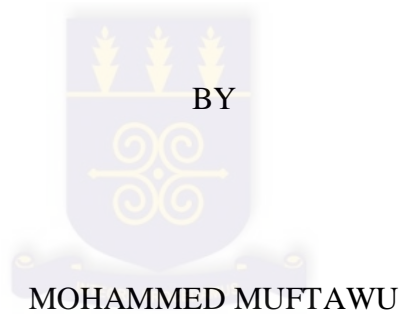


SCHOOL OF PUBLIC HEALTH

COLLEGE OF HEALTH SCIENCES

UNIVERSITY OF GHANA

CHALLENGES OF INTEGRATING HERBAL MEDICINE INTO NATIONAL  
HEALTHCARE DELIVERY SYSTEM OF GHANA: THE CASE OF LEKMA  
HOSPITAL- GREATER ACCRA REGION



THIS DISSERTATION IS SUBMITTED TO THE UNIVERSITY OF GHANA,  
LEGON IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE  
AWARD OF MASTER OF PUBLIC HEALTH DEGREE.

July, 2014

**DECLARATION**

I, Mohammed Muftawu, declare that except for the other people's works which have been duly acknowledge, this thesis is the result of my own original research, and that this thesis, either in whole or in part has not been presented elsewhere for another degree.

Signed:.....

Date:.....

Mohammed Muftawu

STUDENT



Signed:.....

Date:.....

Dr. R.K. Esena

ACADEMIC SUPERVISOR

### **DEDICATION**

I dedicate this work to my mother Hajia Anshawu, my dearest wife Ruquaya and our daughter Hanifah, for their moral support. Their support cannot be quantified and I pray that Allah reward and protect them.



### **ACKNOWLEDGEMENT**

All praises and thanks are due to Almighty Allah for taking me through one calendar year of serious academic work from the beginning to the end. I am highly indebted to my academic supervisor Dr. R.K. Esena for his implicit and cogent inputs made into this study. His humility, sense of humour and encouragement cannot be over emphasized. I wish to thank the LEKMA hospital staff for their warm welcoming and support especially Mrs Sandra Boakye-Yiadom (a Medical Herbalist).

It will be suicidal to have forgotten the help and support given me by my wife Ruquaya and my brother Mubarick. Infact I would not be writing this at this time if not for their help in terms of constructive judgments.



## ABSTRACT

**Introduction:** About 80% of the world's populations rely on traditional medicine. As a result, many countries (both developing and developed) are making efforts to integrate Traditional Medicine into mainstream healthcare delivery system. World Health Organisation (WHO) considers Traditional Medicine as one of the surest means to achieve universal health coverage. Since the early 1970s, Ghana has made tremendous efforts to integrate traditional/herbal medicine into the national healthcare system. In 2011, the integration of herbal medicine into Ghana's formal healthcare started with 13 pilot centres of which LEKMA hospital is among.

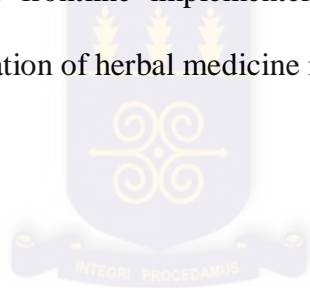
**Objective:** This study explored challenges facing the integration of Herbal Medicine services into the national healthcare system of Ghana using one of the pilot centre located in Greater Accra Region (LEKMA HOSPITAL). The study investigated further by involving appropriate stakeholders to analyse the current relevant policies and the implementation strategies.

**Methodology:** This was a cross sectional study that combined both qualitative and quantitative approaches in order to understand issues critically, using semi-structured questionnaire and in-depth interviews, from the perspective of the patients, providers and policy makers and implementers. The data entry section was aided by SPSS V20 and analysis by Stata v11 for the quantitative approach while Nvivo7 for the qualitative aspect with the development of appropriate codes and themes for analysis.

**Results and Discussion:** Majority of the patients were women (66.7%). The mean age of the patients was approximately  $46.4 \pm 15.3$  years with the age groups 36-45, 46-55 and 56 and over representing 28.7%, 21.8% and 26.4% respectively. Generally patients have a very good perception on the integration of herbal medicine at LEKMA hospital. About 94% of the Patients respondents think that the services of the herbal

unit at the hospital are important. But patients are ignorant of the potential toxicity of herbal medicine and as a result are likely not to report any minor untoward effect they might experience or they might not even notice it. The challenges the integration of herbal medicine is facing currently at LEKMA hospital relate to drug shortages, lack of proper publicity, antagonism by some orthodox medicine practitioners and lack of good leadership and management skills by the government.

**Conclusion:** The challenges identified are things that could have been address at the stage prior to the starting of the integration. Possibly some of the stakeholders who were involved in the planning stages had overlooked certain things or they do not have passion for the integration. Passion is identified to be a driving force to Research scientist, government and frontline implementers (hospital management) for the sustainability of the integration of herbal medicine into the national healthcare



## TABLE OF CONTENTS

DECLARATION .....	ii
DEDICATION .....	iii
ACKNOWLEDGEMENT .....	iv
ABSTRACT.....	v
LIST OF TABLES .....	x
LIST OF FIGURES.....	xi
LIST OF ACRONYMS .....	xii
DEFINITION OF TERMS .....	xiii
CHAPTER ONE .....	1
1.0 Background .....	1
1.1 Problem Statement .....	2
1.2 Conceptual Framework of Integration of Herbal Medicine Into National Healthcare System. ....	3
1.3 Justification .....	5
1.4 Objective .....	6
CHAPTER TWO .....	7
LITERATURE REVIEW .....	7
2.0: Introduction.....	7
2.1 Historical overview of Traditional Medicine .....	7
2.2 Policy development on TM .....	9
2.3 Research and training needs .....	12
2.4 Safety monitoring of herbal products.....	12
2.5 Education and training .....	14
2.6 Integration of Herbal Medicine .....	14
2.7 Economic Implications .....	17
CHAPTER THREE.....	19
3.0: Introduction .....	19
3.1: Type of Study .....	19
3.2: Study Area.....	19
3.3: Sampling .....	21
3.31: Study population.....	21
3.32: Sample size.....	22
3.33: Sampling method.....	22

3.4: Variables .....	23
3.5: Data collection technique .....	23
3.6: Data collection tools .....	24
3.7: Data analysis .....	24
3.8: Ethical consideration.....	25
3.9: Quality Control.....	25
3.10: Limitations of the study .....	26
3.11: Pretesting.....	26
<b>CHAPTER FOUR .....</b>	<b>27</b>
<b>RESULTS .....</b>	<b>27</b>
4.0: Introduction .....	27
4.1 Demographic characteristics of the study participants.....	27
4.2: Perception on integration of herbal medicine into healthcare system.....	29
4.3: knowledge on safety of herbal medicine.....	31
4.31: Safety awareness of herbal medicine .....	31
4.32: Safety monitoring of herbal medicine.....	33
4.4: The critical challenges .....	33
4.41: Shortage of drugs .....	33
4.42: Publicity leads to Patronage of the herbal unit services .....	34
4.43: The need for research and development.....	35
4.44: Relationship between herbal staff and orthodox staff.....	36
4.5: Processes prior to the integration.....	37
<b>CHAPTER FIVE.....</b>	<b>39</b>
<b>DISCUSSION .....</b>	<b>39</b>
5.0: Introduction .....	39
5.1: Demographics.....	39
5.2: Views on services of the herbal unit .....	40
5.3: Public health safety.....	40
5.4.: The Constraints to Smooth Integration .....	42
5.41: Antagonism .....	42
5.42: Shortages of drugs .....	42
5.43: Publicity .....	43
5.5: Policy implications .....	44
<b>CHAPTER SIX.....</b>	<b>46</b>

CONCLUSIONS AND RECOMMENDATION.....	46
6.1 Conclusion.....	46
6.2 Recommendations.....	46
REFERENCES.....	48
APPENDICES .....	52
Appendix I:Consent Form .....	52
Appendix II: Structured questionnaire for patients. ....	55
Appendix III: IN-DEPTH INTERVIEW GUIDE FOR PROVIDERS.....	58
Appendix IV: IN-DEPTH INTERVIEW GUIDE FOR POLICY-MAKERS.....	59



### LIST OF TABLES

Table 1: Background characteristics of study participants for the qualitative approach	..... 29
Table 2: Patients perceptions on herbal medicine services at the herbal unit	.....30
Table 3: Patients knowledge on safety of herbal medicine	.....32



**LIST OF FIGURES**

Figure 1: Conceptual framework ..... 4

Figure 2: Geographical location of LEKMA hospital .....20

Figure 3: demographic characteristics of patients participants...28



### **LIST OF ACRONYMS**

- LEKMA : Ledzokuku-Krowo Municipal Assembly
- WHO : World Health Organization
- TAMD : Traditional and Alternative Medicine Directorate-Ministry of Health,  
Ghana
- TMPC : Traditional Medicine Practice Council
- TM : Traditional Medicine
- CAM : Complementary and Alternative Medicine
- T&CM : Traditional and Complementary Medicine
- GHAFTRAM : Ghana federation of traditional medicine practitioners.



## DEFINITION OF TERMS

**T&CM products** include herbs, herbal materials, herbal preparations and finished herbal products that contain parts of plants, other plant materials or combinations thereof as active ingredients. In some countries Herbal Medicines may contain, by tradition, natural organic or inorganic active ingredients that are not of plant origin (e.g. animal and mineral materials).

(Ref.: modified questionnaire explanation in the second WHO Global Survey).

**T&CM practices** include medication therapy and procedure-based health care therapies such as Herbal Medicines, naturopathy, acupuncture and manual therapies such as chiropractic, osteopathy as well as other related techniques including qigong, tai chi, yoga, thermal medicine, and other physical, mental, spiritual and mind-body therapies. (Ref.: modified definition of procedure-based therapies in WHO General Guidelines for Methodologies on Research and Evaluation of Traditional Medicine).

**T&CM practitioners** can be TM practitioners, CM practitioners, conventional medicine professionals and health care workers such as doctors, dentists, nurses, midwives, pharmacists and physical therapists who provide TM/CAM services to their patients (Ref.: modified questionnaire explanation in the second WHO Global Survey).

**CAM** refer to a broad set of health care practices that are not part of that country's own tradition or conventional medicine and are not fully integrated into the dominant health-care system.

**CLIENTS** refer to patients visiting the herbal unit for their healthcare problems at the LEKMA hospital.

**PROVIDERS** refer to service providers at the herbal and managers of the hospital.

**POLICY-MAKERS** refer to policy makers and regulatory bodies.

## CHAPTER ONE INTRODUCTION

### 1.0 Background

Traditional Medicine (TM) is widely used in most countries especially in Africa, and in some areas it is the only source of primary healthcare (WHO, 2002). About 80% of the world's populations rely on traditional medicine and 70% of people living in Ghana utilize traditional medicine in one way or the other (TAMD, 2006).

