medicine and what are the prospects of achieving this?

1.4 OBJECTIVES

The primary objective of this research is to evaluate the use of herbal medicine and the role it plays in health care delivery in the Wassa Amenfi West District.

The specific objectives are to:

1. Analyse the extent to which people patronise herbal medicine in the Wassa Amenfi West District.
2. Explore the perception about the efficacy of herbal medicine in relation to orthodox medicine.
3. Find out the background characteristics and reasons for the use of herbal medicine.
4. Examine the possibility of integrating traditional and orthodox health care systems and the prospects of achieving this.

1.5 HYPOTHESES

The research is guided by the following hypotheses:

1. **H₀:** There is no significant relationship between sex and use of herbal medicine.
H₁: There is significant relationship between sex and use of herbal medicine.
2. **H₀:** There is no significant relationship between educational level and use of herbal medicine.
H₁: There is significant relationship between educational level and use of herbal medicine.
3. **H₀:** There is no significant relationship between income level and use of herbal medicine.
H₁: There is significant relationship between income level and use of herbal medicine.
4. **H₀:** There is no significant relationship between place of residence and use of herbal medicine.
H₁: There is significant relationship between place of residence and use of herbal medicine.

Decision Criteria

H₀ (Null hypothesis): There is no significant relationship between the dependent (use of herbal medicine) and the independent variable(s).

H₁ (Alternative hypothesis): There is significant relationship between the dependent (use of herbal medicine) and the independent variable(s).

If the P-value is less or equal to (≤ 0.05), reject the null hypothesis (H₀).

1.6 SCOPE OF THE STUDY

The study investigated into the rate of patronage of herbal medicine, perceptions about the efficacy of herbal medicine, socio-economic background of users of herbal medicine, and the

possible incorporation of traditional health care system into modern health care system. However, this thesis does not encompass the use of laboratory, chemical and biological test methods to evaluate the efficacy of herbal medicine, but basically the perceptions or socio-cultural beliefs and practices related to their use. It also does not encompass spiritual treatments, but rather the physical and material aspects of herbal medicine. The

WHO defines traditional medicine as the sum total of knowledge or practices, whether explicable or inexplicable, used in diagnosing, preventing or eliminating a physical, mental or social disease, which may rely exclusively on past experience or observation handed down from generation to generation, verbally or in writing (WHO, 2008). It includes diverse health practices, 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, 2003a; WHO, 2002a; WHO, 2001)

On the other hand, WHO defines herbal medicine as plant-derived materials or products with therapeutic or other human health benefits which contain either raw or processed active ingredients from one or more plants (WHO, 2000a; WHO, 1998). This means that herbal medicine is type of traditional medicine. Thus, according to WHO (2008), herbal medicines are the most popular form of traditional medicine.

This research is basically concerned with the material aspect of herbal medicine, rather than the spiritual aspect. Also, the study deals with those herbal medicines that have been scientifically tested and approved by the Centre for Scientific Research into Plant Medicine (CSRPM) as well as those that have not undergone any phyto-chemical and safety test at the centre, but is not concerned with those fetish practices involved with herbal medicine.

Works have been done by Falconer et al. (1992) in some villages in the Western and Ashanti Regions, Buor (1993) in the Kumasi Metropolis and Agona District, and Gyasi, et al. (2011) in the

Sekyere South District. This notwithstanding, this research is unique in the sense that it is conducted in a different geographical setting where no related work has already been undertaken. Furthermore, unlike the works of Buor (1993) and Twumasi (2005a) which dealt with traditional medicine (including the spiritual aspect), this work is concerned with the material aspect of herbal medicine.

The study area for the research is the Wassa Amenfi West District of the Western Region. The district was chosen because of its peculiar challenges in health care delivery. Given the limited resources and time, focusing on all the communities in the district would be practically impossible. Therefore, respondents were selected from five different communities in the district, namely Manso Amenfi, Hiawa, Achichire, Obing and Manhyia. These are deprived and marginalized communities with serious socio-economic problems, especially with respect to health care. These problems include lack of hospitals/clinics, poor accessibility to orthodox health care, and inadequate healthcare professionals, inadequate modern diagnostic and surgical equipment which seriously impair health delivery, hence calling for the use of herbal remedies as supplements.

1.7 METHODOLOGY

1.7.1 Types of data

Both quantitative and qualitative data were used for the study. The qualitative data seeks subjective and in-depth understanding of social realities, whilst quantitative data provides statistical description and prediction (Bell, 1999). When used together, these two methodologies tend to complement each other in collecting in-depth and rich information.

1.7.2 Sources of data

Data for the study was gathered from two main sources, namely primary and secondary.

The primary data were collected through questionnaires, interviews and focus group discussion (FGD). The sources of the primary data collected for the study included data from orthodox health professionals, herbal practitioners, and members of households aged 18 years and above. Secondary data sources included reports, project documents, journals, magazines, hospital records, district assembly documents, among others. In addition, information from the internet was also included in the secondary database.

1.7.3 Data collection method

Structured interviews, questionnaires, and focus group discussions (FGD) guide constituted the instruments for data collection. Structured interview schedule is a means of collecting data for a statistical survey where the data is collected by an interviewer rather than through a self-administered questionnaire (Bell, 1999). In other words, structured interview is a field investigation method where the researcher meets the respondent and through the interaction asks specific questions to find answers to his research problem, and the responses are filled in by the researcher (Twumasi, 2005b). This process allows the researcher to produce rich and varied quantitative data. It provides a thorough examination of experiences, feelings or opinions that closed questions could never capture (Kvale and Brinkmann, 2009). Here, the data collector read the questions exactly as they appear on survey questionnaire and records the responses from the respondents. Thus, the interviewer is allowed to explain things the interviewee does not understand or finds confusing. It is mostly suitable for gathering data among illiterates (Kvale and Brinkmann, 2009).

The structured interview was administered to residents in the district who are 18 years and above as well as herbal practitioners in the district.

Furthermore, questionnaires were administered to orthodox healthcare professionals, such as doctors, medical assistants and nurses. A questionnaire is a research instrument consisting of a series of questions self-administered to individuals to obtain statistically useful information about a given topic (Gillham, 2008). Unlike interview schedules, questionnaires are self-administered and are mostly suitable for gathering data among literates because respondents must be able to read the questions and provide the answers themselves. They often have standardized answers that make it relatively simple to compile data (Gillham, 2008; Oppenheim, 2000). The questions contained both pre-coded and open-ended items and were used to collect quantitative and qualitative data. Close-ended questions were used to collect quantitative data while open-ended questions were used to collect qualitative data.

Additionally, focus group discussion guide (FGD) was used as a tool for collecting qualitative data for the study. FGDs are guided discussions that take the form of an exchange of views and opinions with a group or with different sets of groups, which are known to be concerned with and knowledgeable about the issues to be discussed (Krueger, 1988). In such settings, participants stimulate each other in an exchange of ideas that may not emerge from individual interviews or surveys. Its purpose is to obtain in-depth information on concepts, perceptions and views on a subject matter. FGD for this research was organized to obtain qualitative data on the perceived efficacy and affordability of herbal medicine in relation to orthodox medicine, the extent to which people patronise herbal medicine and the conditions under which they are used.

In all, four of such discussions were conducted in the communities to engage in a free discussion on the research topic, with each group consisting of six members of common characteristics. Membership of a group was based on background characteristics of the people, such as sex, level

of education, economic status, and residential pattern (typically rural or urban). In his study of self-disclosure, Jourard (1964) found that respondents with something in common realize that they are alike and tend to “disclose more about themselves to people who resembled them in various ways than to people who differ from them” (p. 15). Each discussion lasted between 35 to 45 minutes. The researcher was the moderator of the FGDs with the help of two other assistants employed by the researcher, who are experienced in social surveys. One of the research assistants observed the pattern of the discussion, while the other recorded the responses given. Hand written report and voice recorders were used to record the sessions. The responses were Permission was sought from participants and participation in the discussion was voluntary.

1.7.4 Sampling design

Households constituted the basic units of inquiry in the research, and members aged 18 years and above constituted the respondents. This approach ensured that the respondents were matured, could make informed decisions by themselves, and contributed meaningfully and effectively to the study. Additionally, orthodox health professionals such as doctors, medical assistants, nurses, and technicians, as well as herbal practitioners were interviewed.

The study was conducted in five communities in the Wassa Amenfi West District, namely, Manso Amenfi, Hiawa, Achichire, Obing and Manhyia. These communities were purposely chosen because they are deprived and marginalized communities with serious socio-economic problems, especially with respect to health care. These health care problems include lack of hospitals/clinics, poor accessibility to orthodox health care, and inadequate healthcare professionals.

The total population of people in the five communities who are 18 years and above is 3,782. Due to the constraints of time and resources, 5.4% of the total population was used as the sample size. Therefore a sample size of two hundred and five (205) was used for the study at 95% confidence level and $\pm 5\%$ margin of error and a significance level of 0.05. Manso Amenfi was allocated

seventy four (74) respondents, Hiawa - forty seven (47), Achichire - thirty nine (39), Obing – twenty seven (27) and Manhyaia - eighteen (18). This was done to correspond to their proportional contribution to the total population of the selected communities. In addition, fifteen (15) herbal practitioners and ten (10) orthodox healthcare professionals were interviewed to complement the study results.

Simple random sampling technique was used to select the houses. All the houses in the study communities were numbered, and numbers were written on sheets of papers, folded and shuffled.

A blind folded person was asked to pick the required number of papers from the shuffle which represented the sub-sample from each community. In the case where there is more than one household in a house, one of the households was randomly selected. However, in most cases, typical of rural areas, the selected houses were occupied by one household. In each selected household, the head of the household (male or female) was interviewed and his/her absence, the eldest son or daughter was interviewed. Since the head of a household is the breadwinner, his/her health-seeking behaviour may influence the other members of the family. This approach ensured that all households had had equal opportunities of being selected. The orthodox healthcare professionals were selected through purposive sampling technique. This involves selecting a sample from a population with a specific set of characteristics for the research study (Babbie and Moutour, 2001). Here, the researcher samples with a purpose in mind and relies on his or her expert judgement to select units that are representative of the population (Patton, 2002). The power of purposive sampling lies in selecting information-rich cases for in-depth analysis related to the central issues being studied (Patton, 2002).

Moreover, snowball sampling technique was used to select the herbal practitioners. This is a technique for finding research subjects, whereby one subject recommends another potential subject(s), who in turn refers another subject(s) and so on, until a sufficient sample size is

obtained (Vogt, 1999). Thus, the researcher identified potential subject(s) and after observing or interviewing the initial subject(s), the researcher asked for assistance from the subject(s) to help identify people with similar trait of interest. According to Salganik and Heckathorn (2004), the main values of snowball sampling is its ability to obtain respondents from social networks or groups of people who are hard to locate.

The instruments for the study were pre-tested on 20 participants (15 residents aged 18 years and above, 2 orthodox health care professionals and 3 herbal practitioners) in Manso Amenfi. According to Reis and Judd (2000), pre-testing of research instruments help in assessing whether or not questions are clear as well as bring out questions that are interpreted differently than what the investigator intended, though they are understood by the respondent. For instance, it was found during the pre-test that ‘herbal medicine’ as used in the context of this research was used as synonym to ‘traditional medicine’ which was interpreted as the use of plant medicine in the maintenance, control, treatment and the prevention of health-related conditions.

1.7.5 Data analysis

Quantitative data for the study was analysed using descriptive statistical analysis such as frequencies, percentages and chi square test of independence. Frequency tabulations, cross tabulations, and pie charts were used to present the data and to emphasize important relationships and trends.

Predictive Analytic Software for Windows (PASW) version 16.0 and Microsoft Excel 2007 software were used to aid the analysis of quantitative data, after they were ordered, coded and edited. Chi-square test of independence was applied to identify the association between the background characteristics and use of herbal medicine, with the level of significance at 0.05.

Qualitative data was obtained from in-depth interviews and Focus Group Discussions. Analysis of qualitative data was done by descriptions and explanations so as to help search for patterns in the use of herbal medicine and for ideas that help explain the existence of those patterns. This involved the organization of responses and identification of patterns, developing ideas, drawing and verification of conclusions. Direct quotations were also used to enrich the qualitative data analysis.

1.8 JUSTIFICATION

The study is relevant for a number of reasons. First, it will serve as a source of information for further research and to other researchers who are into similar or related studies of herbal medicine. The study will also bring to fore the importance of traditional health care system and expand knowledge on the current debates on the efficacy, safety, and reliability of herbal medicine, as well as its possible mainstreaming into modern health care. Finally, the research would be useful to the Ministry of Health, Ghana Health Service, NGOs, and other international organizations in developing policies that would promote safe, effective, affordable and accessible health care.

1.9 LIMITATIONS OF THE STUDY

There was the difficulty in acquiring data from herbal practitioners and health professionals on the rate of patronage and background characteristics of users of herbal medicine, since most of them do not keep proper and updated records on their day-to-day activities. Others were simply reluctant to give so-called classified information to the researcher. Classified information is one that is not meant for public consumption, hence are kept away from the public. Moreover, it was difficult meeting the residents in their houses always because most of them were farmers and usually left the house very early for their farms. Also, there was the problem of understanding questions, since many herbal practitioners and people in the district are not formally educated.

However, there were measures to overcome these problems. Respondents were assured that the information they give will be treated confidential. The researcher also went to the communities very early in the morning or in the evening to overcome the problem of not meeting respondents in the house. Questions were translated for respondents in the local language (Twi) and responses translated back into English, since it is the major language spoken in the district. These limitations therefore had little effect on the results of this study, as a result of the measures and strategies taken to overcome them.

1.10 ORGANIZATION OF THE STUDY

The study is organized into six chapters. Chapter One gives an introduction to the study, the problem statement, the research questions, and the objectives of the study. It also touches on the methodology, the justification of the study and limitations and challenges of the research.

Chapter Two reviews the literature on the theme of the research. It encompasses areas such as the meaning of herbal medicine, patronage of herbal medicine, reasons for the patronage, and the integration of traditional medicine into orthodox health care system. Chapter Three highlights the profile of the district where the study was conducted. It comprises the location and size of the district, the physical characteristics such as climate, soil, vegetation, relief and drainage, socio-economic characteristics, and probable potentials and constraints or challenges, and the relevance of these features in the topic under study.

The fourth chapter deals with the analysis, interpretation, presentation and reports of data obtained from the field. Specifically, it deals with the extent of patronage of herbal medicine, perception about the efficacy of herbal medicine, and socio-demographic determinants and reasons for use of herbal medicine. Chapter Five also deals with the analysis, interpretation, and examines the

possibility of integrating traditional and orthodox medicine and the prospects of achieving such integration.

The final chapter is devoted to the summary, conclusion and recommendations which will be made based on the research findings. It also recommends areas for further research.

KNUST



CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

In this chapter, efforts are made to review and understand literature on herbal medicine, patronage of herbal medicine, and its position in overall health care delivery. It also examines explanation of the socio-economic background of users of herbal medicine and how suitable herbal medicine could be integrated into orthodox medicine, citing some cross cultural experiences. A theoretical framework is also structured for the study based on the literature and a conceptualisation of the problem in the study area.

2.2 Herbal medicine

Herbal medicine has been defined differently by various people. According to Kamboj (2000, p. 35), “herbal drugs constitute only those traditional medicines which primarily use medicinal plant preparations for their therapy”. Lucas (2010, p. 76) also defines herbal medicine as “the use of plant products to treat or prevent a disease”. Nsowah-Nuamah et al. (2004) suggest that the treatment of herbal practitioners usually “takes the form of herbs, plant preparations, and prayers (p. 4).”

The World Health Organization (WHO) defines herbal medicine as “a plant-derived material or preparation with therapeutic or other human health benefits which contains either raw or processed ingredients from one or more plants (WHO, 2000a, p. 27; 1998, p.10). However, the WHO Regional Office for Africa (2004) uses the term “traditional medicine” as a synonym for herbal medicine and defines it as “the use of indigenous medicinal and aromatic plants, animal parts, or organic and inorganic materials for preventive and therapeutic purposes (p. 11).”

Traditional and herbal medicine has taken the new name, complementary and alternative medicine (CAM). CAM refers to those therapeutic and diagnostic disciplines that exist largely outside the institutions where orthodox or modern health care is provided (Shaikh and Hatcher, 2005).

On the other hand, the University of Maryland Medical Center (2010) gave a definition of herbal medicine as “plant’s seeds, berries, roots, leaves, bark, or flowers for medicinal purposes (p. 1).” This general definition of herbal medicine by the University of Maryland Medical Center is adopted for this study, because this research basically deals with the material aspect of herbal medicine.

Herbs that are used for medicinal purposes come in a variety of forms. Active parts of a plant may include leaves, flowers, stems, roots, seeds, and berries (Woolf, 2003). They may be taken internally as pills or powders, dissolved into tinctures or syrups, or brewed in teas and concoctions.

2.3 Patronage of herbal medicine

There has been increased attention and interest in the use of herbal medicine globally since the 1970s. People have been turning, in increasing numbers, to the use of herbal medicine as both an alternative and complementary to modern medicine (Lucas, 2010; Vickers et al, 2006; WHO 2003b). Studies by Darko (2009), Fakeye et al. (2009), Gratus et al. (2009), Twumasi (2005), and Shaikh and Hatcher (2005) have also shown that many people use both herbal and orthodox medicine both in the developing and developed countries.

Herbal treatments are the most popular form of traditional medicine, and are highly lucrative on the international market (WHO, 2008). Herbal Medicines have been used in both developed and developing countries though the main reasons for use vary from country to country. Altogether it is estimated that 80% of the total population of the world rely on herbal medicine, one way or the

other for their health. According to the WHO (2003a, 2000b), 80% of the developing world's population still depend on herbal medicine.

In China, traditional herbal preparations account for 30% to 50% of the total medicine consumption, and in Hong Kong, approximately 60% of the population have consulted herbal practitioners at one time or another (WHO, 2003a; 2002b). In Chile 71% of the population, and in Colombia 40% of the population, use herbal medicine (WHO, 2003b). In developed countries, traditional, complementary and alternative medicines are becoming more popular. For example, the percentage of the population that have used such medicines at least once is 48% in Australia, 31% in Belgium, 70% in Canada, 49% in France and 42% in the United States of America (WHO, 2003b).

In Africa, up to 80% of the population use herbal medicine for primary health care (Mensah, 2008; WHO, 2002a). In Ghana, Mali, Nigeria and Zambia, the first line of treatment for 60% of children with high fever resulting from malaria is the use of herbal medicine at home (Darko, 2009; Okigbo and Mmekka, 2006; WHO, 2003a; WHO, 2003b; Abbiw et al, 2002). Studies in Africa and North America have shown that up to 75% of people living with HIV/AIDS use herbal medicine alone or in combination with other medicines for various symptoms or conditions (WHO, 2003b).

In Ghana, about 70% to 75% of the population rely on herbal medicine for their primary health care (Abbiw et al., 2002; WHO, 2001). In a recent survey by Boateng and Darko (2008), it came out that almost eight out of every ten respondents randomly selected had reasons to believe herbal medicine is of great importance in the contemporary Ghanaian health care system.

The annual global market for herbal medicine is growing steadily at a rate of 15% to 25% and stands at over US\$60 billion (WHO, 2003a; 2003b; 2002a; 2000b). Annual revenues for herbal medicine in Western Europe reached US\$ 5 billion in 2003-2004 and in China, sales of herbal

products totalled US\$ 14 billion in 2005 (WHO, 2008). Herbal medicine revenue in Brazil was US\$ 160 million in 2007 (WHO, 2008). In Australia, the estimated national expenditure on alternative medicines and alternative practitioners is close to A\$1000 million per annum, of which A\$621 million is spent on alternative medicines (Kamboj, 2000).

According to the International Union of Pure and Applied Chemistry (IUPAC) (2008), data on 3,027 South Australians found that approximately one in two had used at least one form of herbal product in the year 2000 and 23.3 % of all respondents had visited at least one herbal practitioner during that year. In the United States, 158 million of the adult population use complementary medicines and according to the United States Commission for Alternative and Complementary medicines, US\$17 billion was spent on traditional remedies in 2000 (IUPAC, 2008). In the United Kingdom, annual expenditure on alternative medicine is US\$ 230 million (IUPAC, 2008).

Worldwide, it is estimated that 35,000 to 70,000 species of plants have at one time or another, been used in some cultures for medicinal purposes (Kamboj, 2000). These are concentrated in the global biodiversity 'hot-spots' such as the Amazon rainforest of South America, the eastern Himalayas and Western Ghats in South Asia, and the Eastern Arc Mountains and coastal forests of East Africa (Kamboj, 2000). Nevertheless, in Africa it is estimated that there are 21,000 medicinal plants (Okigbo and Mmekaka, 2006). In tropical Africa, for example, more than 4,000 plant species are used for medicinal purposes and 50,000 tons of medicinal plants are consumed annually (Kamboj, 2000).

2.4 Efficacy of herbal medicine

The central idea about the efficacy of a medicine is the measure of its ability to improve health and well-being. Thus, Twumasi (2005a), comments that, the functional scope of each medical system is largely determined by its ability to get results in specific cases of illness.

Although many studies identified the increasing prevalence of herbal medicine use throughout the world, only a few reported on how patients perceived the efficacy of this healthcare modality in specific diseases (Clement et al., 2007; Bruguera et al., 2004). According to Clement et al. (2007), the major factor contributing to the increasing popularity of herbs in developed countries and their sustained use in developing countries is the perception that herbal remedies are efficacious, and in some cases more so than allopathic medicines. This favourable level of perceived efficacy support their continued use, and in a significant number of patients, concomitant use with orthodox or allopathic medicines. In a study of how users of primary health care in Trinidad perceived herbal medicine, Clement et al. (2007) discovered that 86.6% believed that herbal remedies were equally or more efficacious than orthodox medicines for specific ailments and diseases.

According to Mensah (2008), Twumasi (2005a) and Buor (1993), the potency and effectiveness of traditional medicine have been proven through research. Herbal therapies have shown remarkable success in healing acute as well as chronic diseases (Shaikh and Hatcher, 2005). Buor (1993), for instance discovered that there is a kind of psychological security in the medical approaches of the traditional medicine man which is able to relieve a patient of strong psychic pressure. Herbal medicine provides more effective treatments to certain health problems such as boils, tuberculosis, stroke, arthritis, epilepsy, asthma, infertility, hernia, hypertension, diabetes, malaria, depression, mental illness and disease prevention as well as for the ageing population, where modern medicine has either failed to produce equally good results or has simply ignored the need for systematic attention and research (Darko, 2009; Twumasi, 2005a; Yeboah, 2000; Davies, 1994; Buor, 1993). Also, in cases of sexually transmitted diseases, typhoid fever, yellow fever, menstrual and fertility problems, herbal medicine is considered more effective (Shaikh and Hatcher, 2005). Herbal medicines have also shown a wide range of efficacy in the treatment of various diseases such as breast, cervical and prostate cancers, skin infections, jaundice, scabies,

eczema, typhoid, erectile dysfunctions, snakebite, gastric ulcer, cardiovascular disorders and managing HIV/AIDS (Verma and Singh, 2008; Okigbo and Mmekaka, 2006; WHO, 2003b).

