

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY
KUMASI, GHANA
COLLEGE OF HEALTH SCIENCES
SCHOOL OF PUBLIC HEALTH
DEPARTMENT OF HEALTH POLICY, MANAGEMENT AND ECONOMICS



INTEGRATION OF TRADITIONAL AND ALTERNATIVE MEDICINE INTO ROUTINE
HEALTH CARE DELIVERY SYSTEM IN THE KUMASI METROPOLIS OF ASHANTI
REGION, GHANA

BY

STEPHEN OSEI –AGYEPONG NYEDUA
(PG.5130318)

SEPTEMBER, 2019

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY,

KUMASI, GHANA

COLLEGE OF HEALTH SCIENCES

SCHOOL OF PUBLIC HEALTH

DEPARTMENT OF HEALTH POLICY, MANAGEMENT AND ECONOMICS

INTEGRATION OF TRADITIONAL AND ALTERNATIVE MEDICINE INTO ROUTINE
HEALTH CARE DELIVERY SYSTEM IN THE KUMASI METROPOLIS OF ASHANTI
REGION, GHANA

BY

STEPHEN OSEI –AGYEPONG NYEDUA

A THESIS SUBMITTED TO THE DEPARTMENT OF HEALTH POLICY, MANAGEMENT AND
ECONOMICS, COLLEGE OF HEALTH SCIENCES, SCHOOL OF PUBLIC HEALTH, IN PARTIAL
FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER OF PUBLIC HEALTH
DEGREE IN HEALTH SERVICES PLANNING AND MANAGEMENT

SEPTEMBER, 2019

DECLARATION

I, Nyedua Osei-Agyepong Stephen, hereby declare that, this piece of work is the result of my original research, except for references to other people's works, which have been acknowledged duly. I hereby also declare that this work has neither in whole nor in part been presented for any degree in this university or elsewhere.

SIGNATURE..... DATE.....

NYEDUA OSEI-AGYEPONG STEPHEN, (STUDENT)

SIGNATURE..... DATE.....

DR. KOFI AKOHENE MENSAH (SUPERVISOR)

DEPARTMENT OF HEALTH POLICY, MANAGEMENT AND ECONOMICS.

SCHOOL OF PUBLIC HEALTH, KNUST

SIGNATURE..... DATE.....

DR. PETER AGYEI- BAFFOUR

HEAD OF DEPARTMENT

DEPARTMENT OF HEALTH POLICY, MANAGEMENT AND ECONOMICS.

SCHOOL OF PUBLIC HEALTH, KNUST

DEDICATION

This research work is dedicated to God and my Mother; Madam Janet Odamea

ACKNOWLEDGEMENT

I am very grateful to God for making it possible for the completion of this research work. Through the contributions of many people, this study has been possible, and I am grateful to them all.

However, I would like to express my profound gratitude to my academic supervisor,

Dr. Kofi Akohene Mensah for his invaluable guidance, constructive comments and motivation throughout the study. Additionally, I would like to acknowledge the help and support of the Kumasi metropolitan health director and her staff, the heads and staff of the hospitals used for this study. I also appreciate the clients at the outpatient's departments of the various hospitals for their time, help and support given towards this study.

TABLE OF CONTENTS

DECLARATION.....	i
DEDICATION.....	ii
ACKNOWLEDGEMENT.....	iii
LIST OF FIGURES.....	vi
LIST OF FIGURES.....	v
Figure 1.1: Conceptual framework.....	vi
Figure 1.1: Conceptual framework.....	v
Figure 1.2: Political Map of Kumasi.....	vi
Figure 1.2: Political Map of Kumasi.....	v
Figure 2.3: Structure of Integration of TAM.....	vi
Figure 2.3: Structure of Integration of TAM.....	v
Figure 2.4 :Treatment plan of TAM.....	vi
Figure 2.4 :Treatment plan of TAM.....	v
ABBREVIATIONS AND ACRONYMS.....	vii
ABBREVIATIONS AND ACRONYMS.....	vi
ABSTRACT.....	viii
ABSTRACT.....	vii
CHAPTER ONE.....	1
CHAPTER ONE.....	1
INTRODUCTION.....	1
INTRODUCTION.....	1
1.1 Background of the Study.....	1
1.1 Background of the Study.....	1
1.3 Significance of the Study.....	4
1.3 Significance of the Study.....	4
1.5 Research Questions.....	7
1.5 Research Questions.....	7
1.6 Study objectives.....	7
1.6 Study objectives.....	7
1.6.1 Main Objectives.....	7
1.6.1 Main Objectives.....	7
1.6.2 Specific Objectives.....	7
1.6.2 Specific Objectives.....	7
CHAPTER TWO.....	11
CHAPTER TWO.....	11
LITERATURE REVIEW.....	11
LITERATURE REVIEW.....	11
CHAPTER THREE.....	39
CHAPTER THREE.....	39
RESEARCH METHODOLOGY.....	39
RESEARCH METHODOLOGY.....	39
3.7 Strengths and Weaknesses of Qualitative Research.....	43
3.7 Strengths and Weaknesses of Qualitative Research.....	43
3.7.1 Strengths (Advantages) of Qualitative Research.....	43
3.7.1 Strengths (Advantages) of Qualitative Research.....	43
3.7.2 Weaknesses (Disadvantages) of Qualitative Research.....	44
3.7.2 Weaknesses (Disadvantages) of Qualitative Research.....	44
CHAPTER FOUR.....	46
CHAPTER FOUR.....	46
RESULTS.....	46
RESULTS.....	46