Traditional Medicine (TM) is defined by World Health Organization (WHO) as comprising the knowledge, skills and practices based on the theories, beliefs and experiences indigenous to different cultures, used in the maintenance of health and in the prevention, diagnosis, improvement or treatment of physical and mental illness (WHO, 2002). The practice of Traditional Medicine differs from one country to another country and even within regions of the same country. The term Traditional Medicine has different connotation based on the global location of a country. In most part of the world, the term Complementary and Alternative Medicine (CAM) is synonymous to Traditional Medicine. As defined by WHO the terms "Complementary Medicine" or "Alternative Medicine" refer to a broad set of health care practices that are not part of that country's own tradition or conventional medicine and are not fully integrated into the dominant health-care system (WHO, 2002). The terms traditional medicine and Complementary and Alternative Medicine (CAM) find their widespread use in developing countries and developed countries respectively.

Herbal medicine is an integral part of traditional medicine and is the most common form of Traditional Medicine practice compared to others such as spiritualism among others. The two terms will be used interchangeably in this study as herbal medicine happens to be the most popular form of traditional medicine as the case in Ghana.

Worldwide, the need for integrating TM/CAM services is increasing since 1978 after the Alma Ata declaration. Among other things, the Alma Ata declaration recommended introduction of safe traditional medicine in drug policies and regulatory measures among WHO Member States. The integration of herbal medicine services into national health system is a means of expanding primary healthcare and thus ensuring health equality leading to universal health coverage (Good, 1977). Integration is a process of incorporating traditional medical practices into the formal health service. Hyma and Ramesh (1994) further explained that integration will lead to the exposure of traditional and conventional medicine practitioners to the philosophies behind the two medical systems.

Globally, countries have shown different levels of interest in integrating traditional medicine into their formal healthcare system. As a result, WHO in its traditional medicine strategy 2002-2005 has classified three (3) levels of health systems with regard to the extent of integration of traditional medicine. These levels are integrative system, inclusive system and tolerant system.

### **1.1 Problem Statement**

The integration of herbal medicine into national healthcare system is the inclusion of herbal medicine into all aspects of national health systems. To reach the integration state, WHO required the presence of national policies on herbal medicine, national programs, formal education, research centres, presence of the herbal medicine services at both public and private hospital and treatment reimbursed under the national health insurance of a country (WHO, 2002). The objective is to ensure universal health coverage (Kofi-Tsekpo, 2004).

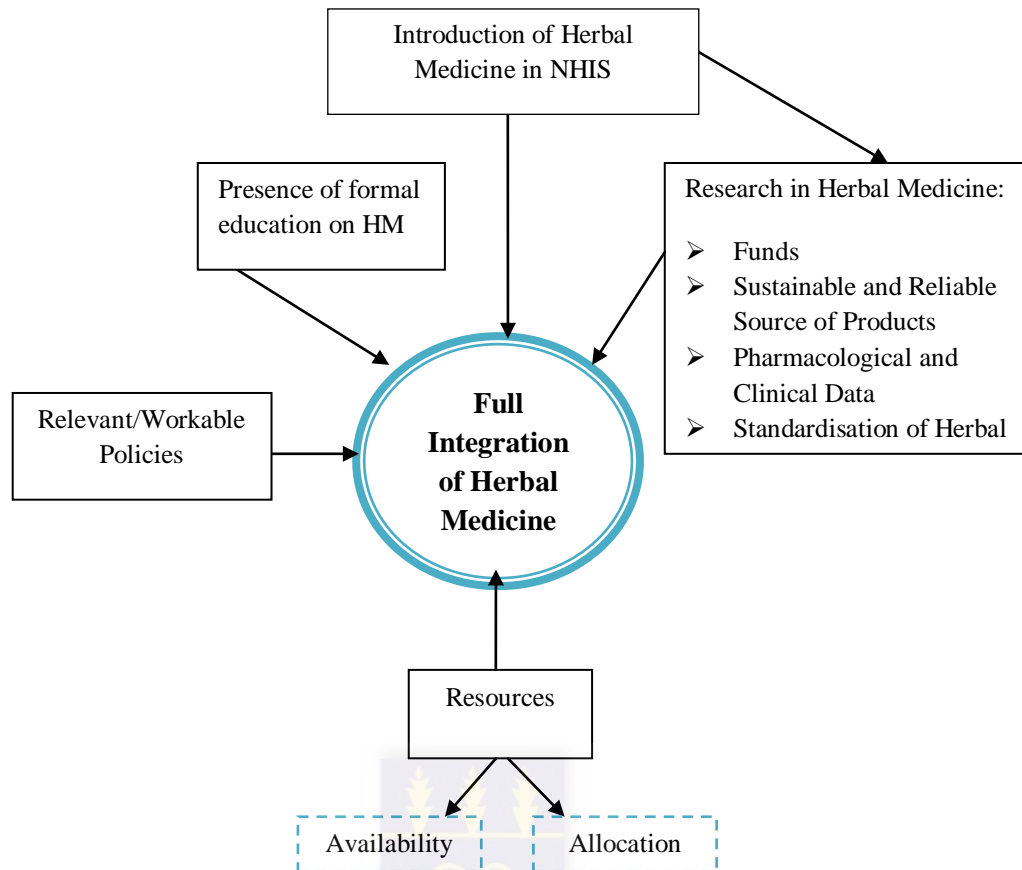
In Ghana, successive governments have made commitment in this regard that led to the establishment of Centre for Scientific Research into Plant Medicine (CSRPM), Traditional and Alternative Medicine Directorate (TAMD-MOH), Traditional Medicine Practice Council (TMPC) and School of Herbal Medicine at KNUST as part of effort to ensure effective integration of Herbal Medicine into Ghana's national health system. All these achievements have been made for more than a decade now, yet the integration is not fully attained.

With the estimated 100,000 Traditional Medicine practitioners (Moh, 2006) uniformly distributed nationwide and contributing to about 70% of the population health needs at primary healthcare level, the need for the integration of Herbal Medicine becomes very crucial.

## **1.2 Conceptual Framework of Integration of Herbal Medicine Into National Healthcare System.**

Incorporating traditional/Herbal Medicine into all aspects of the health systems is the requirement of achieving full integration as outlined (as shown in fig.1) by World health organization (WHO, 2002).

Research in Herbal Medicine will assure quality, safe and sustainable supply of the herbal products for patients' consumption.



*Fig 1: conceptual framework of factors required to achieve full integration of Herbal Medicine into national health systems (WHO, 2002)*

Interest in research and with appropriate study methodology taking cognizance of the ethnic, cultural and intellectual property right issues will unmask a lot of myths regarding Traditional Medicine and could inevitably lead to discovery of potent medicines. Information and scientific literature on various plants and its components will be available for national health insurance authority which will lead to reimbursement after treatment by a national health insurance authority accredited health provider. Thus issues of safety, standardization, efficacy and cost-effectiveness will be unraveled.

Formal training and education will add more competencies and skills to the Traditional Medicine practice by way of modern science approach. This will ensure

good communication between the traditional and orthodox medicine practitioners and thus lead to effective integration

Availability of appropriate and relevant policies determines government interest and commitment towards the integration of the Traditional Medicine into health systems. When policies and laws are enacted, the needed resources to facilitate research and development of Traditional Medicine would be easier made available and allocated efficiently. The policies will also guide the practitioners and the practice to ensure sanity and safety of the public health

### **1.3 Justification**

About 80% of the world's population utilizes traditional medicine (Debas et al., 2006). In view of that, interest in integrating traditional medicine into the national healthcare system is building up across various countries. Ghana started the integration of herbal medicine into formal healthcare in 2011 with 13 pilot centres of which LEKMA hospital is part. It therefore becomes very important to investigate the challenges facing the integration using LEKMA hospital.

The findings of this research will be relevant to policy makers and implementers in the promotion and development of Herbal Medicine. The study is also essential because management of the hospital could apply some of the findings to optimize healthcare delivery.

## **1.4 Objective**

### **1.4.1 General objective:**

The general objective is to explore the reasons for lack of proper and effective integration of Herbal Medicine services into Ghana's national healthcare system and identify ways in which it can be improved.

### **1.4.2 Specific objectives are to:**

- Analyse the demographic characteristics of the study participants.
- Assess patient's perception on the integration of herbal medicine service at the hospital.
- Assess the patient's knowledge on the safety of herbal medicine.
- Identify the challenges facing the integration of herbal and orthodox medicine practices at LEKMA hospital
- Analyse barriers to effective implementation of the policy guidelines regarding the integration of herbal medicine into national healthcare.

### **1.4.3 Research questions**

The study will be guided by the following research questions:

- What are the factors affecting the integration of Herbal Medicine into national healthcare system?
- What is the level of knowledge of the safety of Herbal Medicine among clients?

## CHAPTER TWO

### LITERATURE REVIEW

#### 2.0: Introduction

In this chapter, previous studies related to research, development and integration of traditional medicine have been reviewed. The terms traditional medicine and herbal medicines will be used interchangeably since the latter is the most popular form of the former.

The benefits derived from Traditional Medicine are remarkable. Dr Margaret Chan, the WHO Director-General (2007-till date) clearly stated this during the international conference on Traditional Medicine for South-East Asian countries as follows:

*“Traditional Medicines, of proven quality, safety, and efficacy, contribute to the goal of ensuring that all people have access to care. For many millions of people, Herbal Medicines, traditional treatments, and traditional practitioners are the main source of health care, and sometimes the only source of care. This is care that is close to homes, accessible and affordable. It is also culturally acceptable and trusted by large numbers of people. The affordability of most Traditional Medicines makes them all the more attractive at a time of soaring health-care costs and nearly universal austerity. Traditional Medicine also stands out as a way of coping with the relentless rise of chronic non-communicable diseases.”*

#### 2.1 Historical overview of Traditional Medicine

Mankind use of Traditional Medicine started since time immemorial. The use of herbs in treating ailments and afflictions irrespective of the causes predates the ancient Mesopotamia and Egyptian civilisations. Archaeological evidence indicates that the use of medicinal plants dates back at least to the second period of the Stone Age (Paleolithic), approximately 60,000 years ago.

It is believed that in Mesopotamia, the Sumerian civilization in particular was extraordinarily advanced in many ways and possessed remarkable knowledge of growing and using plants. Assyria could also boast of an impressive knowledge of

medicinal herbs. When the Greek civilization was built it also gave rise to a number of important schools of medicine and healers who utilized medicinal herbs including Hippocrates —Father of Medicine (Nunn, 2002). As trade among Europe, the Middle East, India, and Asia flourished in the second and third centuries so did interest in Herbal Medicines. Most scholars began documenting plants and their medicinal properties during this time period. Both China and India were able to develop extensive medical systems with Herbal Medicine. Although these systems varied significantly, their central focus was that illness is the result of bodily imbalances. Thus, healing can take place by using herbs to create the bodily homeostasis (balance) and harmony. Through the word of mouth, apprenticeship, and constant use of herbs as natural remedy, ancient healers were able to develop a high level of practical knowledge of Herbal Medicine.

The demand for Traditional Medicine has seen an exponential increase since 1990s, especially in the provision of primary healthcare in both developing and developed countries with at least 80% of all modern pharmaceutical medicines being derived from herbs (Gilani & Atta-ur-Rahman, 2005). Conservative estimate of 80% of the world's population rely on traditional and complementary medicine. As a result, a considerable importance is given to TM in decision making regarding intervention for the public health (Ness et al, 2005).