Significantly, it is evident that some herbal medicines have been recognised internationally for the treatment of certain diseases (IUPAC, 2008, Okigbo and Mmekaka, 2006, Calixto, 2000). Herbs remain the foundation for a large amount of commercial medications used today for the treatment of heart disease, blood pressure regulation, pain remedies, asthma and other health problems (IUPAC, 2008, Okigbo and Mmekaka, 2006, Calixto, 2000). For instance, Artemisinin which is extracted from the Chinese herbal wormwood plant ‘*Artemisia annua*’ is the basis of more effective antimalarial drugs the world has ever known (WHO, 2008; Okigbo and Mmekaka, 2006). Western researchers learned of the plant, for the first time, in the 1980s, but had been used in China for almost 2000 years to treat malaria. However, due to scepticism surrounding the drug, it was only until 2004 that WHO approved of it for use internationally (IUPAC, 2008, Okigbo and Mmekaka, 2006). Artemisinin is also effective in combating other diseases and has demonstrated significant potential for the treatment of cancer and schistosomiasis (Baidoo, 2009; IUPAC, 2008).

Moreover, the Neem tree (*azadirachta indica*), which is indigenous to West Africa, is effective in the treatment of several diseases. The bark of the Neem tree is perceived to be effective in the treatment of malaria (Davies, 1994; Brown, 1992). In addition to this, Davies (1994), accounts that East Indians use it to make a strong soap that cures skin diseases. Africans also chew it to clean their teeth and it works as well as brushing with toothpaste, and supposed to be healthier for the gums. More so, the plant *Curcuma Longa* is perceived to be effective in the treatment of scabies, itches, boils, abscesses, eczema and eye diseases (Okigbo and Mmekaka, 2006; Davies, 1994).

Furthermore, a growing body of research has demonstrated that the commonly used herbs and spices such as garlic (*Allium sativum*), black cumin, cloves, cinnamon, thyme (*Thymus vulgaris*), bay leaves, mustard, and rosemary, possess antimicrobial properties that, in some cases, can be used therapeutically. Others such as saffron, turmeric, tea and flaxseed provide significant protection against cancer (Lucas, 2010). For example, thyme and garlic contain certain antibiotic substances that prevent bacteria growth in the mucus, and are of great benefit for the respiratory system, and helps reduce cholesterol levels and high blood pressure (Okigbo and Mmekka, 2006; Calixto, 2000; Pamplona-Roger, 1999). Herbal plants like Black cohosh (*Cimicifuga racemosa*), Dong quai (*Angelica sinensis*) and chaste tree berry (*Agnus castus*) have been reported to be specifically useful for premenstrual syndrome (Okigbo and Mmekka, 2006; Wuttke, 2000). Herbal medicines are good dietary supplements, which are nutritive and replenish the body. For example, sunflower seed (*Helianthus annuus*) and moringa provides vitamin B6 (Pyridoxine) (Okigbo and Mmekka, 2006). Several well-known orthodox medicines like morphine, taxol, colchicine, digoxin, artesunate, guanidine, ephedrine, reserpine, vincristine, atropine, and codein could trace their sources to herbs (IUPAC, 2008).

2.5 Side Effects of herbal medicine

Yeboah (2000) aptly pointed out that traditional health services do not have the answers to all of the health problems in Ghana. While many herbs may be considered safe, some have hazardous side effects (IUPAC, 2008). Herbs believed to have an effect on blood clotting abilities (for example, ginkgo biloba and ginseng) may cause serious side effects for patients with certain blood-related conditions such as haemophilia (Lucas, 2010).

Herbal medicines may interact with prescription medications, over-the-counter drugs, vitamins and minerals. For example, the herbal medicine ginkgo biloba, taken with ibuprofen may lead to spontaneous and/or excessive bleeding. High doses of garlic may also enhance the adverse effects

of anticoagulant and anti-platelet drugs, including aspirin, clopidogrel (Plavix), enoxaparin (Lovenox), and others (IUPAC, 2008).

Studies have also shown that though about three thousand herbal formulations have been documented as being efficacious for specific conditions in Ghana out of which over six hundred are circulating as herbal medicine products, only a little above sixty have undergone preliminary phyto-chemical analysis and safety test at the Centre for Scientific Research into Plant Medicine at Mampong, which is the institution mandated by the government to undertake research and development of plant medicine, assess and approve the efficacy and long term safety, and clinical monitoring of herbal medicine products in Ghana (Darko, 2009; Abbiw et al, 2002).

Additionally, adulteration, inappropriate formulation, or lack of understanding of plant and drug interactions have led to adverse reactions that are sometimes life threatening or lethal (Lucas, 2010; Elvin-Lewis, 2001). For instance, in 1996 more than 50 people in Belgium suffered kidney failure after taking herbal preparation which contained *Aristolochia fangchi* (a toxic plant) instead of *Stephania tetrandra* or *Magnolia officinalis* (WHO, 2003b).

2.6 Socio-demographic background of users of herbal medicine

Patronage of herbal medicine is not restricted to a particular group of people, but involves patients from every social, economic and academic class, and is encouraged by culture and traditional societal beliefs.

A study by Falconer et al. (1992) found that 96% of people in villages in Western and Ashanti Regions of Ghana used herbal medicines. In the same study, it was also found that 84% of the users of herbal medicine in these areas used self-treatment with herbal medicine as first recourse when sick, 11.5% used pharmaceuticals as first recourse, and only 4% visited the clinic as first

course. Moreover, the study by Falconer et al. (1992) discovered that only 10% of urban dwellers used herbal medicines as first option when ill, and 60% used herbal medicines only after orthodox treatment had failed.

In a similar study by Fosu (1981) in Akwapim Berekuso, women were more likely to rely on herbal medicines than men. Women are less likely than men to consult modern health services, less willing to wait longer than men to seek treatment when ill, less reluctant to spend limited resources on their own needs, and often cope with illness by self-treatment, consulting traditional healers, or by simply living with the condition and its resulting discomfort (Rathgeber and Vlassoff, 1993).

As a matter of fact, Falconer et al. (1992) discovered that the level of education attained made a difference in the type of treatment respondents sought in villages in Western and Ashanti Regions of Ghana. University educated people sought herbal remedies in only 3% of cases. Comparatively, 54% of those who had completed secondary and middle school sought herbal remedies, whilst 66% of those with no schooling used herbal remedies.

Furthermore, complaints treated by herbal practitioners differ between urban and rural dwellers (Buor, 1993; Brown, 1992). Generally, herbal practitioners in the rural areas are consulted at the early stages of diseases and for more acute complaints, often before a biomedical practitioner (Brown, 1992). On the other hand, 'neo-herbalists' in the urban areas are consulted for persistent problems for which patients cannot find a cure from modern medicine (Brown, 1992).

Additionally, the religious background of an individual may also influence the type of treatment sought. According to Mensah (2008) and Asaah et al. (2003), some Christians consider traditional healers to be associated with fetishes and superstition, which is against their religious beliefs. Moslems avoid certain traditional remedies including palm wine and animal parts, which they consider to be unclean for consumption. While modern medicine follows scientifically well-

established and explicable principles, traditional medicine is based on principles that are often difficult to explain. For example, the healing practices of the Fulani people, which include singing songs, offering protective rings and reciting verses of the Koran in treating certain curses and in protecting people from evil spirits (Asaah et al., 2003).

2.7 Reasons for Patronage of Herbal Medicine

There are several reasons for the use of herbal medicine and these vary from country to country (Shaikh and Hatcher, 2005). The most common reasons for the continued patronage of herbal medicine are that, it is more accessible, more affordable, culturally acceptable, and above all effective (Darko, 2009; Obomsawin, 2007; Okigbo and Mmekka, 2006; Twumasi, 2005a; Davies, 1994, Buor, 1993).

In developing countries, broad use of herbal medicine is often attributed to its availability and physical accessibility (WHO, 2002a). Herbal medicine is more readily accessible and available to many people, especially rural areas (Baidoo, 2009; Darko, 2009 and Twumasi, 2005a). Thus, Buor (1993) argues that traditional medicine is more easily accessible to the rural populace, who constitute a greater proportion of the total population of the country, especially in the northern regions of Ghana where modern medical facilities are barely adequate. In Ghana, for instance, the ratio of herbal practitioners to the population is 1:400. This contrast starkly with the availability of allopathic practitioners, for which the ratio is 1:12,000 (Darko, 2009; WHO 2003; Abbiw et al, 2002). Moreover, the distribution of allopathic practitioners may be uneven, with most of them being found in the cities or other urban areas and thereby making it difficult for rural populations to access (WHO, 2002a). Often, modern health care facilities are inadequate in the rural areas and sometimes even non-existent. As a result, drug peddlers, and particularly herbal practitioners become the first point of contact for the majority of the rural population (Baidoo, 2009; Darko, 2009).

Another important reason for the increasing patronage of herbal medicine is its relative affordability. In some communities it is the only available health care system that is affordable to the poor (Darko, 2009; Twumasi, 2005a). This is because, compared to the modern health care, herbal medicine is less expensive and herbal practitioners are more willing to accept delayed payment, payment in kind such as fowls, goats, palm oil, salt, or palm wine, or in some cases patients can negotiate the amount (Darko, 2009; Okigbo and Mmekka, 2006; DeJong, 1991). Buor (1993), in finding out the impact of traditional medicine on health delivery services in the Ashanti Region of Ghana, argued that herbal medicines are relatively cheaper than modern medicines. Therefore, to achieve “health for all” there is the need to integrate it into the modern health care system.

Significantly, the utilisation of herbal medicine is often due to its cultural acceptability, especially in the rural areas of developing countries (Darko, 2009; Obomsawin, 2007; WHO 2002a). Herbal practitioners know the socio-cultural background of the people they are dealing with and offer a satisfied and culturally meaningful interpretation of illness (Darko, 2009; Twumasi, 2005a). Davies (1994), comments that herbal practitioners are part of the medical culture of the society and as socially sanctioned authorities of health care, they are less likely to overlook important cultural beliefs and practices, and can give culturally relevant and effective advice needed by their clients to understand and follow both traditionally and non-traditionally prescribed treatments. Twumasi (2005a), states that traditional practitioners speak to their patients or their relatives in a language that they could easily understand and follow, hence the high patronage. This supports the work of Buor (1993) who asserts that the rural and illiterate community has such confidence in the work of traditional healers that their activities tend to have psychomatic effect on them. Thus, according to Fakeye et al., (2009), it is not unusual for patients to consult herbal medicine first, only to fall back on orthodox medicine when all other measures have failed. Van der Geest (1997) also argues that the cultural affinity between traditional healers and their patients support the

increasing patronage of such medicines. According to him, the fact that traditional healers and their patients share ideas about the origin, meaning and preferable treatment of illness enhances the efficacy of treatment.

2.8 Integration of traditional and orthodox medicine

The World Health Organization (2002a, 2000b) describes three systems of healthcare considering the relationship between traditional and orthodox medicine. The first is the integrative system, where traditional medicine is officially recognized and incorporated into all areas of health care. This can be found in countries such as China, Korea, Sri Lanka, India, Australia, and Vietnam. The second is inclusive system, where traditional medicine is recognized, but not yet completely integrated into all aspects of health care (for example, United Kingdom, United States of America, Canada, Norway, Germany, Japan, Nigeria, Indonesia, and United Arab Emirates). The third is the tolerant system. With this system, the national health system is totally based on allopathic medicine although some traditional medical practices are tolerated by law (for example, Italy). Currently, Ghana practices the inclusive system in which traditional medicine is used side by side with orthodox medicine, but has not been fully incorporated into modern health care system. Recently, there have been numerous calls for the integration of traditional medical practices into modern health care services. From Van der Geest's (1997) perspective, the gap in the shortage of health personnel can be bridged by training traditional practitioners as community health workers, which is relatively cheaper and quicker. According to DeJong (1991), the integration of traditional medicine with orthodox medicine is particularly necessary for enhancing health manpower development and service expansion. Integrating traditional healers into healthcare system ensures the sustainability of the system, because these workers are more likely to stay in the country, more especially in the rural areas, since they are unlikely to trade their beliefs and methods for biomedicine.

Twumasi (2005a) does not view traditional and modern health care systems as mutually exclusive, but rather believes that people can maintain a parallel set of orientations and may be positively oriented to both traditional and modern medicine. It would be expected then that in keeping with the pragmatic spirit characteristic of so many aspects of life, the sick person will show a willingness to take what each medical practice offers, accepting each practice to the degree that its usage appears to yield favourable results (Twumasi, 2005a). Indeed, integration between modern and traditional medicine will promote a clearer understanding of the strengths and weaknesses of each, and encourage the provision of the best therapeutic option for patients.

As Warren et al. (1982) points out, the majority of Ghanaians regard the two systems as acceptable and viable alternatives, and patronise both freely. Therefore, the conditions for a cooperative collegial link between the two exist. Since the objective of both medical systems is to cure patients, which both have actually been found to do so, a balance needs to be found between these two methods, considering the fact that one is preferred over the other by local people under certain circumstances. If, for example, a person sustains an injury consisting of a fracture and a skin wound, he may treat the fracture traditionally and the wound using modern practices and materials. It is likely that this combination will lead to complementarities, though care needs to be taken to prevent possible antagonistic effects (Shaikh and Hatcher, 2005).

Accordingly, comprehensive integration of traditional health care system into the mainstream health care system will help control herbal medicine and products usage and improve traditional health services' safety and reliability (Davies, 1994; DeJong, 1991). DeJong (1991), for instance, acknowledged that by not integrating the two distinct health systems, the health care sector is losing out as exchange of information between the two structures are limited. Moreover, integration of modern and traditional health care systems, especially herbal medicines has developmental implications. Herbal medicines are highly effective in the treatment of certain

diseases such as boils, piles, hypertension, diabetes, asthma, stroke, and malaria among others. By incorporating into modern health care system, Ghana stands a better chance of strengthening its safety, efficacy and quality as well as developing traditional pharmaceutical companies that will legally sell these products. In effect, by developing effective traditional health care system, the country becomes more self-reliant (Van der Geest, 1997), therefore reducing its dependence on imported drugs that are relatively expensive. What is more, this will generate revenue for the country through the sale and export of herbal drugs and taxes, thus, boosting economic development and improving living conditions.

Traditional medicine has been formally recognised by governments of Ghana. As part of the effort to boost African and indigenous medicine, the Psychic and Traditional Healing Association was formed in 1963, and in 1974 official recognition led to the establishment of the Centre for Scientific Research into Plant Medicine at Mampong. The Centre was set up by the government in an attempt to carry out systematic research on the efficacy of herbs used by indigenous healers, and the Centre also has a clinic where treatments are used. In response to the WHO guidelines, the Ministry of Health set up experimental programmes in Primary Health Training for Indigenous Healers (PRHETIH) in Techiman District, and this project has since been replicated in other Districts with the support of various non-governmental organisations (NGOs). Furthermore, in 1999, through the effort of the government, all traditional healthcare associations were merged into the Ghana Federation of Traditional Medicine Practitioners (GHAFTRAM) to enhance capability building and the sharing of information among traditional medical practitioners.

The Ghana Traditional Medicine Practice Act, 2000 (Act 595) was formulated by traditional healers and passed in Parliament in 2000, mandating the establishment of a council to regulate and to set standards for the practice of traditional healthcare, to register and license traditional healers in the country, and to regulate the preparation and sales of herbal medicines and products (WHO,

2001). Accordingly, a Traditional Medicine Practice Council (TMPC) was established. Moreover, to promote the study and practice of herbal medicine in the country, the government established a programme at the Faculty of Pharmacy in the Kwame Nkrumah University of Science and Technology, to train those interested in herbal medicine.

However, despite government and institutional support, a number of impediments to the successful integration of the two medical systems have been observed in Ghana and elsewhere. It is often noted that the diversity in therapeutic services provided by traditional health care makes it difficult for the government to integrate them into the national health care system (DeJong, 1991). Moreover, concerns have constantly been raised by government officials, health authorities, international organizations, and researchers about traditional health care system's reliability and safety (WHO, 2001). The quality of herbal medicine and products and qualifications of traditional healers are sometimes questioned (WHO, 2001).

As a result, Van der Geest (1997) uses the term "cooptation" to describe the process by which the paradigms of orthodox medicine still dominate but allow a little of the traditional practices, especially those that can be scientifically proven, to be accommodated within its service. This process, he argues, is that which is happening in many countries. Despite these problems, the many advantages and benefits offered by a more integrated approach to health makes it a compelling proposition, and there appears to be a degree of commitment to such a policy by many governments, health and research personnel in Ghana. The opportunities which it presents, to provide cost effective medical care to inaccessible rural areas, make further researches, efforts and investments a priority.

For this to become a reality, however, several difficulties need to be overcome. One of these is the fact that some traditional healers consider part of their knowledge and experiences to be confidential, and will not readily disclose them to others. Also, some of the herbs they use are not

well documented, which makes communication about such plants more difficult. Most traditional healers have a poor educational background, which makes it difficult for them to understand modern practices and explanations. Some modern health practitioners, moreover, tend to adopt a superior attitude towards traditional practitioners (Baidoo, 2009; Darko, 2009).

In China, the integration of traditional Chinese medicine into the national health care system began in the late 1950s (WHO, 2000b). This was in response to national planning needs to provide comprehensive healthcare services. Hospitals practising traditional Chinese medicine treat 200 million outpatients and almost three million inpatients annually. Overall, 95% of general hospitals offering promotional and curative applications in China have traditional medicine departments which treat about 20% of out-patients daily. In India, there are over 1.5 million practitioners of traditional medicinal system using medicinal plants in preventive (Verma and Singh, 2008).

Sri Lanka has health care practice which is a good example of possible integration at the level of service delivery. There, all systems are allowed to practice freely but an enquiry is mandatory if there is any casualty of suspicious nature. This enquiry is conducted by a group of respectable local people. Because of this practice many folk practitioners refer serious cases to medical doctors, as cases of psychomatic ills are referred by medical practitioners to local healers. Thus, Sri Lanka, with its meagre resources, has evolved one of the best health care systems in Asia and has achieved health targets almost on par with the western standards (WHO, 2000b).

In these countries, herbal medicines are highly developed, well documented, and practised not only at the family, community, and primary health care levels, but also in hospitals providing secondary and tertiary care. Again, herbal practices in these countries are based on systematic knowledge, comprehensive methodology, and rich clinical experiences (WHO, 2000b).

2.9 Models on healthcare utilization

This section examines two of the prominent models that have been used to study health care utilization after which one will be selected and adopted for this study.

2.9.1 Gravity models

Quantitative models and frameworks have been used in studies on health services utilization. One of the quantitative models is the gravity model (Buor, 2008; Shannon et al., 1969; Morrill and Earickson, 1968). The gravity model is used to predict the degree of interaction between two places as well as predict the number of people likely to use one central place (Rodrigue et al., 2009). It is based on the idea that as the importance of one or both of the location increases, there will also be an increase in movement between them. Simply stated, interaction is assumed to decline with increasing distance. Gravity models have been used to measure geographical accessibility and predict the utilization of health facilities and providers. The reason gravity models have proven useful is that they allow for the interaction between the phenomena being studied such as that between patients and health care providers to be measured in relation to distance or travel time. When used to measure the accessibility of healthcare the gravity model is usually an ideal choice because interaction or utilization of facilities, services, or providers by consumers/patients drops off with increasing distance (Rodrigue et al., 2009; Carrothers, 1956). However, there is the difficulty in applying these mathematical models to developing countries where quantitative data are scarce and, where applicable, are unreliable. There is also the problem of determining the values of certain parameters that work into the models (Buor, 2008).

2.10 The behavioural model of health service utilization

Traditionally, the Behavioural Model of Health Services Utilization (Andersen, 1995; Andersen and Newman, 1973) has been the basis of most works on access and utilization of health care. The purpose of the framework is to discover the conditions that either facilitate or impede utilization

of health services. The model has four components, including environment, population characteristics, health behaviour, and health outcomes (Andersen, 1995).

This work is set within the framework of the behavioural model of health service utilization.

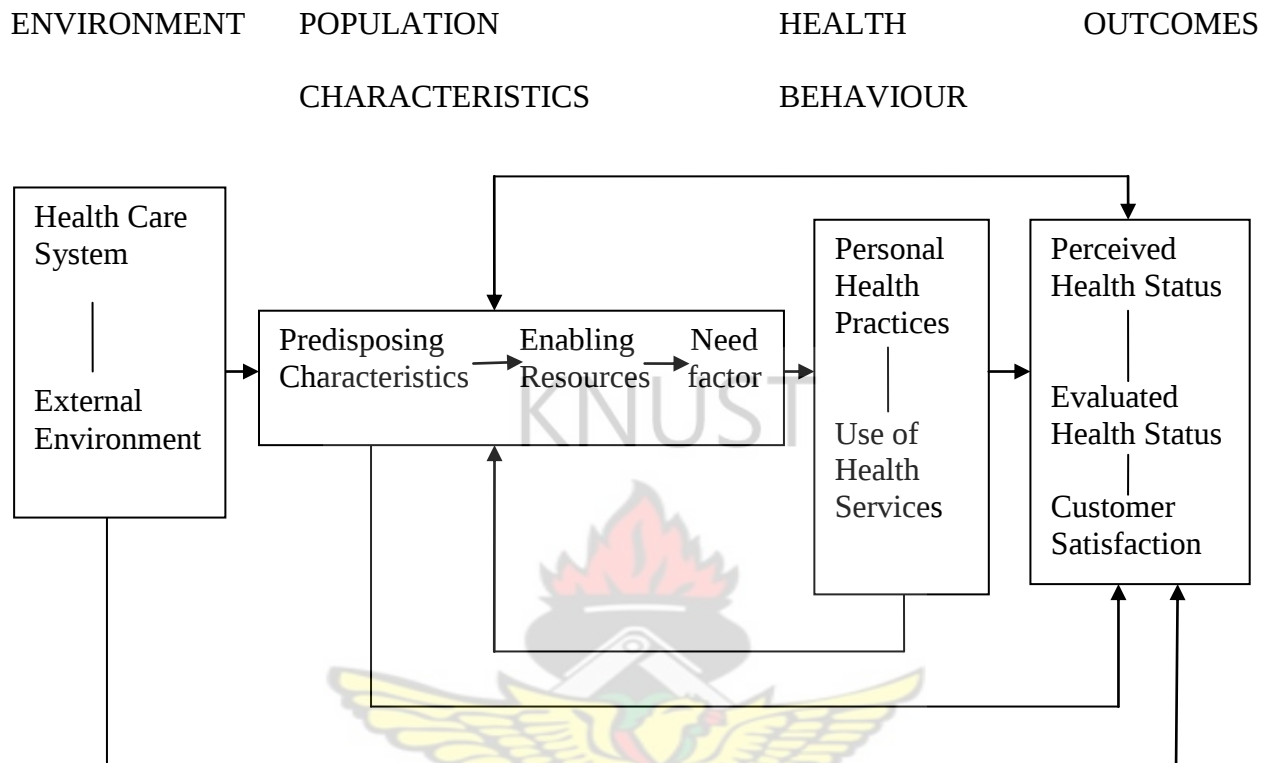
Andersen and Newman (1973) framework for viewing health services utilization takes into account societal and individual determinants of health service utilisation. The societal determinants include the norms about the health care system and the external environment. The individual determinants include predisposing characteristics, enabling resources and need factors. The societal determinants are shown to affect the individual determinants both directly and through the health service system. The various types of individual determinants then influence the health services used by the individual.