CHAPTER FIVE	54
DISCUSSION.....	54
CHAPTER SIXS AND RECOMMENDATIONS.....	62
CONCLUSIONS AND RECOMMENDATIONS.....	62
APPENDIX I: INTERVIEW GUIDE FOR PROVIDERS	66
APPENDIX II: INTERVIEW GUIDE FOR CLIENTS.....	67
APPENDIX III: CONSENT FORM AND INFORMATION SHEET	68



LIST OF FIGURES

Figure 1.1: Conceptual framework.....	6
Figure 1.2: Political Map of Kumasi.....	9
Figure 2.3: Structure of Integration of TAM.....	21
Figure 2.4 :Treatment plan of TAM.....	23

ABBREVIATIONS AND ACRONYMS

FDA- Food and Drugs Authority

GHS- Ghana Health Service

GSA- Ghana Standards Authority

MOH- Ministry of Health

NHIS- National Health Insurance Scheme

NMIMR- Noguchi Memorial Institute for Medical Research

TAM – Traditional and Alternative Medicine

TAM-D- Traditional and Alternative Medicine Directorate

TMPC- Traditional Medicine Practice Council

WHO- World Health Organization

TMP – Traditional Medicine Practitioner

OMP – Orthodox Medicine Practitioner

ABSTRACT

Introduction

Traditional and alternative medicine development in Ghana has undergone a lot of transformation despite its challenges. Currently, the significance and integration of traditional and alternative medicine into routine healthcare delivery cannot be underestimated within the healthcare industry in Ghana. Therefore, the need to explore lessons learnt from the integration of TAM into routine health care delivery system in Kumasi Metropolis, Ashanti Region, Ghana.

Methods

The study was qualitative using exploratory cross-sectional study design to measure views and experience of TAM integration, challenges of TAM and suggestion to overcome challenges. The data were collected from 20 Providers and 30 Clients using a semi-structured interview guide. The data were analyzed thematically facilitated by manual analysis.

Results

The providers and clients were of the view that, the gap between allopathic and Herbal medicine practice should be bridged to enhance easy access to healthcare. They were of the view that herbal medicines should be listed onto the NHIS Scheme for healthcare delivery. Majority of providers and clients indicated that resource constraints, inadequate manpower development and sensitization were major challenges with the integration of TAM into routine healthcare delivery system. Most of the providers and clients suggested that adequate resources for the herbal units of the hospitals, sensitization of the public as well as healthy collaboration between herbal practitioners and orthodox medical practitioners as practical ways of addressing challenges confronting TAM integration.

Conclusion

The study unraveled several benefits with integration of TAM into routine healthcare delivery. However, resource constraints and inadequate collaboration between herbal and orthodox practitioners were identified as critical impediments to TAM integration into routine healthcare delivery system. The study therefore recommended that government and all other relevant stakeholders should provide adequate resources (human and material) for the herbal units, effective sensitization and education on the use of herbal medicine and efforts to bridge the gap between orthodox and herbal medicine.



CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND OF THE STUDY

In the developed countries, healthcare systems are mostly based on westernized allopathic medicine (WHO, 2015). However, in the less developed world there are entirely different types of healthcare systems. Some of these traditional medicine healthcare systems are known to the industrialized world as complementary, alternative, non-conventional, or traditional medicine (Alves and Rosa, 2007).

Traditional and alternative medicine is the ancient and culture bound medical practice which existed in human societies before the application of modern science to health. The practice of traditional and alternative medicine varies widely, in keeping with the societal and cultural heritage of different countries. Every human community responds to the challenge of maintaining health and treating diseases by developing a medical system. Thus, traditional and alternative medicine has been practiced to some degree in all cultures (WHO, 2010).

The World Health Organization has defined traditional medicine as “the sum total of knowledge, skills, and practices, based on the theories, beliefs and experiences indigenous to different cultures, whether explicable or not, used in the maintenance of health, as well as to prevent, diagnose, improvement or treatment of physical and mental illnesses (WHO, 1978). Again, Traditional and Alternative medicine refers to health practices approaches, knowledge and beliefs, incorporating plant, animal, mineral based substances, spiritual therapies, manual techniques and exercises, applied singularly or in combination, to treat, diagnose, and prevent illnesses or maintain well-being (WHO,2003). Others consider that it is “medicine based on beliefs and cultural practices,

handed down from one generation to another”. It includes mystical and magic rites, herbal and other treatments that cannot be explained by modern medicine (Bodeker & Kronenberg, 2002). According to WHO on World 2010, 70% - 95% of citizens in developing countries use traditional medicine as a primary source of healthcare. This is because, difficulty in gaining access to different and more expensive kinds of treatment, or because of cultural or traditional reasons. Also, people resort to traditional and alternative medicine mainly because it is readily available, accessible, acceptable and easily affordable, as well as consistent with indigenous cultures, traditions and ethnic grouping (WHO, 2013).