Various reasons have been suggested for this exponential increase in demand of traditional medicine. The most reported one is that traditional medicine products are natural and thus 100% safe (WHO, 2004). This obviously is a misconception and misunderstanding in this day of modern science. In addition to the 'natural being safe' attribute of herbal products, in Africa and some other developing countries the increasing use of TM is due to its ease of accessibility and affordability. The easier accessibility of TM reflected well in the ratio of Traditional Healers to population in

Africa being 1:500 whereas the ratio of Conventional Doctors to population is 1:40 000 (Abdullahi, 2011).

In Ghana, an estimated 70% of the population depends primarily on TM (Roberts, 2001 as cited in Abdullahi, 2011) with a Traditional Medicine practitioner (TMP) to population ratio of 1:200 while that of the conventional medicine practitioner (CMP) to population is 1:20000. Similar trends were seen in other countries like Zimbabwe, Mozambique, Swaziland and Tanzania with 1:600, 1:200, 1:100, 1:400 for TMP to population and 1:6250, 1:50000, 1:10000, 1:33000 for CMP to population respectively (Abdullahi, 2011). The traditional medicine practitioner is therefore the first point of call in most instances by people for their healthcare needs. Furthermore, the Traditional Medicine practitioners are uniformly distributed nationwide making them most reliable means of achieving universal health coverage.

## **2.2 Policy development on TM**

The exponential increase in consumer demand and availability of services for Traditional Medicine has outpaced the development of policy by governments and health professions (Bodeker, 2001). In 1978, there was a meeting of WHO members at Alma Ata which identified traditional medicine as part of the strategies to attain "HEALTH FOR ALL". The need for a radical development and promotion of Traditional/Herbal Medicine was emphasized by the World Health Organization (WHO) as the surest way of achieving universal health coverage. WHO therefore advised its member states to include Traditional Medicine in their national drug policies and design appropriate national programs, all geared towards formal recognition of traditional medicine. Since 1978 after that meeting at Alma Ata, there has been consistent passing of relevant resolutions and strategies for sustainable development of TM especially in developing countries like Africa (WHO, 1977). According to Akerele (1987), WHO member states have shown varying interests in

the development of traditional medicine and this has resulted in delayed responses to the improvement of the practice.

For instance, a global survey of the WHO member states on traditional medicine policies and regulations carried out in 2001 revealed a response rate of 74% (141 out of 191) member states. Within those who responded, 45 (representing 32%) member states reported having TM/CAM policies. Among the remaining states, 51 (56%) indicate that plans were advanced in developing such policies (WHO, 2005). Couple with this varying interests in the development of Traditional Medicines through appropriate policy formulation that WHO member states have exhibited over decades, is the complexity and dynamic nature of policy and strategies geared toward development of the traditional medicine practice and products (WHO, 2014).

Although member states have shown different level of commitment towards development of Traditional Medicine, a significant progress has been made over the last decades especially when chronic and non-communicable disease is overburdening the public health worldwide (Roberti, 2012).

In Africa, extent of commitments exhibited by the regional members in developing policies and regulations on traditional medicine is tremendous. This is indicated by WHO global survey report which showed a response of 80% (37 out of 46) of countries towards national policies and regulations on TM. Significant numbers of these countries have national offices, research centres and have incorporated TM into national programmes. Notwithstanding these achievements, development of national policies is still faced with a lot of challenges and lack of political will (WHO, 2005). Political commitment exhibited by the governments will reflect in the pace and kind of policies formulated through to effective implementation. Appropriate policies will ensure clearer definition of the role of traditional medicine in national health care delivery. Also standards for research will be made much easier when majority of the

WHO member countries are able to develop national policies with good strategic implementation plan (WHO, 2002).

In Ghana, Successive governments, notably from the time of the first president Dr. Kwame Nkrumah, have shown some level of commitments towards the development of the traditional medicine to meet cultural issues as well as global scientific demand. The government's efforts have led to development of national policies (in 2002), national programme on TM (in 2000), laws and regulations of the Traditional Medicine products (FDB Law-1992), establishment of a Traditional and Alternative Medicine Directorate (TAM-D) under the direction of Ministry of Health in 1999 and establishment of Center for Scientific Research into Plant Medicine (CSRPM) in 1975 to conduct and promote scientific research relating to the improvement of Herbal Medicine in Ghana. A great breakthrough was the enactment of Traditional Medicine practice council (TMPC) ACT 575 in the year 2000, which happened to be the only law standing exclusively for the promotion and control of traditional medicine practice in Ghana. The TMPC is mandated to regulate practice, licensed practice premises and register practitioners. In 2008, a report from the TMPC registrar's office showed about 500 registered Traditional Medicine practitioners and 300 licensed premises providing primary healthcare to the population (TMPC-2008). The main body charged with the responsibility of putting in appropriate mechanism for the integration of traditional medicine is Traditional and Alternative Medicine Directorate (TAM-D). In the traditional medicine policy of Ghana, TAM-D is to coordinate and organize inter-sectoral meetings among all relevant stakeholders to deliberate on issues relating to development and promotion of Traditional Medicine (MOH, 2005).

### **2.3 Research and training needs**

A prerequisite for the successful integration of traditional medicine into health systems for the purpose of primary healthcare provision is the availability and accessibility of safe herbal drugs. In 1983, WHO collaboration centers for traditional medicine strengthened national efforts in research and development (Akerele, 1984). These collaborating research institutes receive both guidelines and scientific information and grants to aid their research into safety and efficacy of Traditional Medicine. For instance, WHO has provided research grants to support clinical research on herbal antimalarials that is being carried out by Kenya's Medical Research Institute, Ghana's National Centre for Scientific Research into Plant Medicine, and Nigeria's National Institute for Pharmaceutical Research and Development (WHO, 2002). As a result by 2010, about 22 countries in Africa were conducting research on traditional medicines for five selected priority diseases namely malaria, HIV/AIDS, sickle-cell anaemia, diabetes and hypertension using WHO guidelines. Subsequently four countries included traditional medicines in their National Essential Medicines Lists (WHO, 2013) and Ghana is an example.

The essential herbal medicine lists developed by the Ghana's ministry of health consist of about 82 finished herbal products from various manufacturers for the provision of primary health care. The criteria for selection of the products is based on valid registration at the food and drugs authority and the effectiveness.

### **2.4 Safety monitoring of herbal products**

To assure and ensure the public health safety, there must be continuous safety monitoring of the herbal products. Pharmacovigilance therefore becomes more relevant with the growing number of consumers in herbal medicine. And in most

cases the Herbal Medicine is being taken for a longer duration treatment of chronic and non-communicable diseases.

Pharmacovigilance is thus defined as ‘the study of the safety of marketed drugs under the practical conditions of clinical usage in large communities’(Mann and Andrews, 2002 as cited in (Shaw et al, 2012). Shaw and colleagues (2012) stated that increasing use of Herbal Medicine is coupled with reports of adverse reactions and toxicity.

Risks associated with traditional medicine could be due to use of poor quality or adulterated products, employing services of unqualified practitioners leading to misdiagnosis and delayed diagnosis and adverse events and side effects (WHO, 2013).

In Ghana, food and drugs authority is in charge of ensuring safety of drugs and foods for human consumption. Currently, only 439 herbal products are with valid registration status (FDA, 2014). But as at 2008, there were 500 registered traditional medicine practitioners and 300 registered premises (TMPC, 2008). Obviously, there are lots of herbal products of which their safety cannot be warranted but available for consumption. The problem even becomes more serious when considering the estimated number of 100,000 traditional medicine practitioners in the nation (Moh, 2006).

About 35 cases of adverse drug reactions resulting from herbal products were recorded from the period 2005-2013 and these largely consisted of gastrointestinal disorders (FDA, 2014). Undoubtedly, issues of under reporting will arise when considering the fact that herbal products are from natural sources and hence are safe.

## **2.5 Education and training**

One of the reasons for China's success in development and promotion of traditional medicine is the incorporation of traditional medicine into its formal education curricula for medical doctors and Chinese medicine practitioners. The commencement of a higher formal training in the field of Herbal Medicine in Ghana began in the late 2001. This is considered to be a major step towards the development and advancement of Traditional Medicine in Ghana.

The program is ongoing at Kwame Nkrumah University of Science and Technology (KNUST) at faculty of pharmacy and pharmaceutical sciences in collaboration with the school of medical sciences. Graduates after four(4) years academic work, are awarded a bachelor of science in herbal medicine (Bsc. Herbal Medicine) and undergo additional two(2) years internship at any recognize facility of relevance to clinical and phytochemistry field. One can only practice as professional when these requirement are met and have duly pass the qualifying professional examination organized by TMPC. So far, the recognized title given to such professionals is Medical Herbalist. The training of scientists in the field of herbal medicine is envisaged to lead to provision of quality, safe, effective and standardized herbal medicine and to ensure smooth integration of herbal medicine into the national healthcare system.

## **2.6 Integration of Herbal Medicine**

In the WHO Global Status Report on non-communicable diseases (2011) it was revealed that integration of Herbal Medicine into mainstream healthcare delivery system will help reduce the increase in the global burden of chronic diseases. Other issues that serve as incentives for effective integration of Herbal Medicine into health systems are socio-cultural acceptability and potential economic benefits.

Also at the WHO Congress on Traditional Medicine in Beijing (2008), Dr Margaret Chan, Director-General of WHO, stated this on integration:

*“The two systems of traditional and Western medicine need not clash. Within the context of primary healthcare, they can blend together in a beneficial harmony, using the best features of each system, and compensating for certain weaknesses in each. This is not something that will happen all by itself. Deliberate policy decisions have to be made. But it can be done successfully”.*

Recently, WHO had revised its strategy towards incorporating Traditional Medicine into national healthcare. This strategy is within a stipulated time of 2014-2023 after the first ever traditional medicine strategy 2002-2005. The three objectives of the WHO Traditional Medicine strategy 2014-2023 are:

- 1) Building the knowledge base and formulating national policies;
- 2) Strengthening safety, quality and effectiveness through regulation; and,
- 3) Promoting universal health coverage by integrating traditional and Chinese medicine (T&CM) services and self-health care into national health systems.

Hyma and Ramesh (1994) defined Integration as a process of incorporating traditional medical practices into the formal health service. Process refers to the way in which policies are initiated, developed or formulated, negotiated, communicated, implemented and evaluated (Buse et al, 2012). As a result three levels of integration have been classified by World Health Organization. These are integrative system, inclusive system and tolerant system (WHO, 2002).

In an **integrative system**, Traditional Medicine is fully incorporated into the country's healthcare system. A country is said to attain this system of healthcare

when Traditional Medicine is included in its relevant national drug policy, regulatory body to register Traditional Medicine products and practitioners exist, presence of formal education in Traditional Medicine, research and development of Traditional Medicine undertaken, Traditional Medicine services present at both public and private health facilities and treatment covered under national health insurance. Notably, countries like China, the Democratic People's Republic of Korea and Viet Nam are considered to have attained an integrative system.