Basically, the behavioural model proposes that individual's access and use of health services is a function of the three individual determinants, namely predisposing characteristics, enabling resources and need factors (Andersen and Newman, 1973). The model, thus, assumes that a sequence of conditions contribute to the type of volume of health service a person uses. The use of a health service then depends on the predisposition of the individual to use services, his ability to secure the services, and his illness level (Andersen and Newman, 1973).

According to Andersen (1995), individuals are predisposed to use health services depending upon their socio-cultural characteristics that exist prior to the illness, such as **demographics** (age and sex), **social structure** (education, occupation, ethnicity, social networks, social interactions and culture), and **health beliefs** (attitudes, values, and knowledge that people have concerning and towards the health care system). The social structure variables reflect the location (status) of the individual in his society as measured by characteristics such as education and occupation of the family head (Andersen and Newman, 1973). These characteristics predict what the lifestyle of the

individual may be, and they point to the physical as well as social environment of the individual and associated behaviour patterns which may be related to the use of health services.

Figure. 2.1 THE BEHAVIOURAL MODEL OF HEALTH SERVICE UTILIZATION



Source: Andersen and Newman (1973)

With respect to the attitude or beliefs about medical care, it is believed that what an individual thinks about health may ultimately influence health and illness behaviour (Andersen and Newman, 1973). Health beliefs are not considered to be of a direct reason for using health service, but do result in differences in inclination toward use of health services. For example, families who strongly believe in the efficacy of herbal treatment might seek the services of a herbal practitioner more often than families with less faith in the results of herbal treatment.

Enabling resources either impede or promote health service use (Andersen, 1995). An enabling resource is defined as a condition which permits an individual or family to act on a value or satisfy a need regarding health service use (Andersen and Newman, 1973). This implies that even though

individuals may be predisposed to use health services, some means must be available for them to do so. Thus, enabling conditions make health service resources to the individual.

The enabling resources include personal or family resources and community resources. The personal or family resources can be measured by level of income, level of health insurance coverage, whether or not the individual has a regular source of care, transportation, and the extent and quality of care (Andersen and Newman, 1973). Moreover, available health personnel, available health facilities, and waiting times at the facilities are characteristics of the community that affect the use of health service by an individual (Andersen, 1995; Andersen and Newman, 1973). That is, if the health resources in a community are reasonably plentiful and can be used without queuing up, they might be used more frequently by the population.

Other measures of the community resources include region of the country and the rural-urban nature of the community in which the family lives (Andersen and Newman, 1973). These variables might be linked to utilization because of local norms concerning how medicine should be practiced or overriding community values which influence the behaviour of the individual living in the country. There may however, be possible additions such as genetic factors and psychological characteristics (Andersen, 1995).

Eventually, the **need factors**, according to Andersen (1995), are the immediate cause of health service use, from functional and health problems that generate the need for health care services. The need factors may be perceived or evaluated (Andersen and Newman, 1973). Perceived need refers to “how people view their own general health and functional state, as well as how they experience symptoms of illness, pain, and worries about their health and whether or not they judge their problems to be of sufficient importance and magnitude to seek professional help” (Andersen, 1995). On the other hand, evaluated need “represents professional judgement about people’s health status and their need for medical care” (Andersen, 1995). Assuming the presence of

predisposing and enabling conditions, the individual or family must perceive illness or the probability of its occurrence for the use of health services to take place. In addition to the perception of illness by the individual or his family, a clinical evaluation is also necessary, because once the individual seeks care from a health care system, the nature and extent of that care is in part determined by them (Andersen and Newman, 1973).

Measures of perceived illness include number of disability days that an individual experiences. Such days are those during which the individual is unable to do what he usually does, be it work, going to school, caring for the house, or playing with other children (Andersen and Newman, 1973). Other measures of perceived illness include symptoms the individual experiences in a given time frame and a self-report of general state of health, for example excellent, good, fair, or poor. On the reverse, evaluated illness measures are attempts to get at the actual illness or problem that the individual is experiencing and the clinically judged severity of that illness as well as the physical examination of the individual (Andersen and Newman, 1973).

2.11 The behavioural model and the study of herbal medicine

Basically, only modern health services, such as physician, hospital and ambulatory services, have been studied using the Behavioural Model of Health Service Utilization. The application of this model to study the use of herbal medicine is rare, although some notable exceptions exist (Wister et al., 2002; Kelner and Wellman, 1997; Votova, 2003). For instance, in the study of self-care practices in Vancouver, Wister et al. (2002) found that people who used complementary and alternative medicine (CAM) such as herbal medicine, acupuncture and chiropractic, mostly did so out of need. Thus, predisposing factors such as age and gender, and enabling resources such as income, only had a modest effect on the use of alternative therapy in the study.

Kelner and Wellman (1997) also used the Behavioural Model of Health Service Utilization to study the use of CAM among three hundred Toronto patients in Canada. They found marked differences in the education levels and gender (predisposing factors) of CAM users compared to non-users. They also noted that those who used CAM reported greater levels of spirituality (enabling factors) than those who did not use CAM (Kelner and Wellman, 1997). In all, Kelner and Wellman (1997) concluded that the Behavioural Model of Health Service Utilization can be “fruitfully applied to the use of alternative, as well as conventional medical services” (p. 211).

The Behavioural Model of Health Service Utilization by Andersen and Newman (1973) will be adopted to explain the use of herbal medicine, with illustrations from the literature. The model has the use of herbal medicine as dependent variable and influencing the utilization of herbal medicine and showing relationship with it are predisposing characteristics (gender and education), enabling resources (income or economic status), need factors (nature of illness), the spatial setting (rural or urban), and the reasons for patronage (efficacy, accessibility, affordability and cultural acceptability).

2.11.1 Predisposing characteristics and the utilization of herbal medicine

Most herbal medicine research studies show that there are demographic differences between users of herbal medicine and non-users (Darko, 2009; Buor, 1993; Rathgeber and Vlassoff, 1993, Falconer et al. 1992; Wondergem et al. 1989; Fosu, 1981). According to Darko (2009), Buor (1993) and Fosu (1981), patrons of traditional and herbal medicines are predominantly females and illiterates rather than males and literates. Level of education is a strong predictor of the use of herbal medicine and in a study by Buor (1993) in the Ashanti region of Ghana, education showed an inverse relationship with the use of traditional herbal medicine. That is, the higher the level of education, the lower the extent of herbal medicine used. A more educated person will have greater

exposure to modern forms of health care and is more likely to question the authority of herbal practitioners. Educated persons are less likely to accept blindly, the prescriptions of herbal practitioners. They are also likely to have higher incomes that enable them to afford orthodox medicines (Darko, 2009, Buor, 1993).

It is not unexpected that females have been found to use herbal medicine more than males. Women tend to be more introspective and concerned about health issues, with greater health awareness than their male counterparts (Mechanic, 1992; Strain, 1991). In most cases, these translate into higher levels of herbal medicine use (Votova, 2003; Kelner and Wellman, 1997). Also, females form a greater percentage of the poor in developing countries like Ghana and also predominantly live in rural areas where the use of herbal medicine is greater.

2.11.2 Enabling resource and the utilization of herbal medicine

Lower income levels and gifts such as domestic animals and staple foods are enabling resources for the utilization of herbal medicine. Income is a strong predictor of herbal medicine utilization and is positively related to it. In most cases, having a lower income increases the use of herbal medicine, especially in developing countries like Ghana (Darko, 2009; Brown, 1992; Falconer et al., 1992). On the hand, having a higher income increases the use of herbal medicine, especially in developed countries (Eisenberg et al., 1993; McClennon-Leong, 1999). This is because herbal drugs are relatively expensive in developed countries.

2.11.3 Need factors and the utilization of herbal medicine

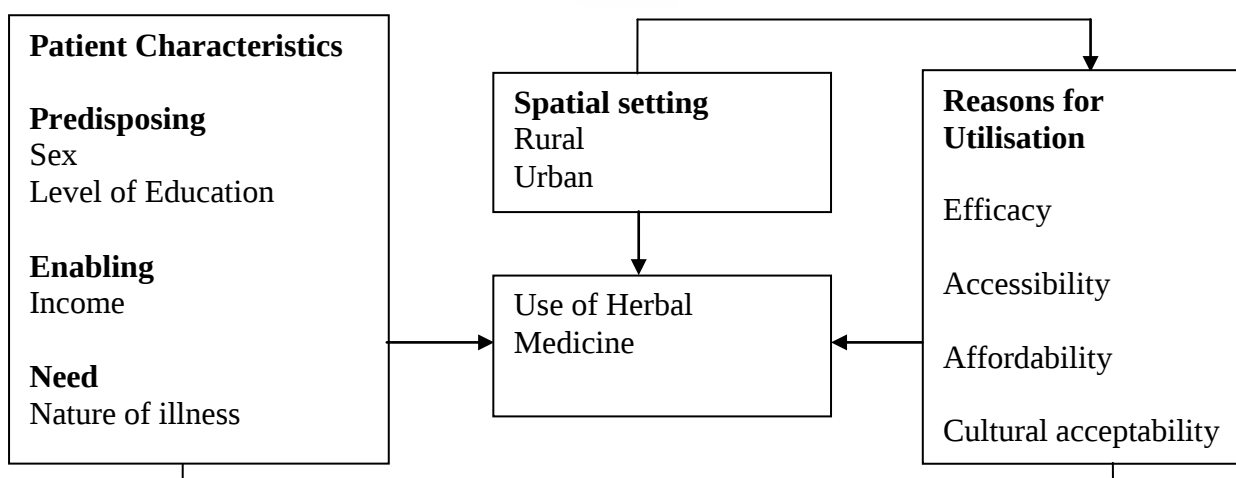
The need factor for the utilization of herbal medicine is the nature of an individual's illness. Herbal medicine has demonstrated efficacy in the areas of chronic and psychic ills, boils, tuberculosis, stroke, asthma, infertility, hernia, hypertension, diabetes and malaria, where modern medicine has either failed to produce equally good results or has simply ignored the need for

systematic attention and research (Twumasi, 2005a; Buor, 1993). Goldstein (2000) adds that medical doctors do not know as much about chronic illness and symptom management as they should, and that the way conventional medical system is structured limits the type of care a person with chronic illness can seek. Therefore, patients suffering from such ailments are more likely to use herbal medicine as their first line of treatment. Patients with simple and multiple fractures are also likely to rely on herbal medicine for their health.

Eventually, the general overview of the predisposing characteristics, enabling resources, and need factors of herbal medicine utilisation indicate that there are differences between users and non-users of herbal medicine and even between different types of users of herbal medicine there are different reasons for their actions.

Taking the conditions in rural areas in particular, and that of Ghana in general, into context; and bearing in mind that other variables such as the spatial setting, efficacy, affordability, cultural acceptability need to be tested to discover any possible emerging trends in rural areas and developing countries, a new hypothetical model adapted from the behavioural model is used for the study.

Figure 2.2 MODIFIED BEHAVIOURAL MODEL ON UTILIZATION OF HERBAL MEDICINE



Source: Adapted from Andersen and Newman (1973)

The model has the use of herbal medicine at the centre, being the dependent (outcome) variable. Influencing the use of herbal medicine, and showing a relationship with it are the predisposing characteristics, enable resources, need factors, spatial setting, efficacy, accessibility, and cultural acceptability. It can be seen that patient characteristics influence the level of use of herbal medicine. Patient characteristics are made up of predisposing, enabling resources and need factors. Predisposing characteristics include the sex and level of education of the patient, enabling resources include the income of the patient, and the need factors include the nature of the illness. Moreover, the spatial setting of a people determines their level of use of herbal medicine. This includes rural and urban setting. Also, the use of herbal medicine depends on its efficacy, accessibility, affordability and cultural acceptability. For example, one is more encouraged to use health services if their perceived efficacy in ensuring good health is guaranteed.

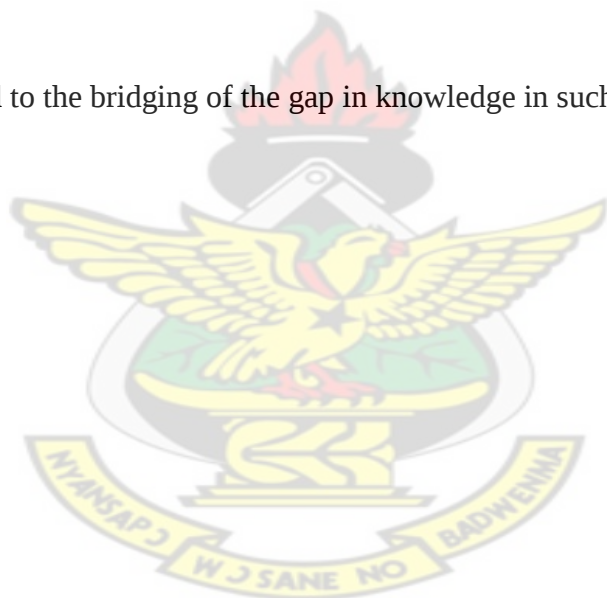
In sum, it could be deduced from the literature that herbal medicine has been recognised, both locally and internationally, for the treatment and prevention of illness. Countries like China, India and Sri Lanka have achieved tremendous successes in developing their medicinal herbs. This has helped in the delivery of quality and accessible health care in these countries. It is estimated that 80% of the total population of the world rely on herbal medicine, one way or the other for their health. Worldwide, it is estimated that 35,000 to 70,000 species of plants have at one time or another, been used in some cultures for medicinal purposes. Patronage of herbal medicine is not restricted to a particular group of people, but involves patients from every social, economic and cultural class.

Several reasons account for the use of herbal medicine and these vary from country to country. Among these are its efficacy, accessibility, affordability, and culturally acceptability. Herbal medicine is effective in the treatment of malaria, boils, tuberculosis, stroke, arthritis, epilepsy, asthma, infertility, hernia, hypertension, diabetes, depression, sexually transmitted diseases,

typhoid fever, yellow fever, menstrual problems, and mental illness. However, herbal remedies do not have the answers to all health problems. While many herbs may be considered safe, some have hazardous side effects. There is the need therefore to, comprehensively, integrate orthodox and traditional health care practices so as to promote a clearer understanding of the strengths and weaknesses of each system, and encourage the provision of the best therapeutic option for patients.

That is why this thesis examines the extent of utilization of herbal medicine in Ghana and evaluates its perceived efficacy and possible integration into orthodox health care, especially in the Wassa Amenfi District of the Western Region where no work of similar significance has been carried out.

This will, therefore, add to the bridging of the gap in knowledge in such an important field.



CHAPTER THREE

3.0 BACKGROUND TO THE STUDY AREA

3.1 INTRODUCTION

This chapter presents the geographical description of the study area. The chapter deals with the physical characteristics of the Wassa Amenfi West District, with emphasis on its location, size and administrative structure, relief and drainage, weather and climate, geology, and vegetation and soil conditions. Furthermore, the chapter discusses the demographic and socio-economic characteristics of the people of Wassa Amenfi West District in terms of the population, education, health, water and sanitation, economic activities, and settlements and transportation networks. The chapter analyses the implications of these background characteristics for the theme of the research, that is, the role of herbal medicine in health care delivery.

3.2 PHYSICAL BACKGROUND

3.2.1 Location, size and administrative structure

The Wassa Amenfi West District is located in the middle of the Western Region of Ghana. Its capital, Asankrangwa, is about 160 kilometres (km) from the regional capital, Sekondi-Takoradi (Forster, 2009; MLGRD, 2006). It is one of the seventeen (17) administrative districts of the Western Region. The district is located between latitudes 5°30'N and 6°15'N of the equator, and longitudes 1°45'W and 2°11'W of the Greenwich Meridian (WAWDA, 2006). The district has a total land area of 3,464.61 square kilometres (km²). This forms about 14.5% of the total land area of the Western Region. It is bounded to the west by Aowin-Suaman and Sefwi Akontombra Districts, to the east by Prestea-Huni Valley and Wassa Amenfi East Districts, to the south by Jomoro and Ellebelle Districts, and to the north by Bibiani-Anhwiaso-Bekwai District as shown by Figure 3.2 (WAWDA, 2006).

There are two hundred and forty two (242) communities, sixteen (16) divisional chiefs, and two electoral constituencies in the Wassa Amenfi West District. The constituencies include Amenfi West, with Asankrangwa as its capital, and Amenfi Central, with its capital at Manso Amenfi (MLGRD, 2006; WAWDA, 2006). The Wassa Amenfi West District Assembly is the highest political administrative authority in the district. The Assembly is made up of forty seven (47) members of who thirty two (32) are elected and fifteen (15) appointed by the President of Ghana in consultation with the traditional authorities and other interest groups in the district (MLGRD, 2006; WAWDA, 2006).

The sub-structure of the Wassa Amenfi West District Assembly is constituted as follows. There is one (1) Town Council at Asankrangwa and seven (7) Area Councils, namely Manso Amenfi, Samreboi, Asankran Breman, Juabo, Adjakaa Manso, Achichire, and Agona Amenfi (MLGRD, 2006; WAWDA, 2006). This is meant to deepen the decentralisation process and strengthen the participation of the local people in the development process and governance of their communities. Notwithstanding the inauguration of these sub-structures, they are not functioning as expected due to inadequate funds to recruit and pay staff as well as organize meetings (WAWDA, 2006). The map of the Wassa Amenfi West District (Figure 3.3) shows some of the communities in the district and also highlights the study communities for this research.

3.2.2 Weather and climate

The Wassa Amenfi West has two main seasons, namely dry and wet seasons. These two seasons are influenced by the tropical continental (cT) air mass and the tropical maritime (mT) air mass, respectively (Dickson and Benneh, 1988). The cool, dry Harmattan winds of the cT air mass originate from the Sahara-Arabian Deserts and invade Wassa Amenfi West between November and February (Dickson and Benneh, 1988). The mT air mass, on the other hand, has its source

from the South Atlantic Ocean and blows over Wassa Amenfi West District from April to October (Dickson and Benneh, 1988).

The Wassa Amenfi West District forms part of the wet semi-equatorial climatic region of Ghana, making it the wettest parts of Ghana. It experiences double maxima rainfall regime with March to June as the major rainy season, and from September to early December as the minor (WAWDA, 2006). The mean annual rainfall ranges from 173mm in the southern part of the district to 140mm in the north. However, two dry seasons - from December to February and in August, separate the wet seasons in terms of range and intensity. Temperatures are also generally high ranging from 24°C to 29°C. Maximum temperatures occur in March while the coolest month is August (WAWDA, 2006).

These climatic conditions help to promote the district's rich forest resources of which medical plants are a major part. That is, the double maxima rainfall regime and high temperatures give favourable conditions for the growth of medicinal plants and other important trees such as wawa, mahogany, dahoma, onyina and sapele (MLGRD, 2006; WAWDA, 2006).

3.2.3 Relief and drainage

The topography of Wassa Amenfi West District is generally undulating with heights averaging 153 metres (500 feet). The district is drained by a good network of rivers and streams. Prominent among them are Tano, Ankobra, Fure, Bura, Brayere, and Samre (WAWDA, 2006). These water bodies could be a source of water for irrigation purposes, especially for vegetable farmers in the district. The volume of these water bodies however reduces considerably during the dry seasons.

During this time, most of them completely dry out, though this is the time they are mostly needed.