Traditional and alternative medicine development in Ghana has undergone a lot of transformation despite its challenges. Currently, the significance and influence of traditional and alternative medicine in healthcare cannot be discounted in the country. Comparable in many other countries, traditional and alternative medicine had been in Ghana years before the introduction of orthodox medicine. It is pronounced as the oldest health care system which has been used to deal and cope with life intimidating illnesses (Abdullahi, 2011). TAM falls directly under the umbrella of the Ministry of Health, Ghana which happens to be the sector Ministry responsible for policy formulation, supervision and regulation of all Health-related issues in Ghana.

The Integration of TAM started with the establishment of Center for Scientific Research into Plant Medicine and Research Institution under Ministry of Health to research into the efficacy, the side effects and the possible health benefits of Medicinal Plants.

Also, there was the establishment of TAM Unit under the Ministry of Health now upgraded to the TAM Directorate, headed by a Director. The TAM Director advises the Ministry of Health on all policy formulation, research and donor support and serves as the Mouthpiece of the Ministry of Health, Ghana with respect to International organization on TAM practice.

Furthermore, the establishment of Traditional Medicine Practice Council now known as Traditional and Alternative Medicine Practice Council as an autonomous regulatory agency of the Ministry of Health mandated by an act of parliament, Act 575, 2000, to regulate, promote and control all Traditional and Alternative Medicine Practices in Ghana. The TMPC implements all policies initiated and formulated by the Ministry of Health through TAM-D.

1.2 Statement of the Problem

The use of traditional and alternative medicine (TAM) and its integration into routine healthcare delivery system was gaining root in most developing countries. However, there were several concerns to the implementation of TAM in developing countries despite its enormous benefits. Although consumers today have widespread access to various TAM treatments and therapies, they often do not have enough information on what to check when using TAM in order to avoid unnecessary and preventable suffering and injury.