In China for instance Integration was guided by health officials trained in modern medicine; harmonisation with modern medicine was the goal. This was accomplished by a science based approach to the education of traditional Chinese medicine and an emphasis on research. Both were supported by a substantial organisational infrastructure (Bodeker, 2001). China included policy on its traditional medicine in its constitution since 1949. This is evident in the extent of promotion and development of Chinese traditional medicine we see currently in the whole world. As at 2002, China is having about 170 national and state research institutes on traditional Chinese medicine. Also China has an effective state administration on its traditional medicine and formal training to medical doctors and other health professionals. This has really helped in demystifying the wrong perception that each system of healthcare has on the other. There is also Chinese medicine pharmacopoeia that contains extensive list of medicinal plants. Services of traditional medicine are available at hospitals and treatment reimbursed under the national health insurance (WHO, 2002).

Ghana is gearing towards this type of integrative approach by the establishment of Center for Scientific Research into Plant Medicine (CSRPM), Traditional and Alternative Medicine directorate (TAMD-MoH), Traditional Medicine Practice Council (TMPC), incorporating Traditional Medicine into national policies and a

formal degree education at Kwame Nkrumah University of Science and Technology (KNUST).

For the **inclusive system**, there is partial integration of traditional medicine into the nation's healthcare systems. Traditional Medicine is not in all the national health systems. Countries classified under this system have ongoing national policy regulation on traditional medicine practice, health insurance coverage, development of research institute and plans for formal education. Examples of countries under this system include Nigeria, Mali, Canada etc.

In countries with a **tolerant system**, the national health care system is based entirely on conventional medicine, but some TM/CAM practices are tolerated by law.

In Africa and other developing countries traditional medicine popularity is attributed to its ease of accessibility and affordability couple with its cultural acceptability. This is manifested in the ratio of traditional healers to population in Africa being 1:500 whereas that of ratio of conventional doctors to population is 1:40 000 (Abdullahi, 2011). A great potential of improving the population health status therefore exist in traditional medicine when the necessary infrastructure is put in place. This will help ensure health equality among different classes of individuals with the focus on rural and disadvantaged people.

## **2.7 Economic Implications**

Huge market share exist for herbal medicine. The annual rate of demand for medicinal herbs is about 15-25% (Booker et al, 2012). Potential cost savings and revenue generation are an important reason for governments to opt for traditional medicine. Recent study indicates that patients whose general practitioner has additional complementary and alternative medicine training have lower health care costs and mortality rates than those who do not (Kooreman et al, 2012). The study

further added, reduced costs were the outcome of fewer hospital stays and fewer prescription drugs. This obviously will lower the total health expenditure by the government and as a result make available additional resources for other developmental agenda.

Although it is difficult to fully estimate the market share of herbal medicine due partly to improper regulation, Republic of Korea annual expenditure on TM has risen from US\$4.4billion in 2004 to US\$7.4billion in 2009 (WHO, 2012). Nahin et al (2009) also estimated that in United States of America, personal expenditures on products of natural origin were about US\$14.8billion. Another cost estimation study on Herbal Medicine carried out in Saudi Arabia, estimated an individual expenditure on natural products of US\$560 per annum (AlBedah et al, 2013).

Currently there is no such study in Ghana to estimate the economic impact of herbal medicinal products and this can affect government's decision making with regard to integration of herbal medicine into the healthcare system. But with the worldwide estimate by WHO, it is expected that by 2050 the trade will be up to US\$ 5 trillion (WHO, 2006).

## CHAPTER THREE METHODOLOGY

### **3.0: Introduction**

In this chapter, the general approach and specific techniques adopted to achieve the stated objectives of the study is made mention of. It also presents information on measures taken to ensure collection of quality data and how analysis of the data was carried out. It highlights ethical issues and concludes with the limitations of the methodology employed in the conduct of the study.

### **3.1: Type of Study**

This was a cross sectional study which employed both qualitative and quantitative approach conducted among patients and providers at herbal unit of LEKMA hospital and policy-makers at the Ministry of Health.

### **3.2: Study Area**

The study was conducted at Ledzokuku-krowor municipal assembly hospital (LEKMA HOSPITAL). The Ledzokuku-Krowor Municipal Assembly is one of the ten (10) districts in the Greater Accra Region of Ghana. Its capital is Teshie-Nungua. The district is among the new districts and municipalities created in 2008 by the then President, John Agyekum Kufuor. The Municipality shares boundaries with La Dade-Kotopon Municipal to the west, Tema Metropolitan to the east, to the north with Ashaiman municipal and to the South with the Gulf of Guinea (fig.2).



*Figure 2: Geographical location of the study area (LEKMA hospital)*

LEKMA hospital is a beneficiary from Ghana-China collaboration. The hospital is well equipped with about hundred (100) beds and has the following departments: Out Patients Department (OPD), Maternity (Ante-natal and family planning), Dental, Eye, Laboratory, ENT (Ear, Nose and Throat), X-ray/Ultrasound scan, Dermatology and Herbal departments. The hospital currently has staff strength of sixteen (16)

Medical Doctors including eight (8) specialists plus three others on houseman ship, about ninety-five (95) nurses, and about hundred and ten (110) health extension workers, with average attendance at the OPD of 200 clients per day.

The herbal unit of the hospital started operations since 2011. The unit provides Herbal Medicine services and some other components of complementary and Alternative Medicine therapy (acupuncture and massage). On average, 2-4 patients visit the unit daily. 260 patients attended the herbal unit from January to March, 2014 and 109 patients recorded within March to May, 2014 (LEKMA, 2014). The herbal unit is under the central management of the hospital. The composition of the staff at the herbal unit include: three (3) medical herbalists (trained professionals), a nurse, and a dispensing technologist and massage therapist.

### **3.3: Sampling**

#### **3.3.1: Study population**

The study participants are categorised into three different groups namely Patients, Providers and Policy-makers.

The Patients consisted of those who had attended for Herbal Medicine services at LEKMA Hospital within the last three months (March to May, 2014) prior to the commencement of the study and age not less eighteen (18) years. The three months duration of March to May, 2014 was to enable the patients give clear and vivid information with regard to their experience at the herbal unit of the hospital to avoid information bias. The March to May, 2014 duration was also appropriate since it was within this period that the attendance at the unit declined from 260 clients (from January to March, 2014) to 109 clients (from March to May, 2014) and it was therefore necessary to find out why the sharp decline in attendance. The age of 18 years and over was for the ease of acquiring informed consent from the patients since

that is the legal age for one to take decision independently as stipulated in The Constitution of The Republic of Ghana.

Providers consisted of the staff providing services at the herbal unit and the management of the hospital. The number of clinical staff at the unit is six (6) in numbers with three Medical herbalists, a nurse, a pharmacist and massage therapist.

Policy-makers included some key institutions charged by the government of Ghana with the responsibility of policy formulation and policy implementation as far as development and safety assurance of traditional medicine in Ghana are concern. These institutions are Traditional and Alternative Medicine directorate at the Ministry of Health (TAMD-MOH) and Food and drugs authority.

### **3.32: Sample size**

There was no need for sample size estimation for the quantitative approach since the whole sampling frame (Patients attendants from March to May, 2014) was selected.

For the qualitative approach, the sample size was based on the concept of saturation. As the study participants (clinical staff of the herbal unit) were interviewed, a point was reached where new data collected no longer reveal additional insights to the stated objectives. At this point the interview was discontinued. This is because only one occurrence of a piece of information is all that is necessary for analysis (Mason, 2010).

### **3.33: Sampling method**

The quantitative approach was used to assess the patients' level of knowledge on safety of herbal medicine and their perception on the integration of herbal medicine services into the mainstream healthcare at LEKMA hospital. There were 109 patients attendants at the herbal unit of the hospital (from March to May, 2014) and out of

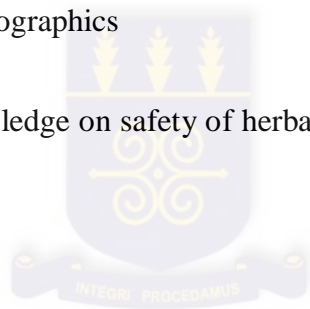
this, 15 were below the age 18 years. The whole of the remaining 94 patients were supposed to participate in the study.

For the qualitative approach, purposive sampling method was used to recruit study participants. These include key personnel from the Providers and Policy-makers categories for an in-depth interview. The primary objective was to achieve an understanding of the challenges facing the integration of herbal medicine into the healthcare delivery system from the perspective of the providers and the policy maker.

### **3.4: Variables**

Independent: education of patients on herbal medicine use, resource availability and accessibility, workable policies, presence of herbal products and inclusion of herbal medicine into NHIS, demographics

Dependent: level of knowledge on safety of herbal medicine, effective integration of herbal medicine.



### **3.5: Data collection technique**

Various approaches were used to collect data for analysis. Desk reviews including minutes on previous meetings regarding the integration of Herbal Medicine were carried out. Letter composed of set of questions related to the pharmacovigilance of herbal medicine was sent to food and drugs authority for response.

For the quantitative approach, a structured questionnaire was used to telephone interviewed the patients to answer question on the variables perception on the integration of herbal services at the hospital and knowledge on safety of Herbal Medicine. Telephone interviews are accepted mode of data collection(Novick, 2008) and more appropriate and convenient considering the difficulty in reaching to a

patient face to face to get an appreciable number within the limited time for data collection. Provision was made for subjects who cannot speak English by having a research assistant who is well eloquent in GA, since that is the most spoken language in the area. Among the 94 patients, 87 responded and answered the questionnaire, 3 responded but refused to participate and efforts to reach the remaining 4 were not successful.

For the qualitative aspect, an interview guide was used to conduct an in-depth interview of study participants from the ‘policy-makers’ and ‘providers’ to further explore the constraints associated with the integration of Herbal Medicine. English language was used as the medium of communication. The interview guide was developed based on themes to answer research question on the challenges facing the integration of herbal medicine into national healthcare using LEKMA hospital. The interviews were recorded using a digital voice recorder in addition to the note-taking. Non-participant observation was also done during my visits to the hospital to observe the procedures and how patients are taken care of.

### **3.6: Data collection tools**

A structured questionnaire was used to interview the patients using telephone. An interview guide was the tool for collecting data for the qualitative approach. The interviews were recorded using a digital voice recorder and notes were also taken on paper.

### **3.7: Data analysis**

For the quantitative approach data was entered using SPSS ( statistical package for social sciences) software version 20 and analysis carried out using Stata v11. Descriptive analysis was done to summarise baseline characteristics of the

demographic factors, dependent and independent variables. Results were presented using proportions /percentages and mean.

For the qualitative approach data was analysed by coding responses from the interviews. Thematic content analysis was done by developing themes and patterns with the aid of NVivo7, a qualitative data analysis software.

### **3.8: Ethical consideration**

This study sought approval from the ethical review committee of the Ghana health service and was granted. Permission was also sought from the LEKMA hospital management and the clinical staff of the herbal unit. The study was explained to the potential participants in the language they understood well and their questions were answered. For the participants included in the qualitative approach, they were informed that the interview will be recorded and will be kept for sometime but they were assured of strict confidentiality. For the participants included in the quantitative approach, informed consent was sought orally on the telephone.