Figure 3.1 Map of Ghana showing study area

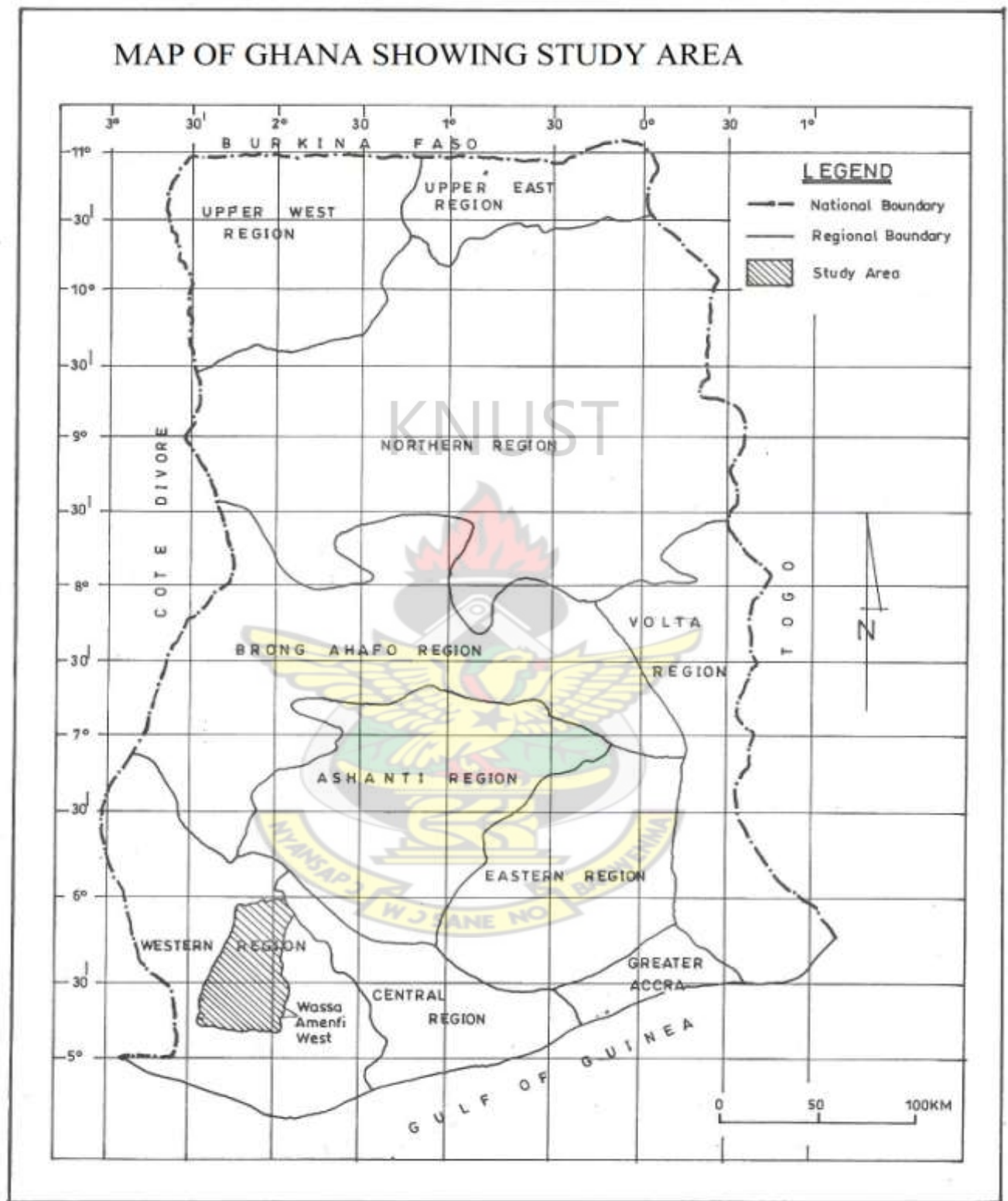


Figure 3.2 Map of Western Region Showing Wassa Amenfi West District

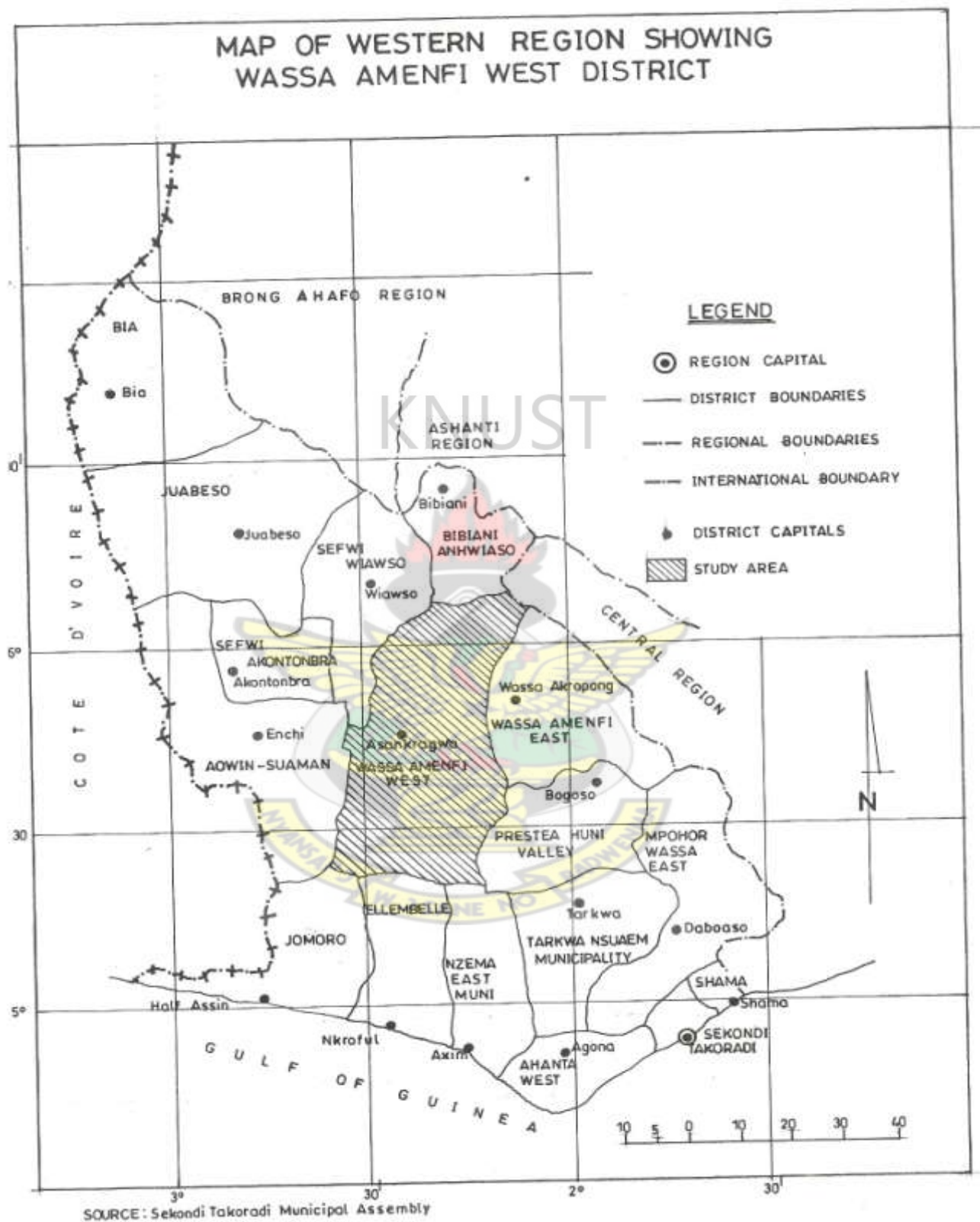


Figure 3.3 Map of Wassa Amenfi West District Showing Study Communities



SOURCE: Wassa Amenfi West Assembly

3.2.4 Geology

The Wassa Amenfi West District is located on the Middle Precambrian rocks of Birimian formation. The Birimian rocks are by far the economically most important geological formation in Ghana since they contain most of the minerals found in the country such as gold, bauxite, manganese, and diamond. Associated with the Birimian formation are extensive masses of granites and sediments of phyllites and schists (WAWDA, 2006; Dickson and Benneh, 1988).

Although a greater part of the district is positioned in the transitional zone of Sefwi and the Axim-Konongo gold belts, the district lies within the Kumasi Basin and partly within the Sefwi gold belt (WAWDA, 2006). The Asankrangwa-Manso-Nkwanta belt has gold potential and the rock type also provides a potential source of bauxite, iron-ore and manganese deposits. Alluvial gold deposits are found in the Tano River and Ankobra River basins within the district. Moreover, the Opon Mansi and Amoaman iron-ore deposits and diamond deposits at Sureso also features as economic assets for the district (WAWDA, 2006). Large enclaves of clay deposits are also available for exploitation by brick and tile industries. There is also rich underground water that can be tapped for both domestic and industrial uses (WAWDA, 2006).

3.2.5 Vegetation and soil

The vegetation forms an important part of the physical environment in an area and helps greatly in the definition of resources and character of the area (Dickson and Benneh, 1988). There are three main vegetation zones in the Wassa Amenfi West district, namely semi-deciduous forest, the south-west rainforest, and the transitional forest, all of which are suitable for the cultivation of both food and cash crops. The forests of the district are part of the only surviving high forests of Ghana (WAWDA, 2006). The semi-deciduous forest is found in the northern parts of the district, while the tropical rainforest is to the south where rainfall is heaviest. In between the two is the

transitional zone (WAWDA, 2006). Common among the trees found in these forest zones are Wawa, Mahogany, Onyina, Asanfina, Emire, Dahoma, and Sapele among others. The district is also the biggest source of bamboo in the country (MLGRD, 2006).

The rate of deforestation rate in the district is about 2% per annum. The high rate of deforestation is due primarily to logging, influx of migrant farmers, and inappropriate farming methods such as slash-and-burn. In spite of this, about 38% of the land is still under forest cover, mostly in forest reserves (Forster, 2009). There are five of these in all, and cover an area of 413.94km² (Forster, 2009; WAWDA, 2006). Some of the trees and plants in the forests have high medicinal value. The forests also protect water bodies such as the Tano, Ankobra, Fure and Bura by providing them with shade. Moreover, the various forests provide the necessary natural habitat and congenial atmosphere for different species of animals such as antelopes, deer, birds, squirrels, snails, snakes and a host of other forest animal species (WAWDA, 2006). The different species also add to the beauty of the environment and as tourist attractions.

The principal soils found in the district are forest ochrosols, oxysols, and forest ochrosol-oxysol intergrades (WAWDA, 2006; Dickson and Benneh, 1988). Forest ochrosols are mainly found in the semi-deciduous forests of the district. The soil is usually red, reddish brown, brown, yellow-brown or orange-brown. These soils contain greater quantities of soil nutrients, well-drained, generally alkaline in nature and rich in humus. Unlike oxysols, forest ochrosols soils are not highly leached. The soil thus supports many tree crops and this explains the district's rich timber resources and other crops such as cocoa (Dickson and Benneh, 1988).

The oxysols are found in the south-west rainforests of the district. The colour of the soils ranges from brown to orange. These soils are porous, well-drained, and generally loamy. The heavy and

copious rainfall leads to a high degree of leaching and therefore serious reductions in the quantity of calcium, magnesium and other nutrients that the soils hold. The leaching has also made the soils rather acidic. Because of their acidity, oxysols support the growth of such tree crops as rubber, coffee and oil palm in the district (Dickson and Benneh, 1988).

Forest ochrosol-oxysol intergrades dominate in the transitional forest. These soils occupy a substantial area between forest ochrosols and forest oxysols. In appearance, they are not easily distinguished from either of the two major forest soil groups, but they are not so well supplied with nutrients as the forest ochrosols, although they are better supplied than forest oxysols. They are mildly alkaline to mildly acidic and can be cultivated for cocoa to some extent (Dickson and Benneh, 1988). Generally, however, all the three soil types support the growth of food crops such as plantain, cassava, banana, avocado pear, maize, rice and pineapple.

3.3 SOCIO-ECONOMIC CHARACTERISTICS

3.3.1 Demographic characteristics

The total population of Wassa Amenfi District is 161, 166 in 2010 (Ghana Statistical Service, 2012). The population density is 46.5 per square kilometres. The economically active age group (18-45years) constitute about 43% of the population (MLGRD, 2006; WAWDA, 2006). About 75.6% of the active labour force is engaged in agriculture, whilst manufacturing and processing employs 7.5%. The services sector also engages 9.5% of the active labour force, with the public sector taking the remaining 2% (MLGRD, 2006; WAWDA, 2006). The population of Wassa Amenfi West District is composed of the Wassa, who are the indigenous people and a mixture of migrants from Ashanti, Akwamu, Assin, and Ivory Coast. There is a sizeable proportion of settler

farmers like Ewes, Krobos, Ashantis, Gomoas, Northerners and Brongs. The rich soil and forest resources attract people into the district, especially farmers (MLGRD, 2006; WAWDA, 2006).

3.3.2 Education

The level of education in the District is quite low (MLGRD, 2006; WAWDA, 2006). Inadequate and unevenly distributed educational infrastructure, inadequate trained or professional teachers, limited opportunities for higher post-primary education, and high drop-out rate, especially among school girls are among the reasons for the low level of education in the district established by government (MLGRD, 2006; WAWDA, 2006). There are one hundred and thirty seven (137) nurseries or kindergartens, two hundred and thirty four (234) primary schools, ninety four (94) Junior High Schools (J.H.S.), two (2) Senior High Schools (S.H.S.), one (1) vocational training school and one (1) commercial school in the area. The commercial school is however privately owned. There is also a Health Assistants Nursing Training College recently established (MLGRD, 2006; WAWDA, 2006).

Just as the number of teaching staff at the basic level in the district is woefully inadequate, most of them are not professionally trained. In 2005/2006 academic year, for instance, only twelve (12) out of a total of three hundred and thirty five (335) teachers at the pre-school level, were professionally trained (MLGRD, 2006; WAWDA, 2006).

The remaining three hundred and twenty three (323) were non-professionals. Also, professional teachers at the primary school level totalled up to two hundred and sixteen (216) compared to four hundred and forty (440) non-professionals. At the J.H.S. level, however, professional teachers were one hundred and sixty two (162) compared to one hundred and eight (108) non-professionals (MLGRD, 2006; WAWDA, 2006). The low level of education influences the high patronage of herbal medicine in the district (Buor, 1993).

Table 3.1 Schools in Wassa Amenfi West District

Level	Number of Schools		
	2004	2005	2006
Pre-School	99	112	137
Primary	150	155	234
J.H.S.	62	63	94
S.H.S.	2	2	2
Vocational	1	1	1
Commercial	1	1	1
Nursing	0	0	1
Total	315	334	470

Source: Wassa Amenfi West District Assembly, 2006.

3.3.3 Health and healthcare

The District has fourteen health care facilities, two of which are hospitals. The two hospitals are also privately owned by the Catholic Church of Ghana and Samartex Timber and Plywood Company Limited. The other health facilities are clinics and health centres (Ghana Health Service, 2009). Table 3.2 depicts the health facilities in the district and their locations.

Table 3.2 Distribution of health care facilities in Wassa Amenfi West District

Health Facility	Location
1. Adjakaa Manso Health Centre	Adjakaa Manso
2. Agona Amenfi Community Clinic	Agona Amenfi
3. Anyinabrim CHPS Compound	Anyinabrim
4. Asankran Breman Health Centre	Asankran Breman
5. Asankran Moseaso Health Centre	Asankran Moseaso
6. Asankran Saa Health Centre	Asankran Saa
7. Father Alan Rooney Memorial Hospital	Asankrangwa
8. Gravel yard Community Clinic	Gravel yard
9. Juabo Community Clinic	Juabo
10. Manso Amenfi MCH/FP Centre	Manso Amenfi
11. Nkwanta Community Clinic	Nkwanta
12. Nope Community Clinic	Nope
13. Samartex Hospital	Samreboi
14. Wesley Clinic	Asankrangwa

Source: Ghana Health Service, 2009.

The health professional staffing in the district is not encouraging. There are forty four health professionals including those on secondment to the two hospitals in the district, with a doctor-population ratio of 1:38,841 is approximately three times the national average of 1:13,683. They are made up of five medical officers (doctors), two medical assistants, five disease control officers, one laboratory technician, and thirty one nurses. The nurses in turn comprises thirteen community health nurses, seven midwives, one public health nurse, and ten registered general nurses (MLGRD, 2006; WAWDA, 2006). This calls for the services of herbal practitioners to augment the work of the inadequate orthodox healthcare professionals in the district.

Malaria is the most common disease in the district. For instance, the Asankrangwa Catholic Hospital, recorded 4,871 malaria cases in 2004 and 6,716 in 2005. This constituted 44.7% of all Out-Patient Department (OPD) attendance for 2004 and 54.5% for 2005, respectively. Malaria also formed 53.9% of total in-patient admission for 2004 and 43.8% for 2005. The figures are not different from other health centers and clinics within the district. The maternal mortality rate in the district is 757 per 100,000 live births, which is over and above the national rate of 214 per 100,000 live births (MLGRD, 2006; WAWDA, 2006). This calls for the need to use herbal medicine, which has been proven to be effective in the treatment of malaria, to complement orthodox medicine.

About 65% of the people in the district live between 6km and 35km away from health facilities and the road networks linking communities to the health facilities are mainly unmotorable, especially during the rainy seasons (MLGRD, 2006; WAWDA, 2006). The inability of the people to have access to health service have encouraged use of herbal medicine to bridge the gap created by the inadequate access to modern health care services.



Plate 3.1: Herbal Mixture ready for sale in Manso Amenfi



Plate 3.2 Packaged herbal bitters in the study area



Plate 3.3 Some herbal products displayed in the Manso Amenfi market

3.3.4 Water and sanitation

Generally, there are no organized waste collection points in most of the communities in the District, so people dump refuse at any convenient place. Erosion has also taken a toll on buildings in some of the communities in the district, due particularly to lack of proper drainage system, thus undermining the foundation of the houses (MLGRD, 2006; WAWDA, 2006). The poor drainage system has resulted in numerous pots of stagnant water that serve as breeding places for mosquitoes, resulting in numerous cases of malaria in the area.

Access to potable water in the district is inadequate. Out of the two hundred and forty two communities in the district, only four have access to pipe-borne water, while fifty eight have potable water through hand-dug wells. Pipe borne water is located in Asankrangwa, Samreboi, Manso Amenfi and Asankran Breman. Moreover, most of the homes have no toilet facilities. The poor sanitation coupled with inadequate potable water result in occasional outbreak of diarrhoea in the district. For instance, there were two hundred and ninety one victims in the 2004 diarrhoea outbreak at Asankrangwa (WAWDA, 2006). There is therefore the need to use herbal medicine to supplement orthodox medicine when there is disease outbreak as health centres might be overstretched.

3.3.5 Economic activities

Agriculture is the main source of income and the driver of the local economy of the study area. The sector employs about 75.6% of the active labour force. Cash crops grown in the district are mostly cocoa, coffee, oil palm, kola and rubber. Major food crops include plantain, cassava, maize, rice, pineapple, banana, garden eggs, and tomatoes (MLGRD, 2006; WAWDA, 2006). The district produces about 20% of the country's cocoa. The production of rice is about 1.25 tonnes per hectare and that of cassava is about 9.3 tonnes per hectare (WAWDA, 2006). About 56% of

the farmers use family labour, 36% use hired labour, and 25% use mutual help (nnoboa) in clearing their lands for cultivation (MLGRD, 2006; WAWDA, 2006).

Land acquisition is not a problem to the farmers in the district, because it is mostly on leasehold. Traditional methods of farming such as slash-and-burn, bush fallowing and shifting cultivation are the main methods practiced by the farmers. However, agro-forestry is also practiced in a few instances. There are 45,000 farmers and 16 extension officers, giving extension officer-farmer ratio of 1: 2,813 farmers. Farmers encounter a number of challenges among which are poor road network and low prices for produce, especially during bumper harvest (MLGRD, 2006; WAWDA, 2006).

In terms of mining, there are about forty (40) licensed small scale mining companies in the district, twelve (12) of which are active. Most of the mining activities in the district are, however, undertaken by illegal mining operators (Galamsey).

Manufacturing and processing sector also employs a mere 5.4% of the active labour force. The two large expatriate wood processing firms, Samartex Timber and Plywood Company Limited and Swiss Lumber Company Limited, are the main employers. Other small scale industries are oil palm processing, cassava processing, soap-making, and akpeteshie distilling among others (MLGRD, 2006; WAWDA, 2006).

The Services sector, made up of masons, dressmakers, hairdressers and carpenters among others, employs 7.5% of the active labour force in the district. Similarly, about 9.5% of the economically active population are engaged in commerce, while the public sector takes the remaining 2% of the labour force (MLGRD, 2006; WAWDA, 2006).

3.3.6 Settlements and transportation networks

Three of the settlements in the study area are classified as urban because they have population above 5000 and other characteristics like schools, hospitals, electricity and water facilities, while the remaining are rural. The urban settlements have the lion's share of infrastructure and other social amenities (WAWDA, 2006). The two Senior High Schools (SHS), the Commercial School, and the Health Assistants Nursing Training School are all located in Asankrangwa, while the National Vocational Training Institute is located in Manso Amenfi. In addition, Asankrangwa, Samreboi and Manso Amenfi have access to pipe-borne water, electricity, and telephone facilities. The two hospitals are located in Samreboi and Asankrangwa (WAWDA, 2006). Generally, about 48% of all the settlements have access to electricity and another twenty seven (27) communities are about to be connected to the national grid (WAWDA, 2006).

The Wassa Amenfi West District has 883.6Km length of roads. Out of this figure, however, only 40km (4.5%) has been tarred, which is the Bawdie-Asankrangwa road (MLGRD, 2006; WAWDA, 2006). The untarred roads are constantly prone to flooding during rainy periods, which make them unmotorable for close to eight months in a year (MLGRD, 2006; WAWDA, 2006).

3.3.7 Summary

In a nutshell, Wassa Amenfi West District is one of the largest districts of the Western Region. The district has two main seasons, namely dry and wet seasons and forms part of the wet semi-equatorial climatic region of Ghana, making it the wettest parts of Ghana. These climatic conditions show the district's rich forest resources of which medical plants are noted. The Wassa Amenfi West District is located on the Middle Precambrian rocks of Birimian formation which are by far the economically most important geological formation in Ghana. There are three main

vegetation zones in the district, namely semi-deciduous forest, the south-west rainforest, and the transitional forest, all of which are suitable for the cultivation of both food and cash crops. Some of the trees and plants in the forests have high medicinal value. The principal soils which cover the district are forest ochrosols, oxysols, and forest ochrosol-oxysol intergrades. The level of education in the District is quite low. Inadequate and unevenly distributed educational infrastructure, inadequate trained or professional teachers, limited opportunities for higher post-primary education, and high drop-out rate, especially among school girls are among the reasons for the low level of education in the district.

The District has fourteen health care facilities, two of which are privately owned hospitals. The health professional staffing in the district is not encouraging. There are only forty four health professionals and a doctor-population ratio of 1:38,841 is approximately three times the national average of 1:13,683. In the major communities, there is lack of proper drainage system and heaps of refuse are easily sighted upon entering the communities. Access to potable water is inadequate. Agriculture is the main source of income and the driver of the local economy of the study area. Three of the settlements in the study area are classified as urban based on their population and other characteristics like schools, hospitals, electricity and water facilities, while the remaining are rural. The Wassa Amenfi West District has 883.6Km length of roads. Out of this figure, only 40km (4.5%) has been tarred. The untarred roads are constantly prone to flooding during rainy periods, which make them unmotorable for close to eight months in a year.

CHAPTER FOUR

4.0 UTILIZATION OF HERBAL MEDICINE AND ITS ROLE IN HEALTH CARE DELIVERY

4.1 Introduction

This chapter presents the analysis and the results of the data collected. Analysis of the data is done according to the research objectives. The first objective of the study was to analyse the extent to which people patronise or use herbal medicine in the Wassa Amenfi West District. The second was to explore perceptions about the efficacy of herbal medicine in relation to orthodox. The third was also to find out background characteristics of people who use herbal medicine and the conditions under which they use it. The final objective was to examine the possibility of integrating traditional and orthodox health care systems and the prospects of achieving such integration. Percentages, cross tabulations, frequencies and charts were used to present the analysis. The socio-demographic background of the respondents is presented first.

4.2 Socio-demographic background of respondents

A total of 230 respondents were interviewed for the research. This was made up of 205 residents aged 18 years and above, 10 orthodox healthcare professionals and fifteen 15 herbal practitioners. In addition, four (4) focus group discussions of six (6) members each were held. The socio-demographic characteristics of the respondents under the study included sex, age, educational level, religious affiliation, marital status, employment status and place of residence.