Sub-Saharan Africa countries harbor a rich history of indigenous traditional and alternative medical practices that are not commonly understood or practiced within modern medicine in the rest of the world. The health system in Ghana has gone through series of evolution and revolution since the attainment of political independence (Vaillancourt, 2009; MOH, 2009; Sowa, 2002; van den Boom et al., 2004; Addai and Gaere, 2001; Oppong, 2001). Notwithstanding, like other developing countries, Ghana is still struggling to find the means to providing effective, efficient, appropriate and comprehensive health care system for its growing population. Transmissible diseases that are preventable but accounting for the leading cause of morbidity and mortality in the country melancholically continue to place a toll on the population (Buor, 2008).

With the current dispensation, influx and advances of orthodox medical system in Ghana, the complementary role of TAM in Ghana's health care system cannot be underestimated. TAM plays

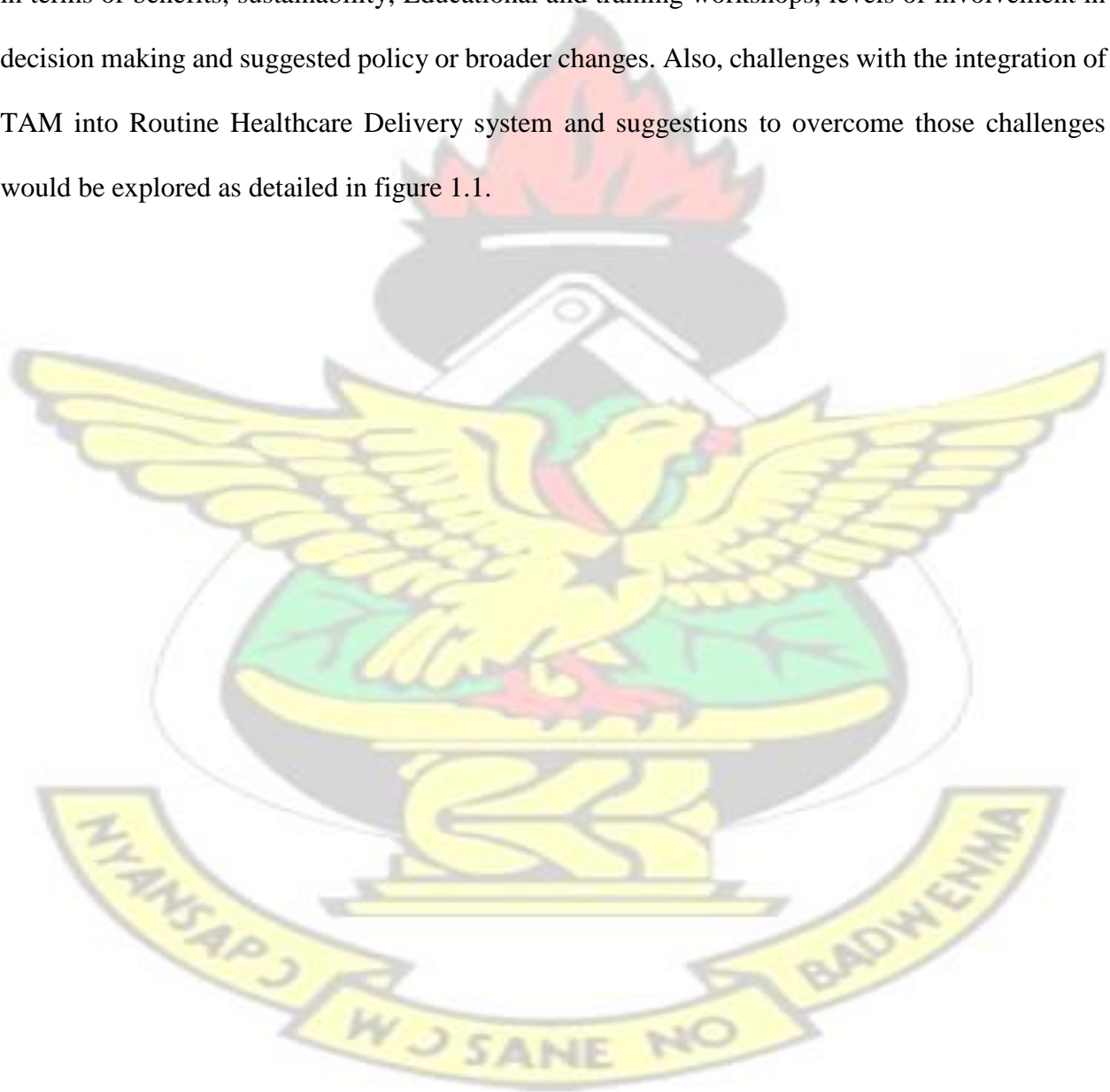
a critical role in the healthcare delivery system in the country as traditional and alternative medicine remains the main source of primary healthcare for many Ghanaians especially in rural areas with little or no access to orthodox health care services (Abdulai, 2009). Also, interest in traditional systems of medicine and, in particular, herbal medicines, has increased substantially in the 21st century. TAM assumes greater importance in the primary health care of individuals and communities in Ghana. It also creates employment to a lot of people within the country. Undoubtedly, outcomes of studies on determinants of TAM use plunge into perplexity. They are mostly erratic and not well understood. Ghanaian traditional medicine and health care practice systems are not well documented and characterized in writing. Limited studies have been conducted into the integration of TAM into routine health care delivery system particularly in Kumasi Metropolis. Therefore, the need for the study as a lesson learning for the metropolis, the region and the country as a whole.