### **3.9: Quality Control**

The definition of key terms in the structured questionnaire for the telephone interview of patients was made to ensure uniformity in responses. Herbal medicine was defined as concoction made from the plant parts and adverse effect as any untoward effect as a result of intake of the herbal medicine. Double data entry was done by two independent people to ensure the data entered is correct.

Each day's work was reviewed and potential problems addressed. Research assistants were supervised during data collection of telephone interviewing. Filled-in questionnaires were checked for completeness and in the case of missing data, interviewers were requested to recall respondent to obtain the data. The questionnaires were numbered before data entry and analysis and subsequent safe keeping.

One of the clinical staff at the herbal unit of the hospital helped during the patients telephone interviews by introducing the study and assuring confidentiality. This was done to ensure maximum cooperation by the patient and therefore reliable information to minimise information bias.

### **3.10: Limitations of the study**

The study on integration of herbal medicine into national healthcare delivery system of Ghana using LEKMA hospital as case study was undertaken in only one of the 13 pilot centres. Although the additional qualitative data may help Actors in the herbal industry to appreciate the current challenges facing the integration, the finding cannot be generalized to other centres in other regions of Ghana. However the findings are useful for management of LEKMA hospital and for stimulating research in the issues identified for future development.

### **3.11: Pretesting**

A pretesting was carried out by administering questionnaire at a Police Hospital in Accra. Police Hospital is among the hospitals that the integration of Herbal Medicine into national healthcare system had taken place. The pretesting identified the strengths, weaknesses and validity of the questionnaire and necessary adjustment were therefore made.

## CHAPTER FOUR

### RESULTS

#### **4.0: Introduction**

This chapter presents the findings of the study in relation to the stated objectives. The characteristics of study participants and other relevant variables regarding the integration of herbal medicine were presented. Here the specific mention of a study group is also to signify the methodological approach being used. For instant, patients will also imply quantitative approach methodology and either providers or policy-makers will also imply qualitative approach methodology.

#### **4.1 Demographic characteristics of the study participants**

Out of the ninety-four (94) questionnaires administered, eighty-seven (87) patients responded giving a response rate of 92.6%. Of the 87 patients who responded, majority of them were female with 66.7% representation while the remaining were males (33.3%). The mean age of the patients was approximately  $46.4 \pm 15.3$  years with the age groups 36-45, 46-55 and 56 and over representing 28.7%, 21.8% and 26.4% respectively (fig 3).

Almost all of the respondents were living closer to the geographical location of the hospital, in the towns of Teshie and Nungua. About 92% were belonging to Christian religion while the remaining 8% in Islam. Majority of the patients respondents have means of earning income either as traders (23%), self employed (27.6%) or employed by others (24.1%). The remaining 25.3% represents the unemployed respondents and is largely consisted of those on retirement.

Most of the patients have attained educational level at least from secondary level and beyond (59.8%) with few ones who have never attended any kind of formal education (10.3%).

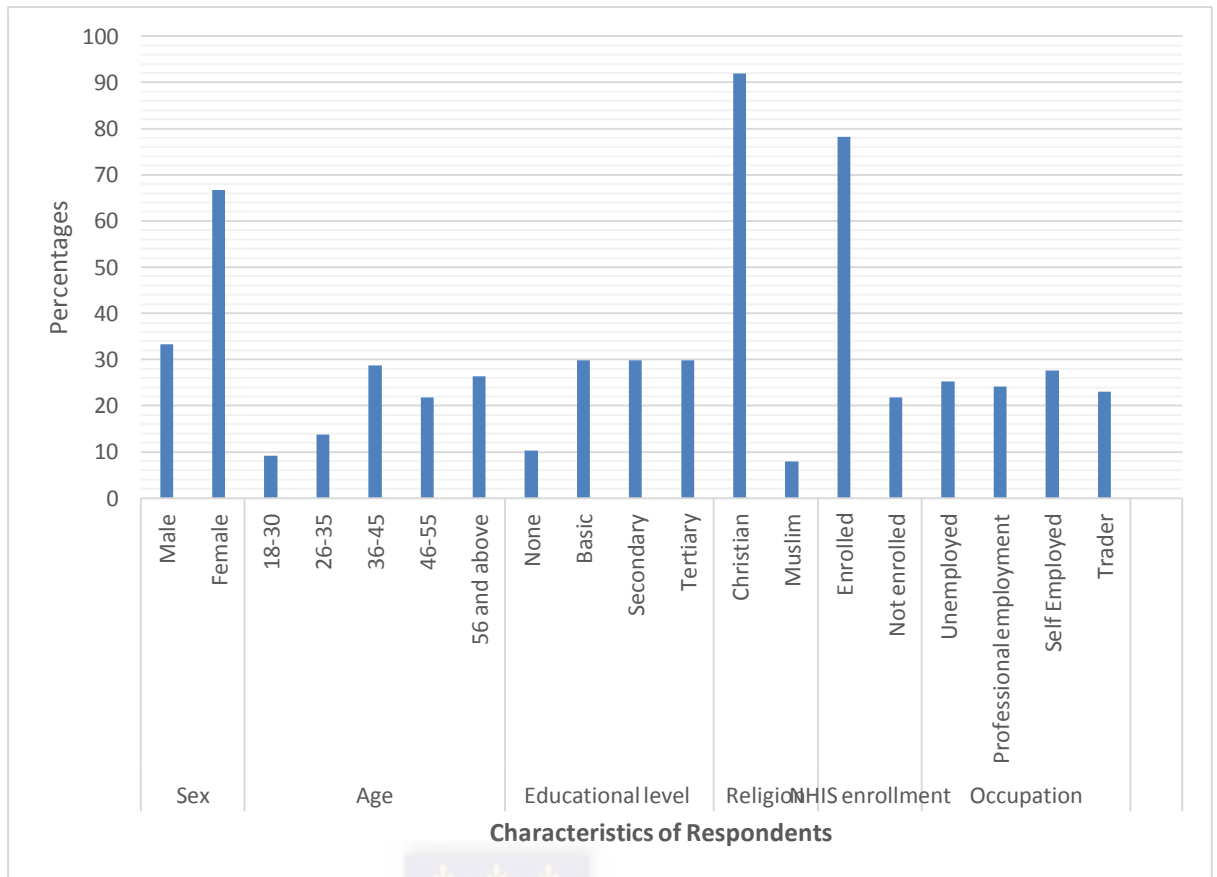


Figure 3: Demographic characteristics of patients for quantitative approach

For the qualitative study participants (providers and policy-makers), gender distribution was equal with 3 females and 3 males. It is worth to note that, equal gender distribution was not part of the criteria for selection. The numbers of providers involved in the interviews were 5 and one key policy maker was included. The minimum working years of experience was more than 1 years and the maximum above 5 years. Each participant has the qualification appropriate for his/her job (table 1).

**Table 1:** Demographic characteristics of study participants for the qualitative approach

<b>Interview ID No</b>	<b>Sex</b>	<b>Institution</b>	<b>Qualification</b>	<b>Years of Experience at The Institution</b>
<b>01</b>	F	LEKMA hospital	Bsc. Herbal Medicine	Since the start of the herbal unit in 2011
<b>02</b>	F	LEKMA hospital	Bsc. Herbal medicine, MBA	One and half years
<b>03</b>	F	LEKMA hospital	Nursing officer	Since the start of the herbal unit in 2011
<b>04</b>	M	LEKMA hospital	Pharmacy technologist (HND)	Since the start of the herbal unit in 2011
<b>05</b>	M	LEKMA hospital	Senior health service administrator (MBA)	Five years
<b>06</b>	M	Ministry of Health	Policy-maker	More than 5 years

#### **4.2: Perception on integration of herbal medicine into healthcare system**

Generally patients have a very good perception on the integration of herbal medicine at LEKMA hospital. About 94% of the Patients respondents think that the services of the herbal unit at the hospital are important (table 2). A provider explained her views on why patients/clients should welcome the introduction of herbal medicine into the existing healthcare system.

**Table 2:** Patients perceptions on herbal medicine services at the herbal unit. (N=87)

Response	Frequencies	Percentage (%)
<b>How many times have you visited the herbal unit</b>		
Once	25	28.7
Twice	18	20.7
Thrice and above	44	50.6
<b>Through which medium did you get to know the herbal services?</b>		
Radio and T.V	23	26.4
Announcements at the hospital	24	27.6
Family and friends	38	43.7
Signboard in front of the unit.	2	2.3
<b>Were the staff welcoming?</b>		
Yes	85	97.7
No	2	2.3
<b>How was the outcome of your treatment?</b>		
Fully recovered	72	82.8
Partially recovered	11	12.6
Poor	4	4.6
<b>Relative cost of herbal products compared to orthodox medicine</b>		
Expensive	16	18.4
Normal	65	74.3
cheaper	6	6.9
<b>Is the presence of the herbal unit in the hospital needed?</b>		
Yes	82	94.3
No	5	5.7
<b>Do you think the services at the unit should be improved?</b>		
Yes	56	64.4
No	31	35.6

She emphasized on public health safety and that patients can now be assured of quality, safe and efficacious medicines for their health needs. The following excerpt describes it:

*“The integration provides safe quality herbal medicine to clients, whereas previously clients will have to go to herbal medicine practitioners whom they could not guaranteed their professionalism or quality of health care they will be getting.”* (a provider-LEKMA hospital)

The integration of herbal medicine at LEKMA hospital provides healthcare options to patients. A patient who is aware of the herbal medicine services at the hospital can opt for such form of healthcare and even in some cases Medical Doctors trained in allopathic medicine refer patients to the herbal unit.

*“So one thing that it is helping is that, is giving the patients healthcare options to choose and at the same time it allows the orthodox Doctors to be able to refer some of the cases that they feel orthodox treatment cannot meet or cause delay in treatment”* (a provider at LEKMA hospital)

Findings also revealed about 74% of patients being excited about their health outcome after attending the herbal unit with very few people (4%) having deteriorating symptoms.

### **4.3: knowledge on safety of herbal medicine**

#### **4.3.1: Safety awareness of herbal medicine**

Among the patients who participated in the study, 77 out of the 87, representing 88.5%, believed on the statement that herbal medicine is natural and therefore 100% safe (as shown in table 3). Also 76 out of the 87 patients, representing 87.4%, indicated that they had never experienced any side effect resulting from intake of herbal products. Of these 76 Patients, 59.2% think that herbal products do not have any side effects whiles the remaining 40.8% think the opposite (table 3).

A provider is of the view that, patients do not usually report any side effect because they usually compare the benefit-risk ratio. If the patient health state improves as a result of the herbal medicine intake, he/she will consider the untoward effect experienced as insignificant.