As depicted in Table 4.1, about 67.3 percent of the residents interviewed were females and 32.7 percent were males. The high proportion of females may be because there were more females Than males in the study area and also most household heads were females.

Table 4.1 Socio-demographic background of the residents

Variable	Frequency	Percentage (%)
Sex		
Male	67	32.7
Female	138	67.3
Age group		
18-30	58	28.3
31-40	69	33.7
41-50	52	25.3
51 and above	26	12.7
Marital status		
Single	56	27.3
Married	119	58.0
Divorced	20	9.8
Widowed	10	4.9
Religious Affiliation		
Christianity	155	75.6
Islam	39	19.0
Traditional	8	3.9
Other	3	1.5
Level of Education		
No formal education	47	22.9
Primary	26	12.7
Junior High/Middle School	69	33.7
Senior High/Vocational School	41	20.0
Tertiary	22	10.7
Employment status		
Employed	146	71.2
Unemployed	59	28.8
Average monthly Income		
Below GH¢51	113	55.1
GH¢51-100	33	16.1
GH¢101-200	26	12.7
GH¢200-500	18	8.8
GH¢501 and above	15	7.3
Place of Residence		
Rural	156	76.1
Urban	49	23.9

Source: Field Data, 2011

The ages of residents who participated in the study ranged between 18 and 85 years. About 33.7 percent of the residents interviewed fell within the age group of 31-40 years, while 12.7 percent above 50 years. The greater proportion of the residents interviewed fell within the age group of 31-40 because of the youthful composition of district's population.

Moreover, 58 percent of the residents interviewed were married, while 9.8 percent were divorced. The high percentage of the married in the study area can be attributed to the fact that most of the residents were between the ages of 18 and 40 years, which correlate fairly with the reproductive age.

Christianity is the most practised religion in the study area. Nearly 76 percent of the residents interviewed were Christians, while 4 percent were traditionalists. This attests to the dominance of the Christian religion in the Wassa Amenfi West District. Even as Christians, they still use herbal medicine because of its efficacy, availability and affordability which makes it easily accessible. In terms of education, most (77.1 percent) of the residents interviewed have attained, at least, some level of formal education. Quite characteristic of the rural areas though, only 10.7 percent have tertiary education which includes university and polytechnic education and about 33.7 percent of them have junior high or middle school education. This shows the low level of education which also influences the high patronage of herbal medicine in the district.

About 71.2 percent of the users interviewed were employed with most of them as farmers and 28.8 percent of them were unemployed.

The income distribution shows that about 55.1 percent of the respondents have monthly income level less than GH¢51, while 7.3 percent have monthly income of GH¢501 and above. The low level of income of the respondents may be due the fact that about a quarter of the respondents were not employed, while most of the employed are engaged in subsistence farming. Since herbal medicine is more affordable, it means that people with low income would find it more accessible and patronize it.

Characteristic of most deprived districts in Ghana, a significant proportion of the population of Wassa Amenfi West District reside in rural areas. About 76.1 percent of the residents interviewed resided in rural areas, whereas 23.9 percent of them lived in urban areas which have population of

5000 people and above, as well as other urban characteristics such as health facility, electricity, telephone and postal services, and pipe-borne water. This means that patronage of herbal medicine would be high, since herbal medicine is readily available and easily accessible in the rural areas.

Similarly, 8 out of the 10 orthodox healthcare professionals interviewed were females, while 2 were males. However, 13 out of the 15 herbal practitioners interviewed were males, with only 2 being females. There are more female orthodox healthcare professionals because most females are interested in the orthodox health care profession like nursing, medical assistant and midwifery than the traditional health care practice. Also, more of the female orthodox practitioners were more willing to be interviewed than the male counterparts.

Four of the orthodox healthcare professionals interviewed were within the age group of 31-40 years and, with one above 50 years. Also, 6 of the herbal practitioners interviewed were above 50 years, with 1 person falling within 18-30 years. This implies that herbal practice is not much attractive to young adults but rather the older generation, while the orthodox health profession looked attractive for the youth.

Whereas all the 10 orthodox healthcare professionals interviewed have tertiary education, only 1 herbal practitioner has attained senior high or vocational education, 2 have no formal education, another 2 have attained tertiary education, 3 have primary education, and 7 have junior high or middle school education. Orthodox healthcare professionals acquire the skill through formal education and training and this explains why most of them are formally educated.

4.3 Extent of patronage of herbal medicine

4.3.1 Use of herbal medicine

The study revealed that herbal medicine is highly patronized in the Wassa Amenfi West District. Table 4.2 shows, for example, that when respondents were asked which health care system they used the last time they were sick, 50.2 percent said they used herbal medicine, while 49.3 percent used orthodox medicine.

But when asked which health care system they usually use when they are sick, 50.7% of the respondents pointed at herbal medicine and 48.7% pointed at orthodox medicine.

Table 4.2 Usage of herbal medicine

Which health care system did you seek the last time you were sick?	Frequency	Percentage (%)
Herbal Medicine	103	50.2
Orthodox Medicine	101	49.3
Spiritual Healing	1	0.5
Total	205	100

Source: Field data, 2011

For most users, herbal medicine is the first line of resort when sick. As shown in Table 4.3, about 49.7 percent of the users interviewed used herbal medicine as first line of resort for sickness, 24.9 percent used it as alternative to orthodox medicine, and 21 percent used it as complementary to orthodox medicine.

Table 4.3 Pattern of use of herbal medicine

How do you use herbal medicine?	Frequency	Percentage (%)
First Choice	102	49.7
Alternative	51	24.9
Complementary	43	21
Other	9	4.4
Total	205	100

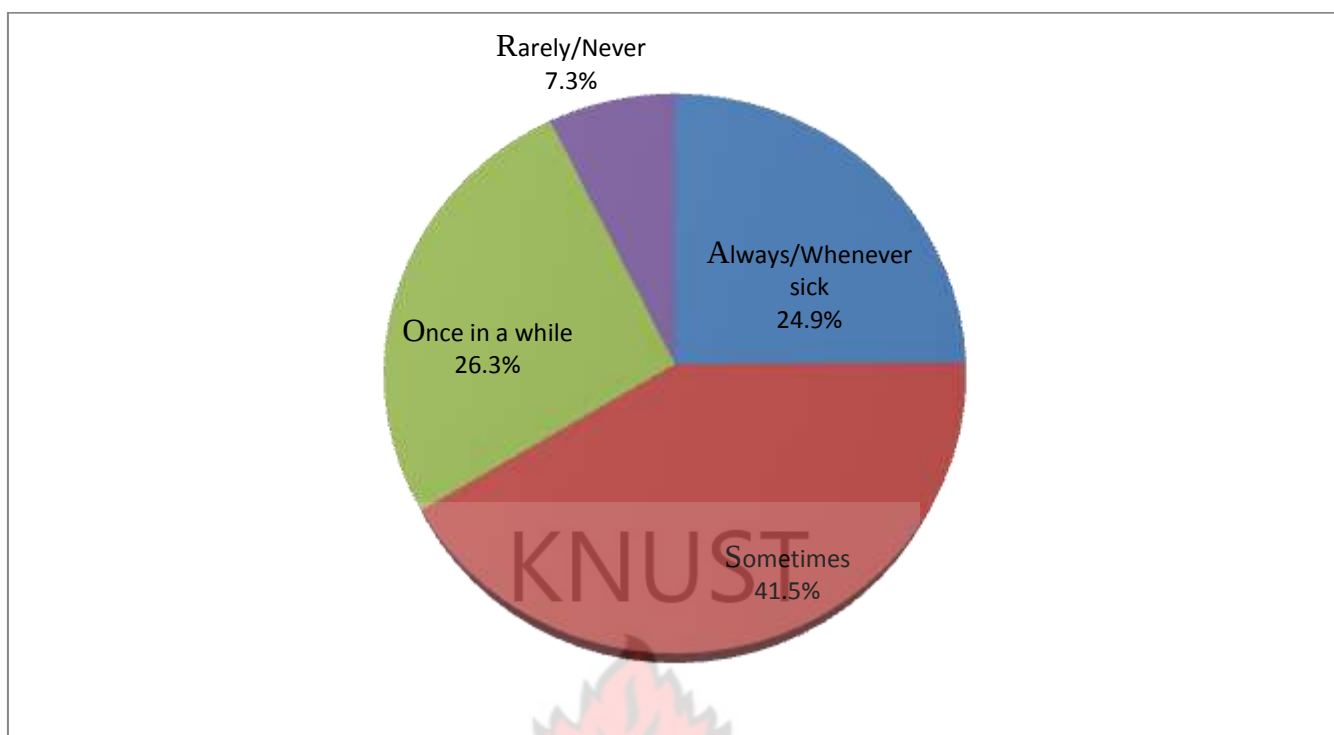
Source: Field data, 2011

Also, from Figure 4.1, 24.9 percent of the users interviewed use herbal medicine ‘always or whenever’ they fall sick, 41.5 percent use it ‘sometimes’ but not always, 26.3 percent use it ‘once in a while’ and only 7.3 percent ‘rarely or never’ use herbal medicine. In addition, 9 out of the 10 orthodox health care professionals interviewed used herbal medicine ‘once in a while’, with only 1 using it ‘sometimes’ with none them claiming they have ‘never’ used herbal medicine. This is indeed a clear evidence of the high patronage of herbal medicine, even among orthodox health care professionals (doctors).

This pattern of use of herbal medicine was supported by the responses from the focus group discussions. In general, most of them stated that herbal medicine was very much in use in the study area. For example, a male farmer from the rural focus group stated that:

“I always use herbal medicine because most of the time, you can easily get it without the need to walk that long distance to the (Manso Amenfi) clinic” (Male, Manso Amenfi, 2011).

Figure 4.1 Frequency of use of herbal medicine for residents of research communities



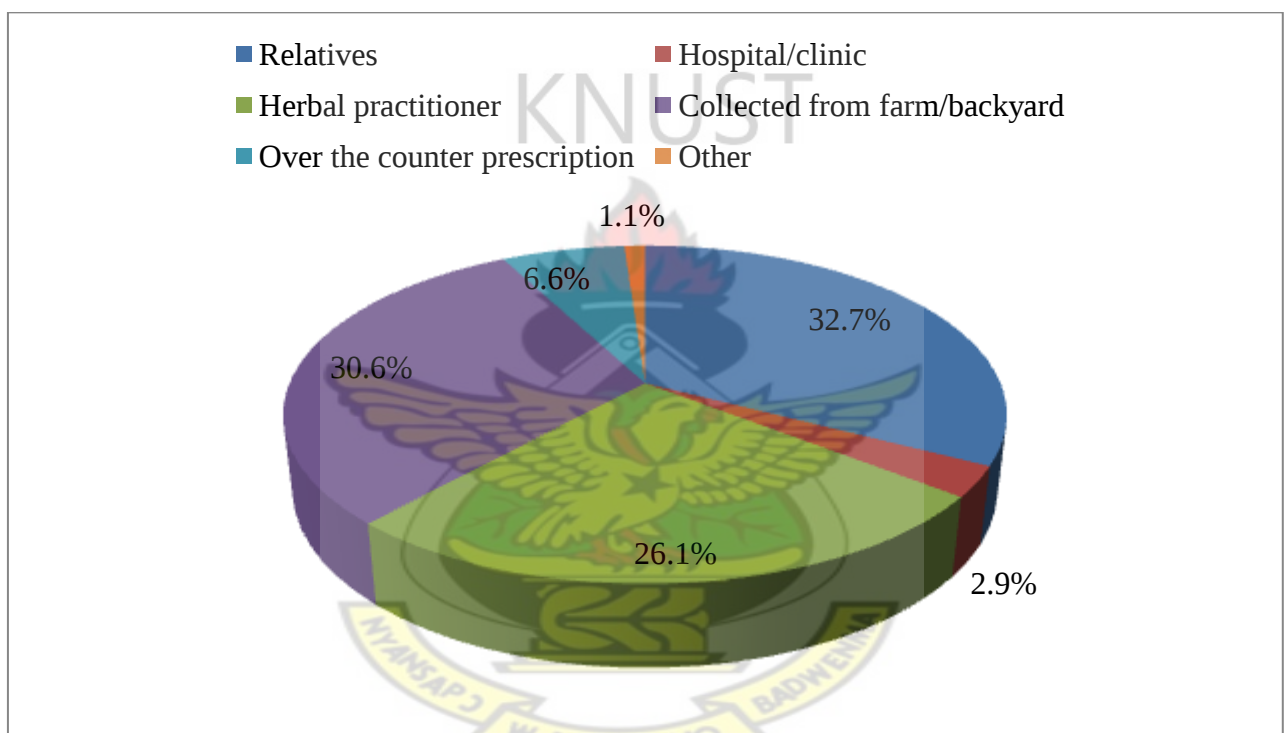
Source: Field Data, 2011

In all, 92.7 percent of the users interviewed have used herbal medicine at least once in their lifetime, while only 3.9 percent have never used herbal medicine, but 3.4 percent could not tell whether or not they have ever used it. Complementing the high patronage of herbal medicine in the district is the fact that all the 10 orthodox health care professionals interviewed in the study have also used herbal medicine at one point or another in their life. Also, 12 out of the 15 herbal practitioners interviewed confirmed that between 6 and 10 people, on the average, patronised their services every day. This shows the high level of usage of herbal medicine.

4.3.2 Sources of herbal medicine

Herbal medicines have mostly been obtained from various sources including but not restricted to relatives, hospitals or clinics, herbal practitioners, farm or backyard, and pharmacy or drug stores. From Figure 4.2 it could be seen that while about 32.7 percent of users obtained herbal medicine from relatives, about 30.6 percent obtained it from the farm or backyard. This signifies that most users have much knowledge about herbal medicine and its use.

Figure 4.2 Sources of herbal medicine



Source: Field Data, 2011

Also, 26.1 percent of the users obtained their herbal medicines from herbal practitioners and this shows the huge role herbal practitioners play in the herbal practice. In addition, about 6.6 percent of the users interviewed obtained herbal medicine from pharmacy shops or drug stores and only 2.9 percent of the users obtained them from the hospital or clinic. Thus, this signifies a situation where the two systems co-exist, but are poorly integrated.

4.4 Perception of the efficacy of herbal medicine

4.4.1 Efficacy of herbal medicine

The major factor contributing to the increasing popularity of herbs in developed countries and their sustained use in developing countries is the belief that they are efficacious, and in some cases more so than allopathic medicines. This favourable level of perceived efficacy support their continued use, and in a significant number of patients, concomitant use with orthodox or allopathic medicines (Clement et al. (2007). In the Wassa Amenfi West District, herbal medicine is perceived to be effective in the treatment and cure of diseases. Table 4.4 shows that 95.6 percent of users interviewed perceive herbal medicine to be effective in the treatment of diseases.

Table 4.4 Efficacy of herbal medicine

Do you think herbal medicine is effective in the treatment of diseases/illness?	Frequency	Percentage (%)
Yes	196	95.6
No	9	4.4
Total	205	100

Source: Field Data, 2011

This is augmented by the fact that 9 out of the 10 orthodox health care professionals interviewed believe that herbal medicine is effective in the treatment of illness. Also, 13 out of the 15 herbal practitioners perceive their medicines to be ‘very potent’ while only 2 perceive it to be ‘potent.’

Madam Afua Badu, a trader from the women focus group narrated how her mother’s condition was deteriorating with stroke after two years of seeking hospital care. But after only two months of herbal treatment she got back to her feet.

Compared to orthodox medicine, herbal medicine is perceived to be more effective than orthodox medicine in the Wassa Amenfi West District. Whiles 63.9 percent of the people believe that

herbal medicine is more effective than orthodox medicine, 36.1 percent of them perceive orthodox medicine to be more effective than herbal medicine.

A 52 year old male teacher from the formally educated focus group stated that:

“Herbal medicine is more effective than orthodox medicine in some cases, because there are some diseases like hernia and bone fracture which herbal medicine treats effectively without the knife (surgery), but if you take these same illness to the hospital you are bound to have operation which sometimes leads to other problems or even death. Many people fear to have the surgery and so we rely on our own tried and tested and proven herbs for treatment” (Male, Manso Amenfi, 2011).

A cocoa purchasing clerk from the rural focus group further explained that:

“Herbal medicine is more effective than orthodox medicine because when you visit the hospital with complex bone fracture, they might call for the removal (amputation) of your leg or arm. But with the same problem, herbs can be effectively applied to those parts and most often tied. Given some few weeks, the bones will form again without any need for removal.”

4.4.2 Common medical conditions treated with herbal medicine

Several diseases or ailments may be treated effectively with the roots, bark, leaves, fruits and flowers of plants. The study revealed that common medical conditions under which herbal medicines are used include malaria, typhoid, jaundice, fever, infertility, sexual weakness, impotency, sexually transmitted diseases, diabetes, and epilepsy. Others include piles, waist pains, menstrual pains, hernia, stroke, hypertension, tuberculosis, asthma, mental illness, arthritis, bone fracture, snake and dog bite, cutlass wound, boils and other chronic skin infections.

Table 4.5 Common medical conditions treated with herbal medicine

Cohort	Frequency	Percentage
Malaria/Fever/Typhoid/Jaundice	34	16.6
Sexually transmitted infections	10	5
Chronic skin infections	27	13.4
Infertility/ Sexual weakness, etc.	35	17.2
Epilepsy/mental illness	18	8.9
Piles/Waist pains	39	18.8
Bone fracture/Arthritis	12	5.9
Stroke/ Hypertension	12	5.7
TB/Asthma	6	2.7
Snake and dog bite/Cutlass wound	2	0.8
Diabetes	4	2.1
Other	6	2.9
Total	205	100

Source: Field Data, 2011

According to Table 4.5, piles and waist pains accounted for about 18.8 percent of diseases that can be treated effectively with herbal medicine, infertility, sexual weakness, hernia, and menstrual pains accounted for 17.2 percent, malaria, fever, typhoid and jaundice accounted for 16.6 percent, boils and chronic skin infections accounted for 13.4 percent, and epilepsy and mental illness accounted for 8.9 percent.

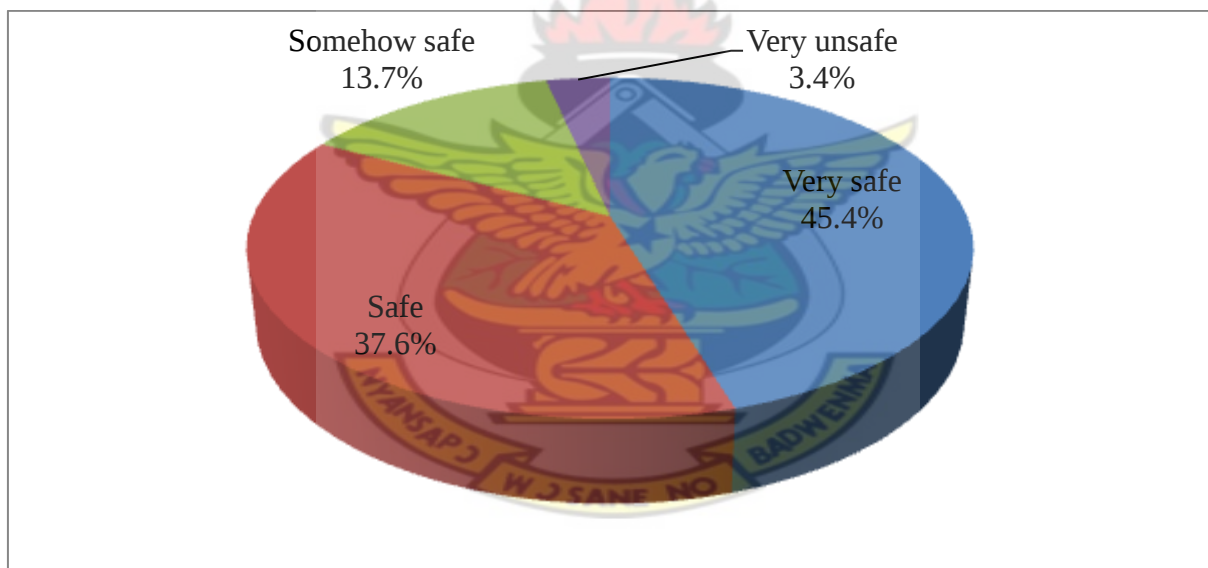
Although most herbal practitioners in the Wassa Amenfi West District specialise in the diagnosis and treatment of diseases, some may be able to treat almost all the diseases. In all, about 13.4 percent of the interviewed herbal practitioners treat infertility and sexual weakness, 11.6 percent

treat malaria, fever, typhoid and jaundice, 10.7 percent treat piles and waist pains, another 10.7 percent treat boils and chronic skin infections, and 9.8 percent treat sexually transmitted diseases.

4.4.3 Perception about the safety of herbal medicine

The study revealed that in the Wassa Amenfi West District, herbal medicine is considered safe and has little side effects on people. Figure 4.3 indicates that about 45.4 percent of the users rated herbal medicine to be “very safe” for human use, 37.6 percent of them described it as “safe”, 13.7 percent of them described it as “somehow safe” and only 3.4 percent describe herbal medicine as “unsafe.

Figure 4.3 Users’ perception of the safety of herbal medicine



Source: Field Data, 2011

Also, most of the people in the study area were in disagreement with the statement that ‘herbal medicine is dangerous to human health.’ As much as 55.6 percent of the respondents in the survey strongly disagreed with the statement while 17.1 percent disagreed with it. Among the reasons cited for this was that herbal medicine is natural (56.7%) and therefore has no side effects, 30 percent said they have not experienced any side effects with the use of herbal medicine and nearly

14 percent were rather of the view that those who depended solely on herbal medicine live longer than their counterparts who depend on orthodox medicine. This is shown in Table 4.6.

A farmer in the men focus group opined that:

“I do not think this assertion is true at all. Our forefathers depended exclusively on herbal medicine which is made by God (natural) and they lived longer than the current generation, who mostly rely on orthodox medicine. The orthodox medicines are refined and contain dangerous chemicals which may in the long run be harmful to our health” (Male, Manso Amenfi, 2011).

Table 4.6 Reasons for disagreeing that herbal medicine is harmful

Why do you disagree with the statement that herbal medicine is dangerous to human health?	Frequency	Percentage (%)
It is natural	85	56.7
Promotes longer life	45	13.3
I have experienced no side effects so far	20	30
Total	150	100

Source: Field Data, 2011

Asked whether they have ever experienced any adverse side effects from their use of herbal and orthodox medicines, Table 4.7 shows that only 8.8 percent of the respondents have experienced adverse side effects with the use herbal medicine, whilst 91.2 percent of them have never experienced adverse side effects.