1.3 SIGNIFICANCE OF THE STUDY

The outcome of the study unveiled the providers and clients' views and experiences on integration of TAM into routine healthcare delivery, challenges with the integration and suggestions to overcome those challenges. This would serve as a lesson learning for the Traditional and Alternative Medicines unit in the Metropolis and the Region. Also, it will serve as a lesson learning for policy makers in addressing some of the challenges identified as ways of improving the integration. Moreover, the study will contribute to limited literature on integration of TAM into routine healthcare delivery. This would serve as a reference material for researchers, students and academicians pursuing future research in this area.

1.4 Conceptual Framework

Several lessons can be learnt from the integration of TAM into routine healthcare delivery systems particularly in Ghana. These lessons can be learnt from the perspectives of the providers and clients in terms of benefits, sustainability, Educational and training workshops, levels of involvement in decision making and suggested policy or broader changes. Also, challenges with the integration of TAM into Routine Healthcare Delivery system and suggestions to overcome those challenges would be explored as detailed in figure 1.1.



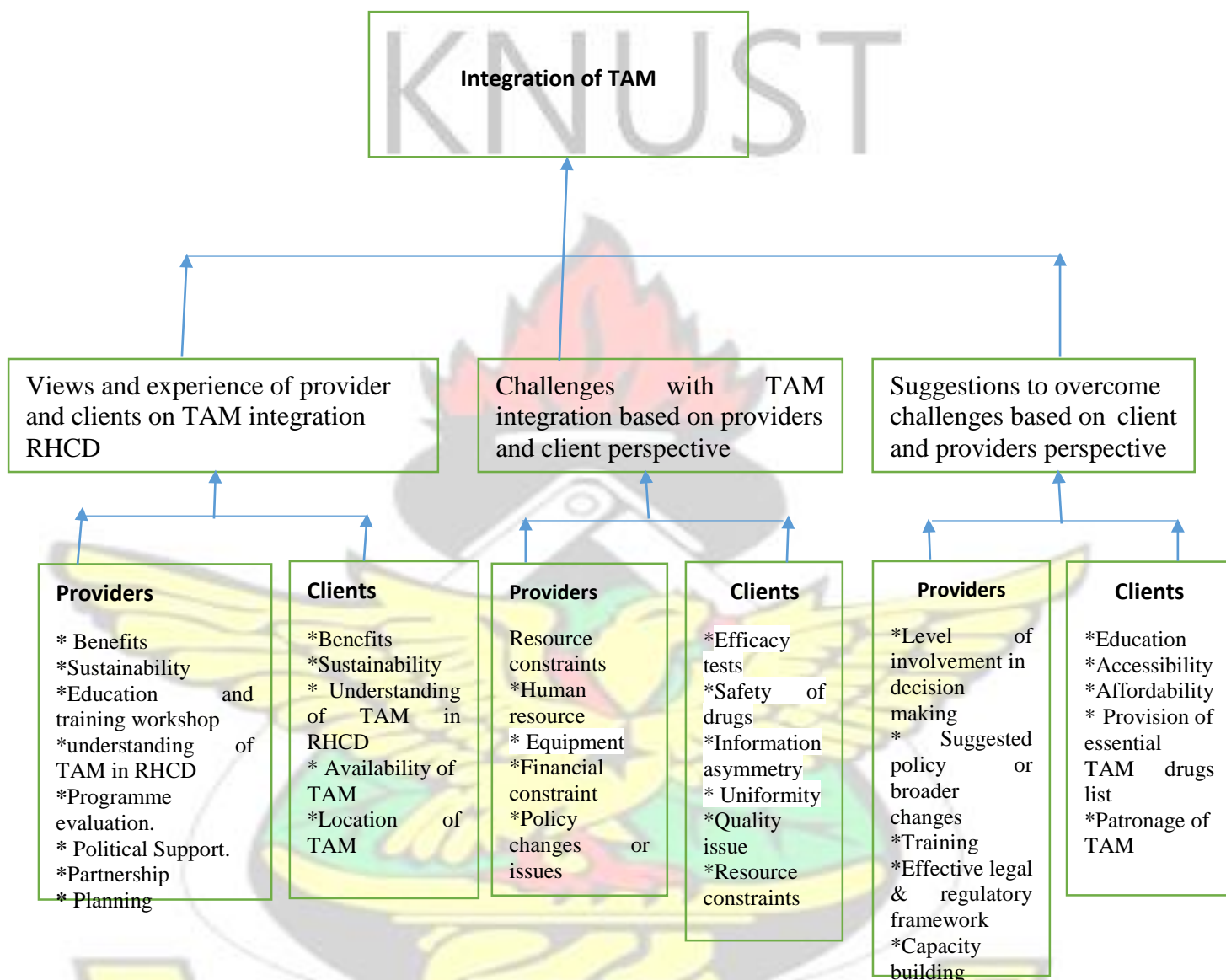


Figure 1.1 Conceptual framework of TAM integration into Routine Healthcare Delivery

Source: Author Survey (2019).

1.5 RESEARCH QUESTIONS

The research questions of the study will be as follows:

1. What are the views and experiences of providers and clients with the integration of traditional and alternative medicine into routine health care delivery system in Kumasi Metropolis of Ashanti Region, Ghana?
2. What are the challenges associated with the integration of traditional and alternative medicine into routine health care delivery system in Kumasi Metropolis from the perspective of clients and providers?
3. How do we overcome the above challenges based on client's and provider's perspective?

1.6 STUDY OBJECTIVES

1.6.1 MAIN OBJECTIVES

To explore lessons learnt from the integration of TAM into the routine health care delivery system in Kumasi Metropolis of Ashanti Region, Ghana.

1.6.2 SPECIFIC OBJECTIVES

1. To explore the views and experiences of providers and clients with the integration of traditional and alternative medicine into the routine health care delivery system.
2. To explore the challenges associated with the integration of traditional and alternative medicine into the routine health care delivery system based on providers and client's perspective.
3. To explore suggestions to overcome the above challenges based on providers and client's perspective.

1.7 PROFILE OF THE STUDY AREA

1.7.1 Profile of Kumasi Metropolis

Kumasi is located in the transitional forest zone and is about 270km north of the national capital, Accra. It is between latitude 6.35° – 6.40° and longitude 1.30° – 1.35°, an elevation which ranges between 250 – 300 meters above sea level with an area of about 254 square kilometers. The unique centrality of the city as a traversing point from all parts of the country makes it a special place for many to migrate to.

The Kumasi metropolis is the most populous district in the Ashanti Region. During the 2000 Population Census it recorded a figure of 1,170,270. It has been projected to have a population of 1,625,180 in 2006 based on a growth rate of 5.4% p.a and this accounts for just under a third (32.4%) of the region's population. Kumasi has attracted such a large population partly because it is the regional capital, and also the most commercialized center in the region. Other reasons include the centrality of Kumasi as a nodal city with major arterial routes linking it to other parts of the country and also the fact that it is an educational center with three State Universities, Private Universities, two Teacher Training Colleges, Secondary Schools and a host of Basic Schools.