*“And if the client doesn’t really complain about some of these things sometime they think is sort of a risk-benefit assessment. And overall they are relieved of the complains that they came with initially and this was just a minor side effect”(a provider, LEKMA hospital”*

**Table 3:** Patients knowledge on safety of herbal medicine

Response	N	Frequency	Percentage (%)
Opinion on statement	87		
<b>‘herbal medicine is natural and therefore 100% safe’</b>			
Agree		77	88.5
Do not agree		10	11.5
<b>Which one best describes your use of herbal medicine?</b>	87		
At least once a month.			
When prescribed for by a practitioner.		48	55.2
		39	44.8
<b>Have you ever experienced side effect after taking herbal products?</b>	87		
Yes		11	12.6
No		76	87.4
<b>Do you think herbal medicine can cause side effects?</b>	76		
Yes		31	40.8
No		45	59.2
<b>Do you think the side effect is as a result of the herbal product?</b>	11		
Yes		8	72.7
No		3	27.3
<b>Did you report your experience to anyone?</b>	11		
Yes		2	18.2
No		9	81.8

#### **4.32: Safety monitoring of herbal medicine**

Among the objectives of the integration of herbal medicine into healthcare system is to ensure safety of the product.

*“The integration is part of government effort in ensuring safety of herbal medicine”*

(a policy-maker, MOH)

The situation looks different at the hospital, and there seems not to be any effort in ensuring the safety of the herbal medicine. There was no conscious mechanism in enquiring from Patients the potential adverse effect that could result from the intake of the herbal product. A provider says:

*“.....but maybe we have not really focused on asking them if they had experience any side effect before. So maybe is something we need to add to what we are doing.”*

Among the respondents, 11 out of the 87 patients indicated they had experienced some form of side effect post herbal medicine intake. Willingness to report these incidents is not encouraging. Of the 11 patients who claimed they had experienced the side effects, only 3 said they had reported to their healthcare provider.

#### **4.4: The critical challenges**

##### **4.41: Shortage of drugs**

Most of the herbal products used at the hospital are purchased from Centre for Scientific Research into Plant Medicine (CSRPM). Very few products are being purchased from private manufacturers.

Availability of the herbal products in sufficient amount at the hospital was identified as another main challenge facing the herbal unit among all the providers interviewed.

*“The issue with the drugs is a major one”* (a provider at LEKMA)

The Patients respondents are also of the same view. Among the 56 patients who think the services at the herbal unit of the hospital should be improved, almost half of them (42.9%) have issues with drugs availability (table 3).

However, the study participants (providers) are of different opinions with regard to the root cause of the incidence of the drug shortages. Some think that the procurement processes is a factor and that sometimes it takes long time to get the products. Delays in releasing money to purchase the product on time occur as a result. This contribute to the situation in that some kind of deposit of the total amount is required by the manufacturers of the herbal products before the consignment are given. Also manufacturer's inability to make available the needed products at the right time is contributing to this drug shortage situation

*“And sometimes there is a bit of bureaucracy as to getting the cheque to go and purchase the medicines. Usually in a government facility like this, people will supply before maybe give a period of 3 months before they come for their money. But with CSRPM , they want their money upfront”* (A provider, LEKMA hospital)

*“Other time you get there they don't even have the product that you want. So that's the major thing.”*

It was realised that, the persistent incidence of drug shortage is significantly affecting Patients turnout. A provider says:

*“.....but now the attendance is coming down because we do not have enough stock of medicines to serve patients.”*

#### **4.42: Publicity leads to Patronage of the herbal unit services**

Obviously clients need to be informed through an appropriate medium before they could think of attending for the services of the herbal unit, since it is new government initiative.

Generally one most important factor affecting Clients patronage of the herbal unit is that of publicity. Study participants are of the view that a lot more in terms of publicity needs to be done.

*“Well the patient attendance is getting better. We recently embarked on radio and television talk shows and that had increased the attendance say by 30%.”*

(A provider-LEKMA)

*“The way we were expecting a lot of numbers to increase in the unit, we are not really getting that. And I think perhaps we are not doing much publicity that is why.”*

The channels through which the hospital uses to create awareness of the presence of herbal unit in the hospital include: announcement made at the out-patient department (OPD), signboard in front of the unit’s entrance and some occasional radio and television programmes which started recently. Among the patients who participated in the research, about 43.7% get to know about the presence of the herbal unit through family and friends, 27.6% through announcements made at the OPD, 26.4% through radio and television programs and 2.3% through the signboard in front of the unit’s entrance (table 3).

Majority of the patients (44%) have attended for the services of the herbal unit more than twice, with 25% attending only once. Most patients were very happy with their health outcomes.

#### **4.43: The need for research and development**

The need for research is crucial but is faced with drawbacks. It was revealed that collaboration between the two parties (the scientists and traditional medicine practitioner) is not smooth. Most TM practitioners do not have any formal education.

Even the educated practitioners do show some kind of resistant with the scientists, which further worsen the problem. A policy-maker explained

*“.....when science is applied to the natural knowledge the results is always better than the indigenous one, that one is difficult to accept by some of the indigenous people as well as some of the educated people among them”*(policy-maker, Moh)

Reasons for lack of research span from the TM practitioner, the research scientist and the government. The practitioner still believes in the spiritual processes leading to effectiveness of the remedies.

*“Some think that without the magical religious aspect, the herbs will not work, they work with magic”*(policy-maker, MoH)

The research scientists are also reluctant and do not show much interest in the area of herbal medicine development and promotion

*“Sometimes the scientists feel that it will not be beneficial”*

The situation is not like there is no single research on herbal medicine. Some works have been done but these works are done independently and findings dispersed. No conscious effort to coordinate these researches. This was clear in the response of one policy-maker

*“Everyone does something of interest but we don't bring them together..... no one is reading in between it to say that we have got something in there that can be made special”*

#### **4.44: Relationship between herbal staff and orthodox staff**

The kind of relationship between the herbal staff and other unit of the hospital is improving. The situation was different at the initial stages of the integration.

Although some of the orthodox staff still show some kind of indifference towards the integration of herbal medicine at the hospital, others welcome it.

*“But some way somehow there are some individual practitioners like Doctors and Nurses who are not personally into herbals, sometimes they tried to frame or not to accept the system but we have some Doctors who feel free when client come and they want herbal medicine they freely refer them to us and even sometimes they prescribe some drugs like antihypertensive drugs that we have.”* (a provider)

#### **4.5: Processes prior to the integration**

Before the introduction of herbal medicine services in the hospital, the strategy was to create awareness among the health workers especially those at the decision making level. Whether this was properly done is another thing. The controversy comes as a result of the response from a policy maker against that of a provider. The following were the responses:

*“We started first with capacity building, doing lectures to the medical superintendents and physician specialist as well as physician assistant group. Some were sent on study tours to china to see the two systems, how they can work together.”* (A policy-maker, MOH)

*“we were just asked to come to the hospital without any appointment letter. The hospital was even ignorant of our capabilities. Gradually they are seeing what we are capable of doing”* (a provider-LEKMA hospital)

Hospital preparedness and management arrangements to ensure smooth integration form part of the processes towards integration, as stipulated in the operational guideline for the integration of herbal medicine. The operational guideline, among

other policy documents related to traditional medicine, is developed by the ministry of health through the traditional and alternative medicine directorate.



## CHAPTER FIVE

### DISCUSSION

#### **5.0: Introduction**

Safe and effective utilization of herbal medicine for the public health needs is essential for consideration by various governments especially in the developing countries like Ghana. The integration of this system of healthcare into the well recognized orthodox system will ensure sanity and assure public of quality and safe herbal products.

The study seeks to assess the constraints facing the integration of herbal medicine into national healthcare particularly at LEKMA hospital. Different viewpoints were considered from the angle of the policy maker, the providers at the herbal unit and the patients perception about the herbal unit at the hospital.

#### **5.1: Demographics**

Patients are the end users of the herbal products and therefore to some extent the success of the integration will depend on how satisfy they are in terms of their health outcomes. The study revealed higher prevalence of use of herbal medicine among women and persons aged 35years and over. Similar trend was seen in a study carried out in the united states of American(Ni, 2002). A number of studies have found predominance of women in the utilization of herbal medicine. Reasons with this trend in utilization is still not clear, but we know that women usually tend to be health conscious compared to their counterparts males(Hu et al, 2013; Little, 2009).

Most of the patients enrolled on national health insurance scheme. At the herbal unit of the LEKMA hospital, services that NHIS cover other than the purchase of drugs and acupuncture therapy are reimbursed. This probably could be an additional explanation of why majority of the patients were having valid NHIS card.

Most the patients are above the age of 35 years. One major reason for high demand of herbal medicine is the epidemic of chronic non-communicable diseases. This epidemic is usually common among the demographic ageing population(WHO, 2011.).

### **5.2: Views on services of the herbal unit**

The patients think the integration of herbal medicine services at LEKMA hospital is in the right direction. It is known that, about 70% of Ghana's population utilises herbal medicine. This view point by the patients was therefore expected. In contrary to the perception that one reason for seeking herbal medicines is because is cheaper compared to orthodox medicines, only 6% of 87 patients attested to this. Majority think that the herbal products prices are comparable to the orthodox medicines. The perception of cost of products by the patients could even be of larger magnitude assuming majority of the patients who participated do not have any form of living. Even though there are certain conditions that cost less using herbal medicine to treat compare to orthodox, some studies have shown that in most instances the relative cost in treatment using herbal medicine might be similar or even more expensive compared to that of orthodox medicine (Muela, 2000).

### **5.3: Public health safety**

Patients who responded to the study have shown minimal understanding of safety of herbal medicine. It follows the global perception regarding herbal medicine safety. Consumers of herbal products are of the view that herbal medicine is 100% safe because is of natural origin. This assertion can lead to serious complications especially when the adverse effect experienced takes a long time to develop(Pirmohamed et al., 2004). Among the 11 patients who reported they had experienced side effects of herbal products, only 3 thought it was necessary to complain to the health provider.

This kind of unwillingness of patients to report leads to under reporting. The reason for this unwillingness could best be explained by a provider's view point:

*“they think is sort of a risk-benefit assessment. And overall they are relieved of the complains that they came with initially and this was just a minor side effect”*

The study also revealed minimal efforts on the part of the providers to acquire information from the patients with regard to potential toxicity from the herbal products. Generally, patients are reluctant to report, providers perhaps lazy to enquire and the pharmacovigilance unit inefficient.

The pharmacovigilance unit at food and drugs authority had identified under reporting of adverse effect due to herbals as a biggest challenge but has not shown any effort towards it. This was revealed during the interview with the providers, where they seem ignorant of the pharmacovigilance unit activities. If at this hospital, systems are not in place to investigate and gather complains of adverse reactions from the herbal products being used: what will be the situation in the private herbal clinic/hospital.

The argument is not to say herbal medicine is dangerous but to emphasise the need for safety monitoring of herbal medicine. It is through this that herbal medicine can prove its potency, efficacy and safety. The integration of herbal medicine into the formal healthcare system thus provide the opportunity for researchers and clinicians to erase any misconception towards traditional medicine through this kind of monitoring(Zhang et al., 2012).

#### **5.4.: The Constraints to Smooth Integration**

##### **5.41: Antagonism**

The integration of herbal medicine into national healthcare system requires that both orthodox medical practitioners and herbal medical practitioners work in harmony devoid of any animosity. Studies have shown the antagonistic behavior of some orthodox medical practitioners towards incorporation of herbal medicine into the healthcare system(Osemene, 2011).