Table 4.7 Side effects of herbal medicine

Have you ever experienced any adverse side effect with the use of herbal medicine	Frequency	Percentage (%)
Yes	18	8.8
No	187	91.2
Total	205	100

Source: Field Data, 2011

4.5 Background Characteristics and reasons for use of herbal medicine

4.5.1 Effect of background characteristics on usage of herbal medicine

A Chi square analysis of the association between the use of herbal medicine and the socio-demographic characteristics of users was done at a significance level of 0.05.

The results of the Chi-square, as shown in Table 4.8, reveals that age ($P=0.003$), level of education ($P=0.000$), and place of residence ($P=0.040$) were background factors associated with the use of herbal medicine.

With respect to sex, women are more likely to rely on herbal medicines than men. Women are less likely than men to consult modern health services, less willing to wait longer than men to seek treatment when ill, less reluctant to spend limited resources on their own needs, and often cope with illness by self-treatment or consulting traditional healers (Buor, 1993; Rathgeber and Vlassoff, 1993; Fosu, 1981).

The survey demonstrates that females (33.2%) are more likely to use herbal medicine than males (17.6%). This is complemented by the fact that 10 out of the 15 herbal practitioners interviewed claimed that females were the most patrons of their services. But, although more females use herbal medicine than males, this relationship is not statistically significant because the Chi-square value ($P=0.278$) is greater than the significance level of 0.05 used for this research. This confirms the null hypothesis (H_0) that there is no significant relationship between sex and the use of herbal medicine. This result however differs from the findings of Fosu (1981) and Rathgeber and Vlassoff (1993) who found a significant relationship between sex and the use of herbal medicine.

With regards to age, about 17.6 percent within the ages of 41-50years, 14.6 percent of the respondents within the ages of 31-40years, 10.2 percent within the ages of 18-30, and 8.3 percent within the ages of 51years and above regularly utilize herbal medicine. This signifies that respondents within the ages of 31-40years are more likely to use herbal medicine and this is

statistically significant because the chi-square value ($P=0.003$) is well below the 0.05 significance level used for this research. The results also show that the married (29.8%) are more likely to use herbal medicine and this is not statistically significant at a chi-square value of 0.063.

Another important determinant of the use of herbal medicine is the level of education (Falconer et al., 1992). According to Buor (1993) and Mensah (2008), there is a strong inverse relationship between educational attainment and the use of herbal medicine. Buor (1993), for instance, states that people with little or no formal education patronise traditional herbal medicine more than those with higher education. The results of the survey show that there is a significant relationship between educational level and the use of herbal medicine with 18 percent of the respondents with JHS or middle school education using herbal medicine, followed by people with no formal education (17.1%), primary school graduates (6.8%), SHS or vocational school graduates (5.9%), and people with tertiary education (2.9%). This relationship is statistically significant because the chi-square value ($P=0.000$) is less than the 0.05. Therefore, the null hypothesis (H_0) that there is no significant relationship between educational level and use of herbal medicine is rejected in favour of the alternative hypothesis (H_1) that there is a significant relationship between level of education and use of herbal medicine. In addition, about 13 out of the 15 herbal practitioners involved in the study said that the informally educated are the most patrons of their services.

Herbal medicine is often used in the rural areas than the urban areas (Buor, 1993; Brown, 1992). Generally, herbal practitioners in the rural areas are consulted at the early stages of diseases and for more acute complaints, often before a biomedical practitioner (Brown, 1992). This is because rural residents have little or no access to orthodox medicine and find herbal medicine to be relatively less expensive (Buor, 1993; Brown, 1992).

Table 4.8 Effect of background characteristics on the use of herbal medicine

Background characteristics	Type of medical care usually sought when sick				p. value
	Herbal (N=104)	Orthodox (N=100)	Spiritual healing(=1)	Total	
	n (%)	n (%)	n (%)	%	
Sex					
Male	36(17.6)	30(14.6)	1(.5)	32.7	0.278
Female	68(33.2)	70(34.1)	0(.0)	67.3	
Age					
18-30	21(10.2)	37(18.0)	0(.0)	28.3	0.003
31-40	30(14.6)	39(19.0)	0(.0)	33.7	
41-50	36(17.7)	15(7.5)	1(.5)	25.4	
51 and above	17(8.3)	9(4.4)	0(.0)	12.7	
Marital status					
Single	21(10.2)	35(17.1)	0(0)	27.3	0.063
Married	61(29.8)	57(27.8)	1(.5)	58.0	
Divorced	16(7.8)	4(2.0)	0(0)	9.8	
Widowed	6(2.9)	4(2.0)	0(0)	4.9	
Religious affiliation					
Christian	73(35.6)	81(39.5)	1(.5)	75.6	0.594
Islamic	25(12.2)	14(6.8)	0(0)	19.0	
Traditional	5(2.4)	3(1.5)	0(0)	3.9	
Other	1 (.5)	2(1.0)	0(0)	1.5	
Educational level					
No formal education	35(17.1)	12(5.9)	0(0)	22.9	0.000
Primary	14(6.8)	12(5.9)	0(0)	12.7	
Junior secondary	37(18.0)	32(15.6)	0(0)	33.7	
Senior Secondary	12(5.9)	29(14.1)	0(0)	20.0	
Tertiary	6(2.9)	15(7.3)	1(.5)	10.7	
Employment status					
Employed	75(36.6)	70(34.1)	1(.5)	71.2	0.772
Unemployed	27(14.1)	30(14.6)	0(0)	28.8	
Average Income					
Below GH¢51	60(29.3)	52(25.4)	1(.5)	55.1	0.684
GH¢51 - GH¢100	16(7.8)	17(8.3)	0(0)	16.1	
GH¢101 - GH¢200	14(6.8)	12(5.9)	0(0)	12.7	
GH¢201 - GH¢500	5(2.4)	13(6.3)	0(0)	8.8	
GH¢501 and above	9(4.4)	6(2.9)	0(0)	7.3	
Place of residence					
Urban	19(9.3)	29(14.1)	1(.5)	23.9	0.040
Rural	85(41.5)	71(34.6)	0(0)	76.1	

Source: Field Data, 2011. Bold indicates that chi-square test is statistically significant at p=0.05 level.

The study revealed that rural dwellers (41.5%) are more likely to utilise herbal medicine than their urban counterparts (9.3%). There is a significant relationship between place of residence and the

use of herbal medicine because the chi-square value ($P=0.04$) is less than the significant level of 0.05. Therefore, the null hypothesis (H_0) that there is no significant relationship between place of residence and use of herbal medicine is rejected in favour of the alternative hypothesis (H_1) that there is significant relationship between place of residence and the use of herbal medicine.

People of low economic or financial status tend to use herbal medicine more than those of high economic or financial status (Mensah, 2008). The survey revealed that people with monthly income levels below GH¢51 (29.3%) tend to make more use of herbal, but this is not statistically significant since the chi-square value ($P=0.684$) is greater than the significance level of 0.05. Consequently, this fails to reject the null hypothesis (H_0) that there is no significant relationship between income level and use of herbal medicine. Moreover, Christians (35.6%) and the employed (36.6%) often tend to use herbal medicine. This notwithstanding, these results are, however, not statistically significant.

4.5.2 Reasons for use of herbal medicine

Several factors account for the use of herbal medicine and these vary from country to country (Shaikh and Hatcher, 2005).

Table 4.9 Reasons for use of herbal medicine

Reason	Frequency	Percentage (%)
Easily accessible	47	22.8
Less costly	51	25
More effective	90	44
In line with tradition	11	5.4
Other	6	2.7
Total	205	100

Source: Field Data, 2011

According to Table 4.9, about 44 percent of the people use herbal medicine because of its efficacy, 25 percent use it because it is less costly or affordable, 22.8% use it because it is easily accessible, 2.7 percent, and 5.4 percent use it because it is in line with their tradition.

Affordability is one of the reasons for the use of herbal medicine. Residents of Wassa Amenfi West District find herbal medicine to be more affordable than orthodox medicine. About 79.5 percent of users interviewed find herbal medicine to be relatively cheaper compared to orthodox medicine.

A female teacher from the formally educated focus group had this to say:

‘... I think herbal medicines are cheaper. I am saying this because even the nicely packaged herbal medicines in the drug stores cost much less than the orthodox ones. You can’t tell me that herbal medicine meant for treating hypertension, stroke or even common malaria is more expensive than the orthodox ones meant for treating the same ailments. For instance, I pay GHC2.00 for only malaria injection ... Meanwhile ‘Malacure’ (herbal product for malaria treatment) cost GHC1.80 or better still I can boil some tea leaves and the bark of Neem tree and drink without paying for it’ (Female, Manso Amenfi, 2011).

Among the explanations given for the relative affordability of herbal medicine is free acquisition of herbs, relatively low cost of herbal products, payment by instalment, prescription according to one’s level of income and payment in kind.

Table 4.10 Reasons for the affordability of herbal medicine

Reasons for the affordability of herbal medicine	Frequency	Percentage (%)
Free acquisition	93	45.4
Relatively less costly	55	26.8
Payment by instalment	12	5.8
Prescription according to level of income	9	4.4
Payment in kind	34	16.6
Other	2	1
Total	205	100

Source: Field Data, 2011

As shown in Table 4.10, 45.4 percent of users in the survey cited the free acquisition of herbal medicine as the reason for its affordability, 26.8 percent cited the low cost of herbal products, 16.6 percent cited payment in kind, 5.8 percent mentioned payment by instalment, while 4.4 gave prescription according to the level of income as the reasons for the affordability of herbal medicine.

Generally, the formally educated group also noted that some herbal practitioners, for fear of losing the efficacy of their medicines, do not charge fees for their services, but rather accept gifts as token of appreciation from their clients after they have been successfully treated.

Moreover, the significant use of herbal medicine is often attributed to its availability and physical accessibility (WHO, 2002a). Only about 22.9 percent of the users perceive orthodox medicine to be more accessible than herbal medicine, while the larger majority, about 77.1 percent, perceive herbal medicine to be readily available and thus, more accessible than orthodox medicine.

Table 4.11 shows that, 46.3 percent of the users cited the closeness of herbal medicine to home as reason for its relatively easier accessibility, 42 percent cited the availability of herbal medicine in every community, and 16 percent cited the absence of a clinic or hospital, thus making herbal medicine the only source of health care.

The explanation of a female farmer from the rural focus group is summarized as:

“Herbal medicine is more accessible to me because, for instance, when all of sudden I am attacked by stomach ache I just look around my backyard for some Acheampong leaves (Chromolaena odorata), grind it and use it. If on the other hand I want to access orthodox medicine, I would have to walk from Menshia to Manso Amenfi Clinic which is very far (8 miles). You know our road is very bad, whether in the dry or rainy season” (Female, Manso Amenfi, 2011).

A seamstress from the women focus group also claimed:

“Herbal medicine is closer to me than orthodox medicine because the doctors and nurses are inadequate. Look at the situation when the same midwife stationed at Manso Amenfi also attend to people in the other villages. We mostly see her only once in a week. If there is any emergency or serious illness, you have to travel to Manso Amenfi clinic before you can see her. This is very bad”

(Female, Manso Amenfi, 2011).

Table 4.11 Reasons for easy access to herbal medicine

Reasons for easy access to herbal medicine	Frequency	Percentage (%)
Found in every community	86	42
Closeness to home	95	46.3
Absence of hospital/clinic	16	7.8
Other	8	3.9
Total	205	100

Source: Field Data, 2011

Some participants also pointed to the poor human relations of orthodox medical practitioners, the complex registration processes one has to go through before consulting a doctor, laboratory tests and the long procedures of getting medications as restrictions which make orthodox health care system less desirable and therefore less accessible. A trader from the women focus group shared this:

“Herbal medicine is more accessible because sometimes you will walk through pain and climb the clinic hill and there will be no nurse to attend to you. Sometimes they will insult you, as if you have committed a crime. When it happens like that you will not even feel like going there again” (Female, Manso Amenfi, 2011).

Other participants also cited the high rate of illiteracy in the district and local knowledge in herbal medicine as making it easier to access herbal medicine than orthodox medicine.

A female rural resident noted that:

“Most of us have not been to school and we cannot read the instructions (prescriptions) on the orthodox medicines. But herbal medicine is our own and we can use it well, whether we can read or not” (Female, Manso Amenfi, 2011).

In the Ghanaian society, especially in the rural areas, herbal medicine is more culturally acceptable than orthodox medicine (Mensah 2008; Davies, 1994). About 4.5 percent of the respondents perceive herbal medicine to be more culturally acceptable than orthodox medicine, whilst 15.1 percent perceive orthodox medicine to be more culturally acceptable than herbal medicine. The long usage of herbal medicine by forefathers, conformity to cultural beliefs, public

confidence or high patronage by communities, and the use of local or familial language by herbal practitioners were among the explanations given to the cultural acceptability of herbal medicine.

Also, all the orthodox health care professionals, in one way or the other, believed that herbal medicine is well accepted by the community. Whilst one of the orthodox healthcare professionals interviewed ‘strongly believe’ that herbal medicine is well accepted by the community, 4 of them ‘believe’ that it is well accepted, 5 ‘somehow believe’, and none of them do not believe at all. Reasons such as high public patronage, efficacy, affordability and long usage by forefathers were the ones given in support of these assertions. Additionally, 14 of the 15 herbal practitioners interviewed ‘strongly believe’ that herbal medicine is well accepted by the community, while only 1 believe it is well accepted by the community. Again, high public patronage of herbal medicine, its efficacy, long usage by forefathers as well as it being part of the culture of the people were reasons cited by the herbal practitioners for their belief in herbal medicine.

Madam Ataa, a farmer from the women group emphasized that herbal medicine has been used from generation to generation and that society cannot do without it.

A farmer from the men focus group also stated:

“I was born into herbal medicine. This is what has really entered my body and I am used to it. This is because we the people in the rural areas were trained with herbal medicine and so it has become part of our lives” (Male, Manso Amenfi, 2011).

CHAPTER FIVE

5.0 INTEGRATION OF TRADITIONAL AND ORTHODOX MEDICINE

5.1 Introduction

The foregoing analysis so far shows that herbal medicine is hugely patronised in the Wassa Amenfi West district and is mostly used as first choice treatment for ailments. It also demonstrates that users of herbal medicine in the district perceive herbal medicine to be effective and safe for the treatment of various ailments such as sexual weakness, infertility, malaria, piles and waist pains. The study so far also points to the fact that there is a significant relationship between the usage of herbal medicine and age, marital status, level of education and place of residence.

This chapter examines the level of interaction between herbal and orthodox medical practitioners and the possibility of integrating the two systems of healthcare.

5.2 Interactions between herbal practitioners and orthodox medical practitioners

The safety and effectiveness of a country's health care delivery system depends largely on the nature of interactions between the practitioners of the different healthcare systems existing in that country. This is largely determined by the referrals of patients or clients from one healthcare system to another by their various practitioners. According to Table 5.1, only 6.3 percent of the households admitted that they have, at one point or the other, been referred by a biomedical doctor to a herbal practitioner, whilst the greater majority, 93.7 percent, have never experienced referrals from a biomedical doctor to a herbal practitioner. This shows the low the level of integration between the two systems.

Table 5.1 Referral cases to herbal practitioners

Have you ever been referred to a herbal practitioner?	Frequency	Percentage (%)
Yes	13	6.3
No	192	93.7
Total	205	100

Source: Field Data, 2011

Table 5.2 Referral cases to orthodox practitioners

Have you ever been referred to a orthodox practitioner?	Frequency	Percentage (%)
Yes	28	13.7
No	177	86.3
Total	205	100

Source: Field Data, 2011

Comparatively, whereas just a mere 13.7 percent of the respondents admitted ever being referred by a herbal practitioner to a biomedical doctor, a whopping 86.3 percent of them have never been referred by a herbal practitioner to a biomedical doctor. This is shown in table 5.2.

In addition, only 6.7 percent of the herbal practitioners interviewed admitted that patients have been referred from the hospital or a biomedical doctor to their outfit, whereas 93.3 percent of them revealed that patients have never been referred from the hospital or biomedical doctor to them. On the other hand, 40 percent of the orthodox health care professionals interviewed admitted that patients have been referred from herbal practitioners to their outfits, while 60 percent of them declined having attended to patients referred from herbal practitioners. This shows the low level of integration between traditional and orthodox health practitioners.

On the actions taken when their prescriptions are ineffective, 53.3 percent of the herbal practitioners claimed they attempt other herbal medicines, 26.7 percent advise their patients to visit the hospital or clinic, 6.7 percent refer them to other herbal practitioners, and 13.3 percent claimed they do not take any other action in such situations.

A major challenge limiting interactions between traditional and orthodox medical practitioners is the secrecy involved in the transmission of knowledge from herbal practitioners to orthodox healthcare professionals. Foote (1999) argues that the suspicious attitudes of some traditional practitioners to the orthodox medical system contribute to the lack of cooperation between the former and the latter. The study shows, in Table 5.3, that the medicinal preparations of about 33.3 percent of the herbal practitioners interviewed involve some secrecy, while that of the remaining 66.7 percent do not involve any secrecy and therefore have nothing to hide from the public.

Table 5.3 Secrecy in herbal preparations

Do your preparations involve any secrecy?	Frequency	Percentage (%)
Yes	5	33.3
No	10	66.7
Total	15	100

Source: Field Data, 2011

However, most of the herbal practitioners involved in the study are not willing to disclose the contents of their preparations and products to either their colleague herbal practitioners or orthodox medical practitioners. It can be seen from Table 5.4 that whereas 8 out of the 15 herbal practitioners were ‘not willing’ to disclose the ingredients of their preparations to their fellow herbal practitioners, 3 were ‘very willing’, 2 were ‘willing,’ and another 2 were ‘somehow willing’ to disclose the ingredients of their herbal preparations to their fellow herbal practitioners. Among the reasons, 33.3 percent cited the fact that the contents of their medicine may be

revealed, 20 percent cited fear of medicine being pirated or stolen by colleagues and 13.3 percent cited fear of the medicine being rendered impotent or ineffective as reasons for their reluctance to disclose the ingredients of their herbal preparations to their fellow herbal practitioners. Of those who were willing to disclose contents of their medicine, 26.7 percent gave provision of an avenue to promote collaboration and the opportunity to learn from one another, and 6.7 percent gave the non-secret nature of some herbal preparations as the reasons for their willingness to disclose the contents of the herbal preparations and products.

Table 5.4 Willingness to disclose ingredients of preparations to other herbal practitioners

How willing are you to disclose the contents of your preparations to other herbal practitioners?	Frequency	Percentage (%)
Very Willing	3	20
Willing	1	6.7
Somehow Willing	3	20
Not Willing	8	53.3
Total	15	100

Source: Field Data, 2011

Similarly, Table 5.5 shows that 9 of the herbal practitioners interviewed were ‘not willing’ to reveal the ingredients of their herbal preparations to orthodox medical practitioners, while 3 and 2 respectively were ‘very willing and ‘somehow willing’. Again, 40 percent of practitioners cited fear of their medicine being rendered impotent or ineffective, 13.3 percent also cited fear of the medicine being pirated or stolen by orthodox medical practitioners, and another 13.3 percent cited the fact that orthodox healthcare professionals do not believe in herbal practice as the reasons for their reluctance to disclose the contents of their preparations to orthodox medical practitioners. On the other hand, 33.4 percent of the herbal practitioners gave the provision of an avenue to promote

collaboration and the opportunity to learn from one another as the only reason cited for the willingness to disclose the ingredients of their herbal preparations to orthodox medical practitioner. This means that herbal medicine is poorly integrated into orthodox health care system, though they co-exist.

Table 5.5 Willingness to disclose ingredients of preparations to orthodox practitioners

How willing are you to disclose the contents of your preparations to orthodox practitioners?	Frequency	Percentage (%)
Very Willing	3	20
Willing	1	6.7
Somehow Willing	2	13.3
Not Willing	9	60
Total	15	100

Source: Field Data, 2011

5.3 Integration of traditional medicine into modern medicine

In the Wassa Amenfi West District, the integration of traditional medicine into modern or orthodox health care services is largely supported by residents, orthodox healthcare professionals, and herbal practitioners. Responses from the focus group discussions further buttressed this call.

“There is no need to leave one system behind because one hand alone cannot cover God’s face and one head does not make decisions. We need to pull each of them along so that what one system cannot solve, the other will or better still, the two practitioners will collaborate to remedy the situation. After all we always say that united we stand, divided we fall,” explained a carpenter in the men focus group (Herbal Practitioner, Achichire, 2011).

As shown in Table 5.6, about 81.5 percent of the users support the integration of traditional medicine into modern health care services, while 18.5 percent declined support for the integration.

Table 5.6 Integrating traditional medicine into modern medicine

Do you support the integration of traditional and orthodox health care systems?	Frequency	Percentage
Yes	167	81.5
No	38	18.5
Total	205	100

Source: Field Data, 2011

To complement this, about 7 of the orthodox healthcare professionals interviewed admitted support for the integration of traditional medicine into biomedical or orthodox healthcare, while only 3 of them declined support for such integration. Like the users and orthodox healthcare professionals, 93.3 percent of the herbal practitioners were in support of the integration of traditional medicine into modern medicine.

Significantly, the greater majority of the users of traditional medicine agreed that the integration of traditional medicine into modern health care system could help address most of the myriad problems confronting the modern health care system. Notable among the healthcare problems described by the users, 29.8 percent identified the long distance between health facilities and the home coupled with unmotorable roads leading to the hospitals and clinics, 19 percent identified long queues at the facilities, 18.2 percent identified the lack of and/or inadequate health care professionals, 16.2 percent identified health services as expensive, and 14.2 percent identified low health education.

From Table 5.7, it could be seen that about 76 percent of the users interviewed responded ‘Yes’ to whether or not the integration of traditional and orthodox medicine could help address the health problems in the district, while about 24 percent of them responded ‘No’ to it. Added to this, about

14 out of the 15 herbal practitioners interviewed opined that the integration of traditional medicine into orthodox medicine could be the antidote to the health problems encountered in the district.

A hairdresser from rural residents' focus group noted that:

“It will help improve accessibility to quality healthcare since we will no longer have to walk (travel) long distances to access healthcare.”

Table 5.7 Integration of traditional and orthodox medicine addressing health constraints

Do you think integration could help address health constraints in the district?	Frequency	Percentage (%)
Yes	155	76
No	49	24
Total	205	100

Source: Field Data, 2011

Even though the orthodox health care professionals interviewed supported the integration of traditional medicine into modern health care system, all of them (10) orthodox did not believe that the integration of traditional medicine into modern health care system could be the antidote to the health constraints in the district. This shows that there is low level of integration between the two healthcare systems, even though they coexist.