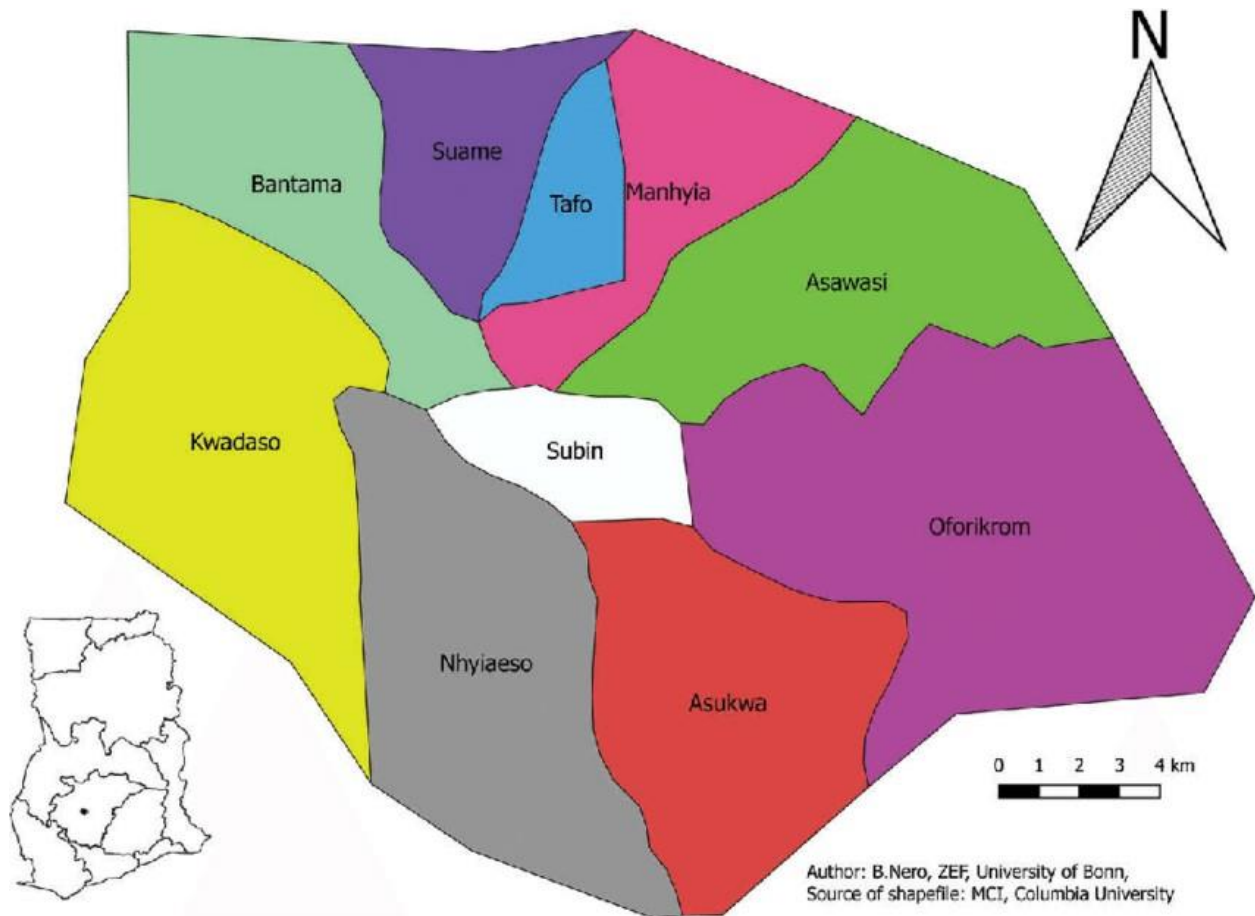


Figure 1.2 Political map of Kumasi Metropolis

1.7.2 Healthcare Delivery System on Kumasi Metropolis

The Healthcare delivery system in Kumasi Metropolis comprises Komfo Anokye Teaching Hospital which is autonomous and the referral hospital for both mid and Northern Ghana. The metropolis healthcare system has both the Allopathic Hospitals and Herbal Clinics certified and licensed by the Ministry of Health, Ghana. Three of the government hospitals have herbal unit. All these hospitals are under the supervision of the Kumasi Metropolitan Health directorate, headed by a Metropolitan Health director. All Traditional and Alternative Medicine hospitals, clinics and other facilities licensed to practice are regulated by the TMPC of the Ministry of Health. CHAG hospitals and other private hospitals within the metropolis are regulated by the AHPC by the

Ministry of Health. HEFRA regulates both public and private facilities within the metropolis.

1.8 Scope of the Study

The study focused on the lessons learnt with the integration of traditional and alternative medicine into routine health care delivery system in Kumasi metropolis of Ashanti Region, Ghana. Specifically, the study explored the views and experiences of providers and clients on TAM integration, challenges with the integrations of TAM and suggestions to overcome those challenges.

1.9 Organization of the Thesis

The thesis was structured into six chapters:

Chapter one ; the introductory chapter that covers the study background, Problem statement, Significance of the study, Conceptual framework, Research objectives, Research questions, Profile of the study area Scope of the study, and organization of the thesis.

Chapter two; deals with review of relevant literature. This chapter covered, History of integration of TAM, Integration of TAM into routine Health care delivery system in Ghana. Structure of TAM integration into routine Healthcare delivery system in Ghana. Views and experiences on integration of TAM into routine Healthcare delivery system. Challenges with integration of TAM into routine Healthcare delivery system; Suggestions to overcome challenges with the integration of TAM into routine Healthcare delivery system.

Chapter three; the Methodology section, it discusses in detail the required methodology, comprising study type and design; study population; data collection technique and tool; Analysis of data; ethical consideration.

Chapter four; the analysis in line with the study objectives.

Chapter five; discuss the findings of the study as per the objectives of the study

Chapter six; present a conclusions and recommendation with regards to the new knowledge derived from the research.