The relationship between the herbal staff and the orthodox medicine staff of the hospital is not a bad one at the LEKMA hospital. The study indicated some minimal level of resistance especially from the medical officers. This kind of reaction usually is a result of the personal views of the person and not related to the hospital as a whole. The context within which the hospital was established was to incorporate herbal medicine and alternative medicine into its services. From the look of things, this has really help in nurturing good relationship between the two professionals to some extent. Even though this is a good indication towards effective integration, measures need to be put in place to avoid any future misunderstandings that could hamper the progress of the integration.

##### **5.42: Shortages of drugs**

Both providers and patients identified recurrent herbal products shortages at the hospital as major challenge. The drug shortages have numerous ramifications. Patients attendants significantly dropped as a result perhaps due to feelings of disappointment of not getting drugs for their health conditions. Patients value their drugs more than anything in the health facility and therefore availability of such will result in trust and full participation in the herbal services rendered.

Issues related to the drug shortage are in twofold:

1. Failure on the part of the hospital management to release fund at the appropriate time for the purchase of drugs.
2. Failure on the part of the herbal products manufacturers whose products are part of the essential herbal list to meet the demand of the hospital.

The second issue is of great concern. This brings the question of whether the integration can really be sustained. With this few number of hospitals nationwide, one will imagine the magnitude of this drug shortage if the integration goes nationwide without a solution to this drug shortage.

This clearly is a sign of lack of proper planning towards the commencement of the integration. The irregular drug availability is a greater challenge on how effective the integration program is compared to even lower patients turnout.

Perhaps sources of herbal products were not adequately assessed to check whether it can meet demands. Moreover, apart from the major supplier of the herbal products (center for scientific research into plant medicine), all the other manufacturers are indigenous people without proper appreciation of the modern pharmaceutical methods. Involvement of the local pharmaceutical companies through the efforts of the ministry of health will therefore be beneficial. But this has to be done with the intention of ensuring some kind of collaboration between the pharmaceutical companies and the herbal products manufacturers. So that it will be a win-win situation for the parties involved.

#### **5.43: Publicity**

Creation of awareness of the introduction of the herbal services will inform the public and as a result increase the attendance. The providers have stated that there is no much publicity and they are very certain that, when this is done properly the

attendance will increase. Currently the attendance is not good and this can lead to the failure of the integration program if proper measures are not put in place. There are tested media of relaying information like the television and radio, these media have proven to give result as was said by the providers themselves. Whenever they embarked on such media advert, patient attendance increased.

### **5.5: Policy implications**

Traditional and Alternative Medicine Directorate (TAMD) is the body, under the Ministry of Health, responsible for ensuring continuous development and promotion of traditional medicine through design of appropriate policies to suit the Ghanaian context. The directorate is to coordinate all activities related to the industry. Several policies and guidelines relating to traditional/herbal medicine have been prepared for the practitioners and other stakeholders.

The Ghanaian context in the development of traditional medicine is quite similar to other developing countries. Much interest in traditional medicine was necessitated as a result of the Alma Ata declaration in 1978 in achieving HEALTH FOR ALL, to all WHO member states. Governments' efforts have led to establishment of institutions in this regard. Issues of quackery have been identified as a result of high public interest in traditional/ herbal medicine. Recognized traditional medicine practitioners association such as Ghana Federation of Traditional Medicine practitioners (GHAFTRAM) do exist to provide safe traditional medicines.

The content of the policies targeted at improving traditional medicine practice is appropriate in most cases but the biggest challenge is lack of passion exhibited by the policy-makers and other research scientist. This has resulted in low level of public education on the integration of herbal medicine into the national healthcare as well as insufficient energy to push the agenda further to gain much support from other

stakeholders. Lack of passion can lead to uncoordinated research in the area and formulation of policy with right content but which lacks direction.

For instance, Ghana traditional medicine strategic plan was adopted within the period 2001-2010 with the main focus of integration of herbal medicine into national healthcare system, among others. But this strategic plan lacks direction and time-bound objective of government commitment and therefore becomes difficult to effectively evaluate the outcome.

Appropriate policy formulation and conscious effort by government is needed for the safety of the public with the right people to lead.



## CHAPTER SIX

### CONCLUSIONS AND RECOMMENDATION

#### 6.1 Conclusion

- There was a high utilization of herbal medicine among the women compared to men and also among patients aged 35 years and over.
- Patient's knowledge on safety of herbal medicine was very low
- Recurrent drug shortages, inadequate awareness creation, research gaps due to uncoordinated research and lack of directional leadership were some of the major challenges that could hamper the progress of the integration.

#### 6.2 Recommendations

- There is the need to promote collaboration between the traditional medicine manufacturers and the modern pharmaceutical companies, to ensure application of modern science from the cultivation of raw materials through to finished products. This collaboration will also lead to more convenient dosage forms like capsules and tablets.
- The ministry of health through the traditional and alternative medicine directorate will have to engage the public more in creating awareness of the herbal services and more importantly educating them on potential toxicity of herbal medicine.
- Committed and passionate leadership is needed at the governmental level to ensure the sustainability of the integration initiative.
- Reputable Institutions like the School of Public Health (University of Ghana) should show much interest by scientific forums or conferences to gather past researches regarding traditional medicine.

- There is the need for further research to investigate how best standard protocol can be set for the herbal products to ensure their introduction into the national health insurance scheme.



## REFERENCES

- Abdullahi, A. A. (2011). Trends and Challenges of Traditional Medicine in Africa. *African Journal of Traditional, Complementary, and Alternative Medicines*, 8(5 Suppl), 115–123. doi:10.4314/ajtcam.v8i5S.5
- AlBedah AMN et al. The use of and out-of-pocket spending on complementary and Alternative Medicine in Qassim province, Saudi Arabia. *Annals of Saudi Medicine*, 2013, 33(3):282-289 (<http://www.annsaudimed.net/index.php/vol33/vol233iss3/576.html>).
- Akerele, O. (1984). WHO's traditional medicine programme: progress and perspectives. *Who Chronicle*, 38(2). Retrieved from <http://www.popline.org/node/404197>
- Akerele, O. (1987). The best of both worlds: Bringing traditional medicine up to date. *Social Science & Medicine*, 24(2), 177–181. doi:10.1016/0277-9536(87)90250-4
- Bodeker, G. (2001). Lessons on integration from the developing world's experience. *BMJ: British Medical Journal*, 322(7279), 164–167.
- Booker, A., Johnston, D., & Heinrich, M. (2012). Value chains of herbal medicines—Research needs and key challenges in the context of ethnopharmacology. *Journal of Ethnopharmacology*, 140(3), 624–633. doi:10.1016/j.jep.2012.01.039
- Buse, Kent, Mays, N., & Walt, G. (2012). Making health policy. In *Making health policy* (second edition., p. 13). London School of Hygiene & Tropical Medicine, 2012: Open University Press, McGraw-Hill Education.
- Chan M. Address at the WHO Congress on Traditional Medicine, Beijing, November 2008. Geneva, World Health Organization, 2008. (<http://www.who.int/dg/speeches/2008/20081107/en/index.html#>)
- Chan M. Address at the International Conference on Traditional Medicine for South-East Asian Countries. New Delhi, India, 12-14 February 2013.
- Debas, H. T., Laxminarayan, R., & Straus, S. E. (2006). Complementary and Alternative Medicine. In D. T. Jamison, J. G. Breman, A. R. Measham, G. Alleyne, M. Claeson,

- D. B. Evans, ... P. Musgrove (Eds.), *Disease Control Priorities in Developing Countries* (2nd ed.). Washington (DC): World Bank. Retrieved from <http://www.ncbi.nlm.nih.gov/books/NBK11796/>
- Gilani, A. H., & Atta-ur-Rahman. (2005). Trends in ethnopharmacology. *Journal of Ethnopharmacology*, *100*(1–2), 43–49. doi:10.1016/j.jep.2005.06.001
- Good, C. M. (1977). Traditional medicine: An agenda for medical geography. *Social Science & Medicine* (1967), *11*(14–16), 705–713. doi:10.1016/0037-7856(77)90156-1
- Hu, H., Li, G., Duan, J., & Arao, T. (2013). Prevalence, Purposes, and Perceived Effectiveness of Complementary and Alternative Medicine Use in a Hypertension Population: A Questionnaire Survey. *ISRN Public Health*, *2013*, e137472. doi:10.1155/2013/137472
- Kofi-Tsekpo, M. (2004). Institutionalization of African traditional medicine in health care systems in Africa. *African Journal of Health Sciences*, *11*(1-2), i–ii.
- Kooreman P, Baars EW. Patients whose GP knows Complementary Medicine tend to have lower costs and live longer. *European Journal of Health Economics*, *2012*,*13*(6):769–776.
- Little, C. V. (2009). Simply because it works better: exploring motives for the use of medical herbalism in contemporary U.K. health care. *Complementary Therapies in Medicine*, *17*(5–6), 300–8. doi:10.1016/j.ctim.2009.08.001
- Managing Drug Supply, Third Edition, Now Available Online | Management Sciences for Health*. (n.d.). Retrieved July 22, 2014, from <http://www.msh.org/news-events/press-room/managing-drug-supply-third-edition-now-available-online>
- Mason, M. (2010). Sample Size and Saturation in PhD Studies Using Qualitative Interviews. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research*, *11*(3). Retrieved from <http://www.qualitative-research.net/index.php/fqs/article/view/1428>

- Ness, J., Cirillo, D. J., Weir, D. R., Nisly, N. L., & Wallace, R. B. (2005). Use of complementary medicine in older Americans: results from the Health and Retirement Study. *The Gerontologist*, 45(4), 516–524.
- Ni, H., Simile, C., & Hardy, A. M. (2002). Utilization of complementary and alternative medicine by United States adults: results from the 1999 national health interview survey. *Medical Care*, 40(4), 353–358.
- Novick, G. (2008). Is There a Bias Against Telephone Interviews In Qualitative Research? *Research in Nursing & Health*, 31(4), 391–398. doi:10.1002/nur.20259
- Nunn John (2002). [\*Ancient Egyptian Medicine\*](#). University of Oklahoma Press. p. 151. [ISBN 978-0-8061-3504-5](#).
- Osemene, K. P., Elujoba, A. A., & Ilori, M. O. (2011). A Comparative Assessment of Herbal and Orthodox Medicines in Nigeria. *Research Journal of Medical Sciences*, 5(5), 280–285. doi:10.3923/rjmsci.2011.280.285
- Pirmohamed, M., James, S., Meakin, S., Green, C., Scott, A. K., Walley, T. J., ... Breckenridge, A. M. (2004). Adverse drug reactions as cause of admission to hospital: prospective analysis of 18 820 patients. *BMJ*, 329(7456), 15–19. doi:10.1136/bmj.329.7456.15
- Policy on traditional medicine development by traditional and alternative medicine directorate-Moh  
Ghana.
- Roberti di Sarsina P (2012). *Widening the paradigm in medicine and health: person centred medicine as the common ground of traditional, complementary, alternative and non-conventional medicine*. In: Health care overview: new perspectives, advances in predictive, preventive and personalised medicine. Dordrecht, Springer Netherlands, 2012, 1: 335–353.