The survey also revealed that the integration of herbal medicine into modern medicine stands the chance of reaping several benefits.

Table 5.8 Respondents' views on benefits of integrating traditional and orthodox medicine

In what way could integration address health constraints in the district?	Frequency	Percentage (%)
Increase healthcare providers	53	26
Complement orthodox health care delivery	12	6
Promote affordable healthcare	27	13
Improve access to healthcare	64	31
Reduce waiting times at the hospital/clinic	19	9.3
Provide viable alternative to orthodox healthcare	30	14.7
Total	205	100

Source: Field Data, 2011

Among the benefits which could help address the health constraints in the district, as shown in Table 5.8, included the belief that it will improve accessibility to healthcare (31%), increase healthcare providers in the district (26%), provide viable alternatives to orthodox medicine (14.7%), promote affordable health care in the district (13%), help reduce waiting times at the hospitals and clinics (9.3%), and provide complementary treatments to health problems (6%).

A female teacher from the formally educated focus group noted that:

“Integration of traditional and orthodox healthcare systems would not be bad at all because similar to the medical profession, there are now graduate studies in herbal medicine in certain universities. Should we allow such talents and training to go waste? If not, then where do we place them? The integration would even allow more people to get interested in herbal profession and it is all for the good of this country.”

A trader from the women focus group also had this to say:

“I think the integration could be quite helpful. The reason is that where the medical doctor cannot treat an ailment, it could be transferred (referred) to the herbal practitioner. In the same way, situations beyond the control of the herbal practitioner could be transferred (referred) to the medical doctor. This is what we want for our people so that we will not join long queues at the hospital” (Female, Manso Amenfi, 2011).

5.4 How to achieve integration between traditional and orthodox medicine

On the specific ways in which integration of traditional and orthodox medicine could be achieved, Table 5.9 depicts that 24.2 percent of the users interviewed in the survey proposed the promotion of cross referral of patients, 20.4 percent recommended the registration and provision of licenses to herbal practitioners, 18.9 percent recommended the training of herbal practitioners in modern healthcare practices, 18.8 percent proposed clinical testing of the efficacy and safety of herbal medicines before use, and 17 percent proposed the documentation of herbal medicines and their uses.

Table 5.9 Respondents' views about ways of achieving integration between traditional and orthodox medicine

Specific ways of achieving integration	Residents		Orthodox Professionals		Herbal Practitioners	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Cross Referrals	50	24.2	2	20	6	40
Registration and Provision of License	42	20.4	3	30	3	20
Documentation	35	17	0	0	0	0
Training	39	18.9	2	20	3	20
Clinical Testing	38	18.8	3	30	3	20
Others	1	0.7	0	0	0	0
Total	205	100	10	100	15	100

Source: Field Data, 2011

Again, 6 of the herbal practitioners interviewed recommended cross referral of cases, 3 recommended the training of herbal practitioners in modern healthcare practices, and another 3 recommended the clinical testing of the efficacy and safety of herbal medicines before use as specific ways by which integration could be achieved. In addition, 3 of the herbal practitioners recommended the registration and provision of license to herbal practitioners. However, in both cases none of the orthodox health care professional and herbal practitioners recommended the documentation of herbal medicines and their uses.

A female chemical seller from the women focus group recommended that:

“The manufacturers of orthodox medicine should meet regularly with herbal practitioners to share experiences and conduct research into those herbal medicines that have proven to be effective” (Female, Manso Amenfi, 2011).

A 52 year old male teacher from the formally educated group also had this to say:

“Herbal practitioners should be properly trained, registered and licensed to operate. The fake ones found amongst them must be sanctioned and further prosecuted to serve as deterrent to others” (Male, Manso Amenfi, 2011).

Moreover, several recommendations were made for the improvement of the practice of herbal medicine. Whereas about 32.1 percent of the respondents in the survey recommended scientific research into herbal medicines for the improvement of the practice, 29.8 percent recommended the provision of license to herbal practitioners, 24.7 percent recommended the clinical testing of herbal medicine before use, and 12.8 percent recommended the sustainable utilisation of herbal medicine for the improvement of the practice.

In complement of these recommendations, about 25.7 percent each of the 10 orthodox medical practitioners interviewed recommended scientific research into herbal medicines, provision of license to herbal practitioners, and the clinical testing of herbal medicines before use, respectively, while the remaining 22.9 percent recommended the sustainable utilization of herbal medicine for the improvement of the practice.

Also, about 27.8 percent each of the 15 herbal practitioners interviewed recommended scientific research into herbal medicines and the clinical testing of herbal medicines for the improvement of the practice, respectively, 25.9 percent recommended the provision of license to herbal practitioners, 16.7% recommend the sustainable utilisation of herbal medicine for the improvement of their practice.

As presented in Table 5.10, about 97.1 percent of the residents interviewed recommended the training of herbal practitioners for the improvement of their practices, whilst 2.1 percent were against such training.

A trader from the women focus group said:

“The government should come to the aid of herbal practitioners by organizing training courses and evening schools for them that the way they render their services could be improved.”

In addition, all the 10 orthodox health care professionals and 15 herbal practitioners interviewed in the study recommended the training of herbal practitioners for the improvement of their practices.

Table 5.10 Training of herbal practitioners

Do you support the training of herbal practitioners	Residents		Orthodox Professionals		Herbal Practitioners	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Yes	199	97.1	10	100	15	100
No	6	2.9	0	0	0	0
Total	205	100	10	100	15	100

Source: Field Data, 2011

When asked what areas are important in the training of herbal practitioners, about 32.2 percent of the users advocated for training in hygienic preparation and administration of herbal medicines,

27.3 percent advocated for training in dosage and side effects of herbal medicines, 21 percent advocated for training in the branding and packaging of herbal medicines, 12.7 percent recommended training on the revelation of indigenous knowledge, and 6.8 percent recommended training on how to sustainably utilise medicinal plants and this is shown in Table 5.11.

Quite similar, 25 percent of the orthodox healthcare professionals interviewed also advocated for the training of herbal practitioners in dosage and side effects of their medicines, 22.5 percent advocated for the hygienic preparation and administration, 20 percent advocated for training in branding and packaging, 20 percent advocated for training on the sustainable utilisation of medicinal plants, and 12.5 percent advocated for training on how to reveal indigenous knowledge.

Table 5.11 Important areas in the training of herbal practitioners

What area do you think is important in the training of herbal practitioners?	Frequency	Percentage (%)
Dosage and side effects	56	27.3
Branding and packaging	43	21.0
Hygienic preparation and administration	66	32.2
Revelation of indigenous knowledge	26	12.7
Sustainable utilization of medicinal plants	14	6.8
Total	205	100

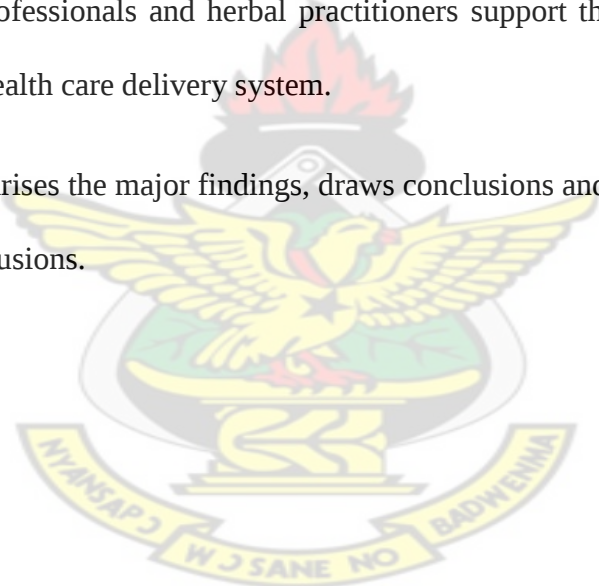
Source: Field Data, 2011

Additionally, 29.4 percent of the herbal practitioners interviewed in the study recommended training in the hygienic preparation and administration of their medicines, 27.5 percent recommended training in dosage and side effects, 17.6 percent recommended training in the revelation of indigenous knowledge, 15.7 percent recommended training in branding and packaging their medicines, 7.8 percent recommended training in sustainable utilisation of

medicinal plants and 2 percent advocated for training in other areas other than those already mentioned. These results show that there is the need for herbal practitioners to be trained to improve the delivery of their services, since users, orthodox health care professionals, and herbal practitioners all advocated for such trainings.

From the foregoing analysis in this chapter, it could be seen that the existing level of interactions between herbal practitioners and orthodox health care practitioners is not encouraging and most of the herbal practitioners were not willing to disclose the contents of their preparations and products to either their colleague practitioners or orthodox medical practitioners for fear of piracy and rendering the medicines impotent or ineffective. Despite these strained relationship, of the users, orthodox health care professionals and herbal practitioners support the integration of traditional medicine into modern health care delivery system.

The next chapter summarises the major findings, draws conclusions and gives recommendations on the basis of the conclusions.



CHAPTER SIX

6.0 SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

This chapter outlines the main findings of the research and draws conclusions based on these findings. It also gives recommendations on how best to enhance the potency of herbal medicine and give areas for future research.

6.2 Summary of Key Findings

6.2.1 Extent of patronage of herbal medicine

The study revealed that herbal medicine is hugely patronized in the Wassa Amenfi West District as over 92 percent of the respondents have used herbal medicine at least once in their lifetime. Also, all the orthodox health care professionals interviewed in the study have used herbal medicine at one point or another in their life.

Again, a little over half (50.7%) of the respondents usually use herbal medicine when they are sick and 50.2 percent used herbal medicine the last time they were sick.

Herbal medicine is mostly used as the first choice treatment of ailments for almost half (49.7%) of the respondents, while others use it as alternative (24.9%) and complementary (21%) to orthodox medicine.

Moreover, most users have easy access to herbal medicine with about 32.7 percent of users obtaining herbal medicine from relatives and about 30.6 percent obtaining it from the farm or backyard. The huge role herbal practitioners play in the herbal medicine practice is also shown by the study as 26.1 percent of the users obtained their herbal medicine from herbal practitioners.

However, only 2.9 percent of the users obtained herbal medicine from the hospital or clinic and this shows the low level of integration between modern and traditional medical systems.

6.2.2 Perception on the efficacy of herbal medicine

It was revealed in the study that 95.6 percent of users perceive herbal medicine to be effective in the treatment of disease or illness with 63.9 percent of users believing that herbal medicine is more effective than orthodox medicine, Also, 9 of the orthodox healthcare professionals believe in the efficacy of herbal medicine.

The study revealed that herbal medicine is effective in the treatment of such medical conditions as malaria, infertility, sexual weakness, sexually transmitted diseases, diabetes, epilepsy, piles, waist pains, menstrual pains, hernia, stroke, hypertension, tuberculosis, asthma, mental illness, arthritis, bone fracture, snake and dog bite, cutlass wound, boils and other chronic skin infections.

The study also indicated that most (45.4%) users in perceive herbal medicine to be “very safe” for human use with only a few (3.4%) describing it as “unsafe”.

Also, most (72.7%) of the people in the study area disagreed with the statement that herbal medicine is dangerous to human health arguing that it is natural, has no side effects, and that those who rely on it have relatively longer life than those who rely on orthodox medicine.

6.2.3 Background Characteristics and reasons for use of herbal medicine

The results of the study shows that age, level of education, and place of residence are associated with the use of herbal medicine using a chi square test of independence at a significance level of 0.05.

Respondents within the ages of 41-50 years are more likely to use herbal medicine and this is statistically significant because the chi-square value ($P=0.003$) is well below the 0.05 significance level. The survey also shows that people with little or no formal education are more likely to use herbal medicine than those with higher education and this relationship is statistically significant because the chi-square value ($P=0.00$) is less than the 0.05 set for the study.

Again, the study revealed that rural dwellers are more likely to utilize herbal medicine than their urban counterparts and this relationship is significant because the chi-square value ($P=0.40$) is less than the significant level of 0.05.

Though females, the married, people with lower income levels, Christians, and the employed are more likely to use herbal medicine, the study shows that the association between them and the use of herbal medicine are not statistically significant.

It was also established in the study that the efficacy (44%), affordability (25%), and accessibility (22.8%) of herbal medicine were the most important reasons given for the use of herbal medicine.

6.2.4 Integration of traditional and orthodox medicine

The study found that the existing level of interactions between herbal practitioners and orthodox health care practitioners is not encouraging. According to the study, most (93.7%) of the users claimed they have never been referred by a biomedical doctor to herbal practitioner and about 86.3 percent also said they have never been referred by a herbal practitioner to a biomedical doctor.

Moreover, most herbal practitioners are not willing to disclose the ingredients of their preparations and products to either their colleague practitioners or orthodox medical practitioners, whereas 8 out of the 10 herbal practitioners were unwilling to disclose the ingredients of their preparations to

their fellow herbal practitioners, 9 of them were unwilling to disclose it to orthodox medical practitioners.

Fear of piracy and the ability to render medicines impotent or ineffective were the reasons given by the herbal practitioners for their reluctance to disclose the ingredients of their preparations to fellow herbal practitioners and orthodox health care practitioners.

Significantly, 81.5 percent of the users support the integration of traditional medicine into the modern health care delivery system. Also, about 7 of the orthodox health care professionals admitted support for the integration of traditional medicine into orthodox health care. In addition, 14 of the herbal practitioners were in support of the integration of traditional medicine into modern medicine.

Among the benefits of the integration revealed by the study was the belief that it will improve accessibility to health care (31%), increase health care providers in the district (26%), provide viable alternatives to orthodox medicine (14.7%), and promote affordable health care in the district (13%).

Moreover, 24.2 percent of the users proposed the promotion of cross referral of patients, 20.4 percent recommended the registration and provision of licenses to herbal practitioners, 18.9 percent recommended the training of herbal practitioners in modern health care practices, 18.8 percent proposed clinical testing of the efficacy and safety of herbal medicines before use, and 17 percent proposed the documentation of herbal medicines and their uses as specific ways to achieve effective integration between traditional and orthodox practitioners.

However, 6 of the herbal practitioners recommended cross referral of cases, 3 recommended the training of herbal practitioners in modern health care practices, and another 3 recommended the

clinical testing of the efficacy and safety of herbal medicines before use as specific ways by which integration could be achieved.

About 97.1 percent of the users recommended the training of herbal practitioners for the improvement of their practices. In addition, all the 10 orthodox health care professionals and 15 herbal practitioners interviewed in the study recommended the training of herbal practitioners for the improvement of their practices.

The study also shows that areas such as the dosaging, branding and packaging, hygienic preparation and administration, revelation of indigenous knowledge, and the sustainable utilisation of medicinal plants the important areas advocated for in the training of herbal practitioners.

6.3 Conclusions

The survey has made it evidently clear that herbal medicine is highly patronized by the people of Wassa Amenfi West District and that most Ghanaians are developing more trust and interest in herbal medicine. The survey also demonstrates that users can maintain a parallel set of orientations and may be positively oriented to both herbal and orthodox medicine and both systems are not mutually exclusive. The patient will always embrace what each of them has to offer so far as its use brings the desired results.

Herbal medicine undoubtedly play a significant role in health care delivery by providing a readily available and accessible health care which is also equally, if not more, effective, as well as a more affordable health care for the rural people. Given the necessary direction and support, herbal medicine could therefore be an indispensable force in health care delivery, especially in the provision of an effective, readily available, less expensive, and therefore accessible health care to the rural folks, who constitute a greater proportion of Ghana's population.

Findings indicate that traditional and modern medicines will always be part of Ghanaian healthcare delivery because it is embedded in the social and cultural setup of the people and efforts should be made to fully integrate traditional medicine into the national health care delivery system. With the current rapid population growth of Ghana vis-a-vis current economic hardships and the high cost of providing health facilities and services, traditional herbal medicine would not only complement the government's efforts at providing affordable, accessible and effective health care for all, but also offer a viable means of supplementing government revenue.

All the objectives of the study were met and two of the null hypotheses rejected in favour of the alternative hypotheses.

6.4 Recommendations

It is clear from the foregoing analysis that for the benefits of herbal medicine to be fully reaped by achieving a 100 percent usage among Ghanaians, both herbal and orthodox trained practitioners must come together and fashion ways of enhancing the potency of herbal medicine. In this way, the government must make serious efforts at fully integrating traditional herbal medicine into modern health care delivery system if its goal of achieving 'health for all' is to be realized. Traditional medical practitioners must indeed be incorporated into orthodox medical practice as agents of change rather than antagonists who could hurt the health of the society they treat.

Significantly, an effective health care delivery system for Ghana must be one that inculcates and tolerates both orthodox and traditional practices. Standards measuring up to the beliefs, theories, and principles pertaining to each system must be systematically adhered to so as to produce the better of the two worlds. Orthodox health care must not be held high as the paramount or better of the two.

Both systems of health care must be encouraged to complement each other, instead of establishing a pecking order or hierarchy. It will be of much benefit if both traditional and orthodox medical

practitioners recognize and work on their similarities instead of differences that exist between them to provide a comprehensive health care delivery for all Ghanaians. In fact, there must be avenue for a dialogue between traditional and modern doctors that allows for cross referrals.

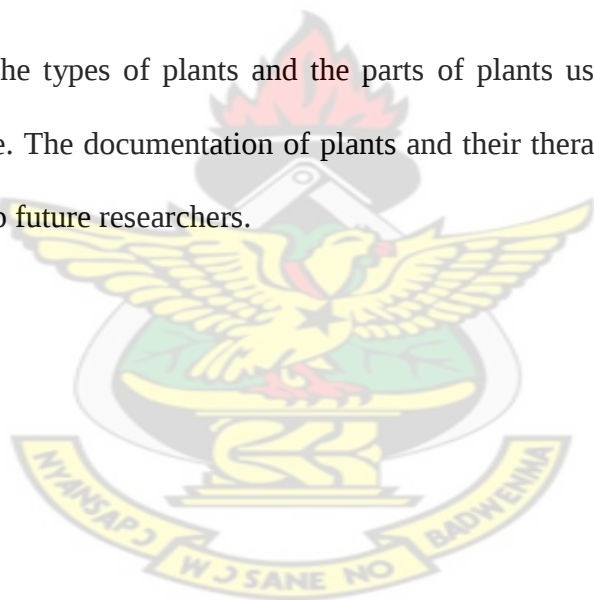
Moreover, a standard health care regulatory framework that cuts across all boards must be set for all medical practitioners in orthodox and herbal medicine. It is therefore suggested that for the health delivery system in Ghana to function well with less or no squabbles, there must be a standards of care that hold all practitioners equally. Traditional herbal practitioners must also embrace the use of scientific methods in their preparations. They must organize their activities and procedures to meet acceptable scientific standards, so that they can be integrated into orthodox health care system. Engaging science in herbal medicine preparation is not to replace the role of traditional healers but to enhance their knowledge by introducing facilities like laboratories to test the efficacy of the herbal medicine.

In as much as herbal practitioners adhere to the provisions of the regulatory framework, various measures put in place by the government of Ghana to enhance the services of orthodox medicine must also be given to traditional herbal medicine. Budgetary allowances to herbal practitioners must match that of the orthodox system. Government must enhance efforts by the Centre for Scientific Research into Plant Medicine (CSRPM), the Department of Herbal Medicine of the Kwame Nkrumah University of Science and Technology, and other private herbal health posts such as Top Herbal Clinic, Amen Herbal Scientific clinic, Adutwumwaa Herbal Clinic, Capital 02 Herbal Clinic and many others that are springing up in the country. In so doing, the government must put in effective regulatory bodies to periodically check the works of these health posts.

In addition, all stakeholders both in government and individuals must put in more effort to tap herbal medicinal knowledge from indigenous practitioners. By so doing, training and educational courses on how to document plants and their therapeutic properties for future generations must be organized for traditional herbal practitioners. It is further suggested that herbal practitioners should be trained in the principles of hygiene, branding and packaging of herbal products, and administration of dosage.

Future field studies must delve into the unhealthy relationship between herbal and orthodox practitioners as a way in which traditional and modern health care systems could be fully integrated.

Moreover, studies into the types of plants and the parts of plants used for medicine should be investigated in the future. The documentation of plants and their therapeutic properties is an area that must be of interest to future researchers.



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APPENDICES

APPENDIX 1:

INTERVIEW SCHEDULE FOR HOUSEHOLDS AGED 18 YEARS AND ABOVE

TOPIC: UTILISATION OF HERBAL MEDICINE AND ITS ROLE IN HEALTH CARE DELIVERY IN GHANA: THE CASE OF WASSA AMENFI WEST DISTRICT

The data of these questionnaires are being collected by BRIGHT ADJEI, a postgraduate student of KNUST, for research purposes only. It is not part of any project of the government, political party or commercial enterprise. All information given will be kept confidential and for academic purposes only. Thank you for your cooperation.

PART A: SOCIO-DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

(Please tick [☐] where appropriate)

1. Sex

1. [☐] Male

2. [☐] Female

2. (a) Age of respondent at last birthday (in years).....

(b) Age of respondent (in years)

1. [☐] 18-30

2. [☐] 31-40

3. [☐] 41-50

4. [☐] 51 and above

3. Marital status

1. [☐] Single

2. [☐] Married

3. [☐] Divorced

4. [☐] Widowed

5. [☐] Other (please specify).....

4. Religion

1. [☐] Christianity

2. [☐] Islamic

3. [☐] Traditional

4. [☐] Other (please specify).....

5. (a) Educational level

1. [☐] No formal education

2. [☐] Primary education

3. [☐] Junior Secondary/Middle School

4. [☐] Senior Secondary/Vocational education

5. [☐] Tertiary education

(b) Number of years of education.....

6. Employment status

1. [☐] Employed

2. [☐] Unemployed

7. Type of work, if employed.....

8. (a) Income per month (GHC).....

(b) Average income per month (GHC)

1. ☐ below 51 2. ☐ 51-100 3. ☐ 101-200 4. ☐ 201-500
 5. ☐ 501-1000 6. ☐ 1001 and above

9. Place of residence

1. ☐ Urban 2. ☐ Rural

PART B: PATRONAGE OF HERBAL MEDICINE

10. How do you perceive your health status?

1. ☐ Very good 2. ☐ Good 3. ☐ Average 4. ☐ Poor 5. ☐ Very Poor

11. How often did you fall sick in the last three months?

1. ☐ Very frequently 2. ☐ Frequently 3. ☐ About 2-3 times 4. ☐ only once
 5. ☐ Rarely/Never

12. On the average, how often do you fall sick in a year?

1. ☐ Very frequently 2. ☐ Frequently 3. ☐ About 2-3 times 4. ☐ only once
 5. ☐ Rarely/Never

13. Which medical care do you usually seek when sick?

1. ☐ Herbal medicine 2. ☐ Orthodox medicine 3. ☐ Spiritual Healing
 4. ☐ Other (please specify).....