KNUST

CHAPTER TWO

LITERATURE REVIEW

2.1. History of Integration of TAM into Routine Healthcare Delivery System in Ghana

National policies are the basis for defining the role of traditional medicines (herbal medicine) in national health care programs, ensuring that the necessary regulatory and legal mechanisms are established for promoting and maintaining good practice, assuring the authenticity, safety, and efficacy of traditional medicines and therapies, and providing equitable access to health care resources and their resource information (WHO 2005). Another fundamental requirement is

harmonization of the market for herbal medicines for industry, health professionals, and consumers. The policy of integration aims at combining the theory and practice of different health systems and creating a new, better, and comprehensive one. In this perspective, traditional and alternative medicine is accorded official recognition (WHO, 2002a; Anyinam, 1989b) and integrated into all aspects and levels of health care provision. In countries where this is pursued, TAM practices are fully incorporated into the relevant national drug policy; healers and their products are registered and regulated by state institutions; therapies offered by the practitioners are available at licensed healthcare facilities including hospitals and clinics (Public, Private-not for profit, or Private for profit). In addition, TAM is taught in educational institutions and it is also covered by health insurance. China represents the best of this policy. Others include Democratic Peoples' Republic of Korea, Vietnam and India (IBC, 2012; WHO, 2002a). Nonetheless, since the philosophical underpinnings of TAM and Western Allopathic medical systems are quite diverse and very often contradictory and at variance, real integration is extremely difficult, if not impossible (Islam and Wiltshire, 1994; Barimah, 2013).

According to the WHO, Traditional medicine (TM) is “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”. There are many different systems of traditional medicine, and the philosophy and practices of each are influenced by the prevailing conditions, environment, and geographic area within which it first evolved. However, a common philosophy is a holistic approach to life, equilibrium of the mind, body, and the environment, and an emphasis on health and well-being of mankind, rather than on disease. Generally, the focus is on the overall condition of the individual, rather than

on the particular ailment or disease from which the patient is suffering, and the use of herbs is a core part of all systems of traditional medicine. (WHO, 2003).

In Africa up to 90% and in India 70% of the population depend on traditional medicine to help meet their health care needs (WHO, 2013). In China, traditional medicine accounts for around 40% of all health care delivered and more than 90% of general hospitals in China have units for traditional medicine. However, use of traditional medicine is not limited to developing countries, and during the past two decades public interest in natural therapies has increased greatly in industrialized countries, with expanding use of ethnobotanicals. In Ghana, integration of herbal medicine units into the national healthcare delivery system has been as slow as molasses in January (Gyasi, 2014). Today, the Traditional Medicine Policy (TMP) whose object is to provide a general policy direction or framework within which government's short to long term plans on TM would be based has been gathering dust ever since it was written. According to the TMP, Traditional Medicine Practitioners (TMPs) and Orthodox Medicine Practitioners (OMPs) who are operating separately have mistrust amongst them (Islam & Wiltshire, 1994). This was attributed to ignorance as both TMPs and OMPs lack information and education on the roles of each practice. Thus, there is a very loose co-operation between OMPs and TMPs. Also, there is this general feeling among TMPs that they are not being accorded the needed recognition by their counterpart OMPs. Thus, there is resistance to integration of herbal medicine practice with the national healthcare system which is skewed towards allopathic practice. (Hillenbrand, 2006).

Over the past 100 years, the development and mass production of chemically synthesized drugs have revolutionized health care in most parts of the world. However, large sections of the population in developing countries still rely on traditional practitioners and herbal medicines for their primary care. According to a survey by the National Center for Complementary and

Alternative Medicine, herbal therapy or the usage of natural products other than vitamins and minerals was the most commonly used alternative medicine (18.9%) when all use of prayer was excluded. A survey conducted in Hong Kong in 2003 reported that 40% of the subjects surveyed showed marked faith in TCM compared with Western medicine. The most common reasons for using traditional medicine are that it is more affordable, more closely corresponds to the patient's ideology, allays concerns about the adverse effects of chemical (synthetic) medicines, and satisfies a desire for more persons. (Gyasi et. al, 2011)

In Ghana, about 70% of the population depend exclusively on traditional medicine for their health care. There is approximately one traditional medicine practitioner for every 400 people, compared to one allopathic doctor for every 12 000 people (Commodore, 2014). With over 100 000 traditional medicine practitioners uniformly distributed nationally, they are not only more accessible to the public, but also the backbone of the health care delivery system (Mensah, 2000). Restrictions contained in the Poisons Order 1952 limit the use of the substances listed in the Order to registered medical practitioners. The Medical and Dental Decree of 1972 and the Nurses and Midwives Decree of 1972 allow indigenous inhabitants of Ghana to practice traditional medicine, provided they do not practice life-endangering procedures. The Centre for Scientific Research into Plant Medicine was established in 1975. In addition to its research capacity, the Centre operates a hospital providing both traditional and allopathic medicine. Until the passage of the Traditional Medicine Practice Act, the Government worked with the Ghana Psychic and Traditional Medicine Practitioners' Association to license and register traditional medicine practitioners and to ensure a standard of care (Sanders, 2013). The Traditional Medicine Practice Act, 2000, (Act 575) was enacted by Parliament of Republic of Ghana.

2.2 Integration of TAM into Routine Healthcare Delivery System in Ghana

Integration of TAM into routine health care delivery system is a very necessary process of making health care accessible to the citizenry specially, primary health care which should be embraced in every country that wishes to develop its health system of which Ghana is not immune. TAM assumes greater importance in the primary healthcare of individuals and communities in many developing countries and has been popularly recognized (Sen et. al, 2011; Van Andel et. al, 2012). In Ghana successive governments have recognized the importance of traditional medicine. The formation of the Ghana Psychic and Traditional Healers Association in 1961 and the establishment of the Centre for Scientific Research into Plant Medicine in 1975 attest to this fact. Also, in 1991 the government established a unit for the coordination of Traditional Medicine (which is now Traditional and Alternative Medicine Directorate) which was followed by the setting up of the Food and Drugs Board in 1992, which among others, is to certify the sale of Traditional Medicine products to the public.