Shaw, D., Graeme, L., Pierre, D., Elizabeth, W., & Kelvin, C. (2012). Pharmacovigilance of herbal medicine. *Journal of Ethnopharmacology*, *140*(3), 513–518.

doi:10.1016/j.jep.2012.01.051

WHO / *Policy process*. (n.d.). WHO. Retrieved February 19, 2014, from

<http://who.int/nationalpolicies/processes/en/>

WHO / *The worldwide rise of chronic noncommunicable diseases: a slow-motion catastrophe*. (n.d.). WHO. Retrieved July 15, 2014, from

[http://www.who.int/dg/speeches/2011/ministerial\\_conf\\_ncd\\_20110428/en/](http://www.who.int/dg/speeches/2011/ministerial_conf_ncd_20110428/en/)

WHO / *Traditional medicine*. (n.d.). WHO. Retrieved January 29, 2014, from

[http://www.who.int/topics/traditional\\_medicine/en/](http://www.who.int/topics/traditional_medicine/en/)

Zhang, L., Yan, J., Liu, X., Ye, Z., Yang, X., Meyboom, R., ... Duez, P. (2012).

Pharmacovigilance practice and risk control of Traditional Chinese Medicine drugs in

China: Current status and future perspective. *Journal of Ethnopharmacology*, *140*(3),

519–525. doi:10.1016/j.jep.2012.01.058



## APPENDICES

### **Appendix I: Consent Form**

**Topic:** CHALLENGES OF INTEGRATING HERBAL MEDICINE INTO NATIONAL HEALTHCARE DELIVERY SYSTEM IN GHANA: THE CASE OF LEKMA HOSPITAL-GREATER ACCRA REGION.

**Institution:** Department Health Policy, Planning and Management:

School of Public Health -College Of Health Sciences, University Of Ghana.

### **Background**

Dear participant, my name is Mohammed Muftawu. I am a student from the School Of Public Health, University of Ghana. I am conducting a study on the topic “Integration of herbal medicine into national healthcare system of Ghana” to assess the challenges and the way forward.

### **Procedures**

The study will involve answering questions from a structured questionnaire and in-depth interviews (IDI) on the integration of Herbal Medicine into national healthcare. There will be no invasive procedures like obtaining blood samples or intake of any product. This is purely an academic research which forms part of my work for the award of MPH degree and I will be grateful for your cooperation.

### **Risks and benefits**

The procedure will be non-invasive and will not cause any discomfort to participants. The results of the study will be of significance to policy makers to make improved policies for smooth implementation that will ensure total health coverage for all Ghanaians.

**Right to refuse**

Participation in this study is voluntary and you can choose not to answer any individual question or all the questions. You are at liberty to withdraw from the study any time. However, I will encourage you to fully participate since your opinion is important in determining the issues affecting Ghanaians healthcare needs.

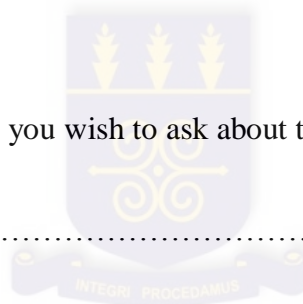
**Anonymity and confidentiality**

I would like to assure you that whatever information you will provide will be handled with strict confidentiality and will be used purely for research purposes. Your responses will not be shared with anybody who is not part of the study team. Data analysis will be done at the aggregate level to ensure anonymity.

**Before taking consent**

Do you have any questions you wish to ask about the study? Yes/No

If yes, please write .....



If you decide to ask me later, contact me on Mohammed Muftawu on 0242666877

**You can also contact the Ethical Review Committee Administrator, Ms Hannah Frimpong on 0243235225**

**Consent**

I.....,declare that the purpose , procedures as well risks and benefits of the study have been thoroughly explained to me in the language I understand well and I have understood.

I hereby agree to answer the questionnaire

Signature of participant..... Date .../.../...

**Interviewer’s statement**

I, the undersigned, have explained this consent form to the subject in the language that he/she understands the purpose of the study, procedures to be followed, as well as risks and benefits involved. The subject has freely agreed to participate in the study.

Signature of interviewer.....

Date.....

Address



**Appendix II: Structured questionnaire for patients.**

Please make sure you seek the consent of the participants first before proceeding.

Circle the correct response or provide the answer where appropriate to the following questions:

Respondent number:.....

NO.	QUESTION	RESPONSE
<b>SECTION A</b>		
<b>Background information</b>		
01	Sex	1. Female 2. Male
02	Age	
03	What is your level of education?	1. None 2. Basic level 3. Secondary level 4. Tertiary level
04	Which religion do you belong to?	1. Christian 2. Muslim 3. Traditional 4. Others, specify..... 5. None
		6.
05	Where do you reside currently?	.....
06	What is your occupation currently? Note: you can circle more than one response.	1. Student 2. Unemployed 3. Professional employment 4. Self employed 5. Domestic worker 6. Casual worker 7. Housewife 8. Others
07	Are you on NHIS	1. Yes 2. No
08	How many visits have you made so far at the herbal unit of LEKMA hospital	
09	Is your visit at the herbal unit of the hospital your first encounter with intake of herbal medicine?	1. Yes 2. No

10	How did you get to know about the herbal services in this hospital?	<ol style="list-style-type: none"> <li>1. Radio</li> <li>2. TV</li> <li>3. Graphic</li> <li>4. Announcements made at the Hospital</li> <li>5. Family and friends</li> <li>6. Others, specify.....</li> </ol>
11	Which condition did you present with at the herbal unit?	
12	Were you asked to come back for review?	<ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> </ol>
13	How consistent were you with the review?	<ol style="list-style-type: none"> <li>1. Very often</li> <li>2. Often</li> <li>3. Not often</li> </ol>
14	What was your expectation for visiting the herbal unit?	
15	Were the staff welcoming during your visit at the unit?	<ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> </ol>
16	Was a brief treatment plan of your condition you presented with explained to you?	<ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> </ol>
17	How was the outcome of the treatment given to you?	<ol style="list-style-type: none"> <li>1. Excellent</li> <li>2. Good</li> <li>3. Satisfactory</li> <li>4. poor</li> </ol>
18	How is the cost of the treatment using the herbal compared to orthodox medicine	<ol style="list-style-type: none"> <li>1. very expensive</li> <li>2. expensive</li> <li>3. normal</li> <li>4. cheaper</li> </ol>
19	Overall, are you satisfied with the services provided for you in this unit?	<ol style="list-style-type: none"> <li>1. Very satisfied</li> <li>2. Satisfied</li> <li>3. Mildly satisfied</li> <li>4. Mildly dissatisfied</li> <li>5. Very dissatisfied</li> </ol>
20	Do you think the presence of this herbal unit in this hospital is relevant?	<ol style="list-style-type: none"> <li>6. Very Important</li> <li>7. Important</li> <li>8. Moderately Important</li> <li>9. Of Little Importance</li> <li>10. Unimportant</li> </ol>
21	Do you think services provided at the herbal unit could be made better?	<ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> </ol>

22	In what way(s) do you think this can be achieved?	.....
23	Will you patronize the services of the herbal unit again anytime you fall sick?	1. Yes 2. Not really 3. No
<b>SECTION C</b>		
<b>Patients knowledge on safety of herbal medicine</b>		
24	Which one of the following best describes your use of herbal medicine?	1. Daily 2. Weekly 3. Monthly 4. Only during certain season 5. When prescribed for me by a registered herbal practitioner 6. Others, please specify ..... .....
25	<b>“Herbal medicine is natural and therefore 100% safe to use”</b> What is your opinion on this statement?	1. fully agree 2. agree 3. Doubt 4. Disagree 5. totally disagree
26	What was your reason for using herbal medicine?	..... ..... ..... .....
27	Where did you get the herbal medicine from?	1. From those selling in car 2. In a hospital 3. From shops (herbal/chemical/pharmacy) 4. At home from family/friends 5. Others.....
28	Have you ever experience any adverse effect after taking the herbal medicine?	1. Yes 2. No
29	What type of adverse effect did you experience?	1. Nausea 2. Vomiting 3. Diarrhoea 4. Constipation 5. Nervousness/Anxiety 6. Dizziness 7. Skin rash 8. Others (Specify) .....

30	Do you think the feelings you experienced could be as a result of the herbal medicine you took?	<ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> </ol>
31	Did you report this adverse effect of the herbal medicine to any one?	<ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> </ol>
32	Who did you report this adverse effect of the herbal medicine to?	<ol style="list-style-type: none"> <li>1. The hospital</li> <li>2. The shop</li> <li>3. Family/friends</li> <li>4. Others, specify please.....</li> </ol>
33	What will you do if you experience the adverse effect of herbal medicine?	<ol style="list-style-type: none"> <li>1. I'll report to where I got the medicine</li> <li>2. The effect will subside by itself</li> <li>3. Others.....</li> </ol>

**Appendix III: IN-DEPTH INTERVIEW GUIDE FOR PROVIDERS**

My name is Mohammed Muftawu. With your kind permission I would like to ask some questions for your response. The questions are to elicit any challenges facing the integration of herbal medicine services in this hospital (LEKMA). Thank you in anticipation for your responses

Please for how long have you been working?

What role is the herbal unit playing in the Hospital?

How integrated is the herbal unit with other units/department of the Hospital?

Are the staff in this unit competent enough to provide the needed healthcare? Why do you think so?

Is the unit provided with the right equipments to function? Please mention some of these equipments being provided.

What kind of working relationship exists between the staff in this unit and other staff of other units of the Hospital?

How is the recruitment of staff for this unit being done?

Do you think the unit is performing optimally and effectively? Can you cite some examples?

What changes do you think could be made to make better the use of staff and equipments already available?

Are there any measures in place to ensure the sustainability of this herbal medicine service in this hospital?

#### **Appendix IV: IN-DEPTH INTERVIEW GUIDE FOR POLICY-MAKERS**

My name is Mohammed Muftawu. With your kind permission I would like to ask some questions for your response. The questions are to elicit any challenges facing the integration of herbal medicine into national healthcare. Thank you in anticipation for your responses

1. Please for how long have you been working in this institution?
2. What is the current state of herbal medicine in Ghana?

NB: what is the strategy for development of herbal medicine.

3. How far has Ghana reach with the integration of herbal medicine into national healthcare.

NB: find out number of hospitals with herbal medicine services being undertaken.

How many professionals are employed under this services.

4. Some countries have been able to advance and fully integrate their traditional medicine into national healthcare system. Is Ghana applying some of these experiences to ensure development and full integration of herbal medicine into national health system?

NB: to find out how coordinated and how organized the integration process is.

5. What are the objectives for the integration of herbal medicine into health systems?

6. Are there timelines for the integration

NB: please can you cite an instance where you have been able to achieve any objective within its stipulated timelines.

7. How is the monitoring and evaluation of the integration done?

NB: to ensure sustainability

8. So far, what is most critical problem facing the integration?

- Find out whether the problem of policy or management related or frontline implementers.

- Is there any other pressing issue(s) again please

9. To what extent has the introduction of herbal medicine into NHIS reached?

- Need for collaboration with research institutions and other key stakeholders.

10. How do you think these issues that you have mentioned could be handle?

NB: coordinated approach or individual

11. Do you think the integration of herbal medicine into national healthcare could be sustained and how?