14. Which medical care did you seek the last time you were sick?

1. ☐ Herbal medicine 2. ☐ Orthodox medicine 3. ☐ Spiritual Healing
 4. ☐ Other (please specify).....

15. Have you ever used herbal medicine? By herbal medicine, I mean the use of plant seeds, berries, roots, leaves, bark, or flowers for medicinal purposes.

1. ☐ Yes 2. ☐ No 3. ☐ Can't tell

16. What was the reason for using herbal medicine?

1. ☐ Closeness to me/accessibility 2. ☐ Affordability/less costly
 3. ☐ More efficacious 4. ☐ In line with my religion
 5. ☐ Other (please specify).....

17. How often do you use herbal medicine?

1. ☐ Always/Whenever sick 2. ☐ Sometimes 3. ☐ Once in a while
 4. ☐ Rarely/Never

18. How do you use herbal medicine?

1. ☐ First choice treatment 2. ☐ Alternative to orthodox medicine
 3. ☐ Complementary to orthodox medicine 4. ☐ Other (please specify).....

19. In which way(s) do you use herbal medicine?

1. ☐ Prevention of illness 2. ☐ Treatment of illness 3. ☐ Promotion of health
 4. ☐ Other (please specify).....

20. Which of the following describe way(s) you have obtained herbal medicine?

1. ☐ Prescribed by herbal practitioner
 2. ☐ Prescribed by orthodox health care professional (e.g., doctor, pharmacist, etc.)

3. ☐ Prescribed by a relative
4. ☐ Over the counter herbal remedies
5. ☐ Collected from garden/farm/backyard
6. ☐ Other (please specify).....

21. How many times have you used herbal medicine in the last three months?

1. ☐ Very frequently
2. ☐ Frequently
3. ☐ About 2-3 times
4. ☐ only once
5. ☐ Rarely/Never

22. How many times have you used orthodox medicine in the last three months?

1. ☐ Very frequently
2. ☐ Frequently
3. ☐ About 2-3 times
4. ☐ Only once
5. ☐ Rarely/Never

I am going to ask you a few questions about your thoughts regarding some differences between orthodox and herbal medicine. Please be as frank as possible.

23. (a) Which medical care system do you find less expensive?

1. ☐ Herbal medicine
2. ☐ Orthodox Medicine

(b) Please explain your answer in 23(a) above.....

(a) Which medical care system do you find more readily available?

1. ☐ Herbal medicine
2. ☐ Orthodox Medicine

(b) Please explain your answer in 24(a) above.....

24. (a) Which medical care system do you find more culturally acceptable?

1. ☐ Herbal medicine
2. ☐ Orthodox Medicine

(b) Please explain your answer in 25(a) above.....

For each of the following groups of people, indicate those who mostly use herbal medicine

25. 1. ☐ Males
2. ☐ Females
26. 1. ☐ Formally educated people
2. ☐ Non formally educated people
27. 1. ☐ Poor
2. ☐ Rich
28. 1. ☐ Rural
2. ☐ Urban
29. 1. ☐ Southern Ghanaians
2. ☐ Northern Ghanaians
30. 1. ☐ Christians
2. ☐ Non-Christians
31. Overall, what is your motivation for using herbal medicine?
1. ☐ More effective
2. ☐ Affordability/Less expensive
3. ☐ Close to me/Accessibility
4. ☐ Less adverse side effects
5. ☐ In line with my religion
6. ☐ Past experience with its use
7. ☐ Other (please specify).....

PART C: PERCEPTION ABOUT THE EFFICACY OF HERBAL MEDICINE

32. Do you think herbal medicine is effective in the treatment of diseases/illnesses?

1. ☐ Yes
2. ☐ No

33. If yes, name some of the diseases/illnesses effectively treated with herbal medicine.....

34. Comparing herbal medicine to orthodox medicine, which one do you consider more effective?
 1. ☐ Herbal Medicine 2. ☐ Orthodox medicine
35. Generally, how would you rate the efficacy of herbal medicine?
 1. ☐ Very effective 2. ☐ Effective 3. ☐ Moderate 4. ☐ Ineffective
36. Generally, how would you rate the safety of herbal medicine?
 1. ☐ Very safe 2. ☐ Safe 3. ☐ Somehow safe 4. ☐ Very unsafe
37. Have you ever experienced any adverse side effect(s) with the use of herbal medicine?
 1. ☐ Yes 2. ☐ No
38. Have you ever experienced any adverse side effect(s) with the use of orthodox medicine?
 1. ☐ Yes 2. ☐ No
39. It is popularly argued that the use of herbal medicine is dangerous to human health. How far do you agree with this statement?
 1. ☐ Strongly agree 2. ☐ Agree 3. ☐ Disagree 4. ☐ Strongly Disagree
40. What is/are the reason(s) for your answer in (40) above?

PART D: IMPROVEMENT OF HERBAL MEDICINE

41. Which solution do you recommend for the improvement of herbal medicine?
 1. ☐ Scientific research into the safety and efficacy of herbal medicines
 2. ☐ Sustainable utilization of medicinal plants
 3. ☐ Provision of licence to herbal practitioners
 4. ☐ Clinical testing of herbal medicines before use
 5. ☐ Other (please specify).....
42. Do you support the formal training of herbal practitioners for the improvement of their practices?
 1. ☐ Yes 2. ☐ No
43. What type of training do you support?
 1. ☐ Classroom educational training
 2. ☐ Practical training by experienced herbalists
 3. ☐ University level training/education
 4. ☐ Training abroad
 5. ☐ Other (please specify).....
44. What area do you think is important in the training of herbal practitioners?
 1. ☐ Dosage and side effects of herbal medicines
 2. ☐ Branding and packaging of herbal medicine
 3. ☐ Hygienic preparation and administration of herbal medicine
 4. ☐ Revelation of indigenous knowledge
 5. ☐ Sustainable utilization of medicinal plants
 6. ☐ Other (please specify).....

PART E: INTEGRATION OF TRADITIONAL AND ORTHODOX HEALTH CARE

45. Have you ever been referred by a medical doctor to an herbal practitioner/herbal clinic?
1. ☐ Yes 2. ☐ No

46. Have you ever been referred by herbal practitioner to a medical doctor/ hospital/clinic
1. ☐ Yes 2. ☐ No

47. Have herbal medicine ever been prescribed for you at the hospital/clinic or by a medical doctor?
1. ☐ Yes 2. ☐ No

48. Have orthodox medicine(s) ever been prescribed for you by an herbal practitioner?
1. ☐ Yes 2. ☐ No

49. Do you support the integration of traditional and orthodox healthcare systems?
1. ☐ Yes 2. ☐ No

50. In what way(s) do you think the integration of traditional and modern health care systems would be of benefit to you?

51. In what specific way do you think integration of herbal and orthodox medicine could be achieved?
1. ☐ Cross-referral of patients
2. ☐ Documentation of herbal medicines and their uses
3. ☐ Registration and provision of license to herbal practitioners
4. ☐ Training of herbal practitioners in modern healthcare practices
5. ☐ Clinical testing of the efficacy and safety of herbal medicines
6. ☐ Other (please specify).....

52. What are some of the major health constraints being experienced in the district?
1. ☐ Health facilities are located far away from home
2. ☐ There are long queues at the hospitals/clinics
3. ☐ Health services are expensive
4. ☐ Health care professionals are inadequate
5. ☐ Health education is low
6. ☐ Other (Please specify).....

53. Do you think the integration of orthodox and traditional medicine could help to address the health constraints in the district?
1. ☐ Yes 2. ☐ No

54. If yes, in what ways?

Thank you for your cooperation and honest responses to the questions.

APPENDIX 2

INTERVIEW SCHEDULE FOR HERBAL PRACTITIONERS

TOPIC: UTILISATION OF HERBAL MEDICINE AND ITS ROLE IN HEALTH CARE DELIVERY IN GHANA: THE CASE OF WASSA AMENFI WEST DISTRICT

The data of these questionnaires are being collected by BRIGHT ADJEI, a postgraduate student of KNUST, for research purposes only. It is not part of any project of the government, political party or commercial enterprise. All information given will be kept confidential and for academic purposes only. Thank you for your cooperation.

PART A: SOCIO-DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

(Please tick [☐] where appropriate)

1. Sex

1. [☐] Male

2. [☐] Female

2. (a) Age of respondent at last birthday (in years).....

(b) Age of respondent (in years)

1. [☐] 18-30

2. [☐] 31-40

3. [☐] 41-50

4. [☐] 51 and above

3. Marital status

1. [☐] Single

2. [☐] Married

3. [☐] Divorced

4. [☐] Widowed

5. [☐] Other (please specify).....

4. Religion

1. [☐] Christianity

2. [☐] Islamic

3. [☐] Traditional

4. [☐] Other (please specify).....

5. (a) Educational level

1. [☐] No formal education

2. [☐] Primary education

3. [☐] Junior Secondary/Middle School education

4. [☐] Senior Secondary/Vocational education

5. [☐] Tertiary education

(b) Number of years of education.....

6. Occupation.....

7. How long (years) have you being in professional Practice?

1. [☐] Less than 5years

2. [☐] 5-10years

3. [☐] More than 10years

PART B: USE OF HERBAL MEDICINE AND INTEGRATION OF TRADITIONAL AND ORTHODOX HEALTH CARE SYSTEMS

8. Can you briefly explain what you do here?.....
9. From who did you acquire the knowledge of herbal medicine?
 1. ☐ Parent(s) 2. ☐ Grandparent(s) 3. ☐ School
 4. ☐ Apprenticeship with herbal practitioner 5. ☐ Revelation in a dream
 6. ☐ Other (please specify).....
10. What major diseases/illness do you treat? (Please tick all that applies).
 1. ☐ Sexually Transmitted Infections (STIs) 2. ☐ Chronic skin infections/Boils
 3. ☐ Malaria/Typhoid/Jaundice 4. ☐ Infertility/Sexual weakness 5. ☐ Diabetes
 6. ☐ Tuberculosis/Asthma 7. ☐ Stroke/ Hypertension 8. ☐ Mental illness
 9. ☐ HIV/AIDS 10. ☐ Piles/Waist pains 11. ☐ Epilepsy
 12. Bone fracture/Arthritis 13. ☐ Snake bite/Dog bite/Cutlass wound
 13. ☐ Other (please specify).....
11. Can you cite any unique case(s) you have treated? (Please tick all that applies).
 1. ☐ HIV/AIDS 2. ☐ Diabetes 3. ☐ Stroke
 4. ☐ Infertility 5. ☐ Mental illness 6. ☐ Epilepsy
 7. ☐ Other (please specify).....
12. About how many people patronise your services every day?.....
13. About how many people patronise your services every month?.....
14. Which category of people mostly patronise your services?
 - (a) 1. ☐ Males 2. ☐ Females
 - (b) 1. ☐ Christians 2. ☐ Non-Christians (c) 1. ☐ Poor 2. ☐ Rich
 - (d) 1. ☐ Rural 2. ☐ Urban
 - (e) 1. ☐ Formally educated 2. ☐ Non-formally educated
 - (f) 1. ☐ Southern Ghanaians 2. ☐ Northern Ghanaians
15. On the whole, how potent do you think your medicines/ prescriptions are?
 1. ☐ Very potent 2. ☐ Potent 3. ☐ Somehow potent 4. ☐ Trial and error
 5. ☐ Other (Please specify).....
16. Do your preparations involve any secrecy?
 1. ☐ Yes 2. ☐ No

How willing are you to disclose the contents of your preparations to the following:

17. Herbal practitioners?
 1. ☐ Very willing 2. ☐ Willing 3. ☐ Somehow willing 4. ☐ Not willing
18. Give reason(s) for your answer above.....
19. Orthodox health care professionals?
 1. ☐ Very willing 2. ☐ Willing 3. ☐ Somehow willing 4. ☐ Not willing

20. Give reason(s) for your answer above.
21. As herbal medical practitioner, are you against the use of orthodox medicine?
1. ☐ Vehemently against 2. ☐ Against 3. ☐ Somehow against
3. ☐ Not against 3. ☐ Not against at all
22. What is/are the reasons for your in (21) answer above?..... Do you believe that herbal medicine is well accepted by the community?
1. ☐ Strongly believe 2. ☐ Believe 3. ☐ Somehow believe
4. ☐ Do not believe 5. ☐ Do not believe at all
23. Give reason(s) for your answer above.
24. Do you prescribe modern drugs along with herbal medicines to your clients?
1. ☐ Yes, Always 2. ☐ Yes, sometimes ☐ Not at all
25. What measures do you take in case of failure to treat a client?
1. ☐ Give advice to visit the hospital/clinic
3. ☐ Attempt other medicines or provide additional dose
2. ☐ Refer to other herbal practitioners
4. ☐ Nothing
5. ☐ Other (please specify).....
26. Have patients been referred from a medical doctor or hospital/clinic to you?
1. ☐ Yes 2. ☐ No
27. Do you come across patient(s) who visit you soon after visiting the hospital/clinic?
1. ☐ Yes 2. ☐ No
28. Under what circumstances do such patients visit you?.....
29. Do you support the cooperation of traditional and orthodox health care professionals?
1. ☐ Yes 2. ☐ No
30. Which solution(s) do you recommend for the improvement of herbal medicinal practice? (Please tick all that applies).
1. ☐ Scientific research into the safety and efficacy of herbal medicines
2. ☐ Sustainable utilization of medicinal plants
3. ☐ Provision of licence to herbal practitioners
4. ☐ Clinical testing of herbal medicines before use
5. ☐ Other (please specify).....
31. Do you support the training of herbal practitioners for the improvement of their practices?
1. ☐ Yes 2. ☐ No
32. What areas do you think is/are important in the training of herbal practitioners?
1. ☐ Dosage of and side effects of herbal medicines
2. ☐ Branding and packaging of herbal medicine
3. ☐ Hygienic preparation and administration of herbal medicine

4. ☐ Revelation of indigenous knowledge
5. ☐ Sustainable utilization of medicinal plants
6. ☐ Other (please specify).....

33. In what specific ways do you think integration of herbal and orthodox medicine could be achieved?

1. ☐ Cross-referral of patients
2. ☐ Documentation of herbal medicines and their uses
3. ☐ Registration and provision of license to herbal practitioners
4. ☐ Training of herbal practitioners in modern healthcare practices
5. ☐ Clinical testing of the efficacy and safety of herbal medicines
6. ☐ Other (please specify)

34. What are some of the health constraints being experienced in the district?

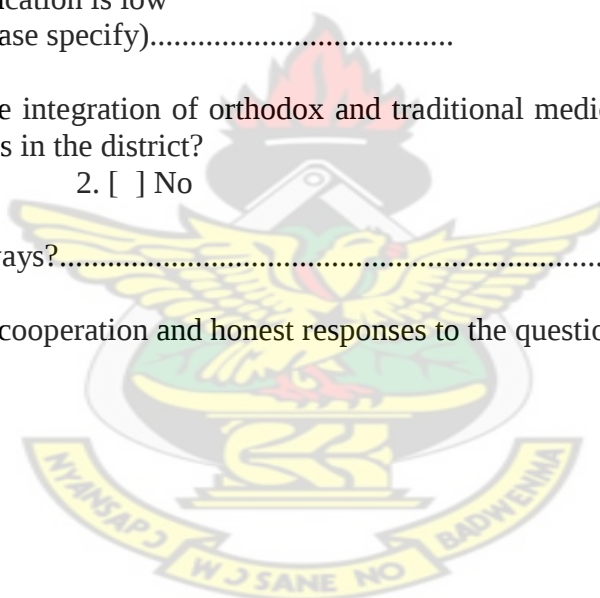
1. ☐ Health facilities are located far away from home
2. ☐ There are long queues at the hospitals/clinics
3. ☐ Roads leading to hospital/clinics are unmotorable
4. ☐ Health care professionals are inadequate
5. ☐ Health education is low
6. ☐ Other (Please specify).....

35. Do you think the integration of orthodox and traditional medicine could help address the health constraints in the district?

1. ☐ Yes
2. ☐ No

36. If yes, in what ways?.....

Thank you for your cooperation and honest responses to the questions.



APPENDIX 3

QUESTIONNAIRE FOR ORTHODOX HEALTH CARE PROFESSIONALS

TOPIC: UTILISATION OF HERBAL MEDICINE AND ITS ROLE IN HEALTH CARE DELIVERY IN GHANA: THE CASE OF WASSA AMENFI WEST DISTRICT

The data of these questionnaires are being collected by BRIGHT ADJEI, a postgraduate student of KNUST, for research purposes only. It is not part of any project of the government, political party or commercial enterprise. All information given will be kept confidential and for academic purposes only. Thank you for your cooperation.

PART A: SOCIO-DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

(Please tick [☐] where appropriate)

Name of health facility.....

1. Sex of Respondent

1. [☐] Male

2. [☐] Female

2. (a) Age of respondent at last birthday (in years).....

(b) Age of respondent (in years)

1. [☐] 18-30

2. [☐] 31-40

3. [☐] 41-50

4. [☐] 51 and above

3. Marital status

1. [☐] Single

2. [☐] Married

3. [☐] Divorced

4. [☐] Widowed

5. [☐] Other (please specify).....

4. Religion

1. [☐] Christianity

2. [☐] Islamic

3. [☐] Traditional

4. [☐] Other (please specify).....

5. (a) Educational level

1. [☐] No formal education

2. [☐] Primary education

3. [☐] Junior Secondary/Middle School education

4. [☐] Senior Secondary/Vocational education

5. [☐] Tertiary education

(b) Number of years of education.....

6. Category of Occupation

1. [☐] Doctor

2. [☐] Nurse

3. [☐] Pharmacist

4. [☐] Dentist

5. [☐] Other (please specify).....

7. How long (years) have you being in professional Practice?

1. [☐] Less than 5years

2. [☐] 5-10years

3. [☐] More than 10years

8. How long (years) have you been working in this district?

PART B: USE OF HERBAL MEDICINE AND INTEGRATION OF TRADITIONAL AND ORTHODOX HEALTH CARE SYSTEMS

9. Have you ever used herbal medicine?

1. ☐ Yes 2. ☐ No

10. Do you use herbal medicine?

1. ☐ Always 2. ☐ Sometimes 3. ☐ Once in a while 4. ☐ Rarely/Never

11. As an orthodox health care professional, are you against the use of herbal medicine?

1. ☐ Vehemently against 2. ☐ Against 3. ☐ Somehow against
3. ☐ Not against 3. ☐ Not against at all

12. What is/are the reason(s) for your answer in (11) above?.....

13. Do you think herbal medicine is effective in the treatment of diseases/illness?

1. ☐ Yes 2. ☐ No

14. If yes, name some of the diseases that you think herbal medicine can effectively treat

.....
...

15. Do you believe that the use of herbal medicines is beneficial to health care delivery?

1. ☐ Strongly believe 2. ☐ Believe 3. ☐ Somehow believe
4. ☐ Do not believe at all

16. Give reason(s) for your answer in (15)

17. Knowledge about herbal medicine is important to me as an orthodox health care professional.

1. ☐ Always 2. ☐ Sometimes 3. ☐ Never

18. Do you specifically ask your patients/clients about their use of herbal medicine when taking their drug history?

1. ☐ Yes 2. ☐ No

19. Which of the following do you think is/are barriers to the use of herbal medicines in orthodox medical practices?

1. ☐ Lack of evidence for the practice of herbal medicine
2. ☐ Lack of proper training of herbal practitioners
3. ☐ Unavailability of credible herbal practitioners
4. ☐ Lack of scientific research and clinical testing of herbal medicine
5. ☐ Adulteration with herbal medicines
6. ☐ Other (please specify).....

20. Have you ever recommended or prescribed herbal medicine(s) to a patient?

1. ☐ Yes 2. ☐ No

21. Have patients been referred to your hospital/clinic by herbal practitioners?

1. ☐ Yes 2. ☐ No

22. Do you think that university education in herbal medicine is relevant?

1. ☐ Yes 2. ☐ No

23. Do you come across patient(s) who visit your hospital/clinic soon after using herbal medicine?

1. ☐ Yes 2. ☐ No

24. Do you support the cooperation of traditional and orthodox health care professionals?
1. ☐ Yes 2. ☐ No
25. Which solution(s) do you recommend for the improvement of herbal medicinal practice?
1. ☐ Scientific research into the safety and efficacy of herbal medicines
2. ☐ Sustainable utilization of medicinal plants
3. ☐ Provision of licence to herbal practitioners
4. ☐ Clinical testing of herbal medicines before use
5. ☐ Other (please specify).....
26. Do you support the training of herbal practitioners for the improvement of their practice?
1. ☐ Yes 2. ☐ No
27. What areas do you think is/are important in the training of herbal practitioners? (Please tick all that applies).
1. ☐ Dosage of and side effects of herbal medicines
2. ☐ Branding and packaging of herbal medicine
3. ☐ Hygienic preparation and administration of herbal medicine
4. ☐ Revelation of indigenous knowledge
5. ☐ Sustainable utilization of medicinal plants
6. ☐ Other (please specify).....
28. Do you believe that herbal medicine is well accepted by the community?
1. ☐ Strongly believe 2. ☐ Believe 3. ☐ Somehow believe
4. ☐ Do not believe at all
29. Give reason(s) for your answer in (28) above.
30. In what specific ways do you think integration of herbal and orthodox medicine could be achieved?
1. ☐ Cross-referral of patients
2. ☐ Documentation of herbal medicines and their uses
3. ☐ Registration and provision of license to herbal practitioners
4. ☐ Training of herbal practitioners in modern healthcare practices
5. ☐ Clinical testing of the efficacy and safety of herbal medicines
6. ☐ Other (please specify)
31. What are some of the health constraints being experienced in the district?
1. ☐ Health facilities are located far away from home
2. ☐ There are long queues at the hospitals/clinics
3. ☐ Roads leading to hospital/clinics are unmotorable
4. ☐ Health care professionals are inadequate
5. ☐ Health education is low
6. ☐ Other (Please specify).....
32. Do you think the integration of orthodox and traditional medicine could help address the health constraints in the district?
1. ☐ Yes 2. ☐ No
33. If yes, in what ways?.....

Thank you for your cooperation and honest responses to the questions.

APPENDIX 4

Appendix 4: Sample Size Distribution

Study area	Population (18years and above)	Percentage contribution to total population of study communities	Sample size allocation
Manso Amenfi	1346	36	74
Hiawa	882	23	47
Achichire	719	19	39
Obing	493	13	27
Manhyia	342	9	18
Total	3782	100	205

Source, Author's construct, 2010