The integration of herbal and other forms of traditional medicine (TM) can be done in one of the following three ways: First, it can be incorporated as an integral part of a country's formal health care system, with each being separately recognized as legitimate forms of health care within the same framework. Second, it can be a practice integrated with modern medicine by individual health care practitioners. Third, traditional and modern practices can be integrated as two branches of medical science, with the ultimate incorporation of elements of both to form a new branch (World Health Organization, 2000). The incorporation of traditional and modern evidence-based medicine (EBM) as integral parts of a country's formal health care system is most likely to be achieved and has been demonstrated to be practicable in many countries, particularly in Asian countries such as China, Japan, Korea, and India, among others (World Health Organization, 2001). On the other

hand, the incorporation of traditional medical modalities such as herbal medicine into modern or EBM by either the second or third method of health care integration is not easily achieved for a host of reasons, including scientific, cultural, educational, and legal.

For decades, the People's Republic of China has touted a system of medical education in which its modern medicine practitioners have been required to receive some formal training in traditional Chinese medicine (TCM), so that they are aware of suitable approaches in TCM during their practice of Western medicines. However, documentation of its successful integration in clinical practice is lacking (Giordano, Garcia, and Strickland, 2004). In Western countries, such as the United States, Australia, Canada, and members of the European Union, the popular use of herbal medicine in the form of complementary and alternative medicine (CAM) or phytomedicine in the last two to three decades has led to a multinational, multibillion dollar industry, professional and trade organizations, national and international practice and research conferences, establishment of specialized integrated medicine practices and clinics in pain management and adjunctive cancer therapy, incorporation of CAM courses in conventional medical colleges, introduction of CAM degree-level education programs, and establishment of research funding agencies such as the U.S. National Institutes of Health (NIH) National Center for Complementary and Alternative Medicine (NCCAM, 2015), and the Australian National Institute of Complementary Medicine (NICM, 2005). As a result of these developments, the issue of integration of CAM medicine, including herbal preparations, into modern medicine has been the subject of ongoing international discussions in the last few years (Fong 2002; Barrett 2003; Ruggle 2005; Boyd 2007; Geffen 2007; Evans 2008; Grimaldi 2008; Shang et al., 2008; Jobst 2009; Joos, Musselmann, and Szecsenyl 2009).

However, proof of efficacy or safety for the vast majority of herbal medicine has not been fully established through an evidence-based approach. Further, other issues, such as scientific, cultural, educational, economical, and legal, need to be addressed.

In 2000, the government enacted the TMPC Act, Act 575 for the establishment of Traditional Medicine Council which is tasked with the responsibility for the registration of all Traditional Medical Practitioners in the country (TMP, 2005).

Long before the advent of orthodox medicine in Ghana, traditional medicines including the use of herbs were the main remedies for nearly all ailments (Twumasi, 2005). Today, notwithstanding the increasing use of modern medicine in Ghana, herbal medicine is also hugely patronized and many continue to rely on it for their health care (Calixto, 2005; Hensel, 2015).

In recent times, people have been turning in increasing numbers to the use of herbal medicines as both an alternative and complementary to modern medicine (Lucas, 2010).

According to the World Health Organization (WHO) about 80% of developing countries depend on traditional medicines for their primary health care needs (Calixto, 2005). In Ghana, traditional medicine, particularly herbal medicines, is an important component of the health care system of the people (Hensel, 2015). The utilization of herbal medicines and associated medicinal plants in Ghana has been documented by many authors (Mshana, 2001; Abbiw, 1992; PORSPI, 1992) although there are still many indigenous cultures and communities in Ghana that possess a great store of traditional knowledge about herbal medicines for treatment of various human ailments, which are yet to be documented. The use of herbal medicine in Ghana is widespread but highly diverse due to floristic and cultural diversity, and traditional medicine has huge impacts on the local economy and biodiversity conservation.

The rich history of use of herbal medicines and innovative utilization of plants as sources of medicines in Ghana, and broadly within Africa, has been passed down through generations largely as oral tradition (Soelberg, 2015) and as such it is important that this knowledge be documented. The WHO has a keen interest in documenting the use of medicinal plants by indigenous people from different parts of the world (Buragohain, 2011) Documentation of indigenous knowledge about utilization of medicinal plants is important for a plethora of reasons. Firstly, it ensures that indigenous culture heritage is preserved from being lost for the use of both present and future generations (Mahwasane, 2013).

Studies have indicated that indigenous knowledge about herbal medicines is continuously being lost through factors such as acculturation and biodiversity losses. For example, a comparative study of contemporary plant uses in Ghana shows that the material medica of the Fanti, Ga, and Ashanti has changed considerably over time (Soelberg, 2015). Secondly, through further research such as phytochemical, biochemical, pharmacological, and clinical studies information on indigenous herbal medicines can lead to discovery of new bioactive agents for treatment of ailments. Despite the recent interest in molecular modelling, combinatorial chemistry, and other synthetic chemistry techniques by pharmaceutical companies and funding organizations, natural products, and particularly medicinal plants, remain an important source of new drugs, new drug leads, and new chemical entities (NCEs) (Newman, 2003).

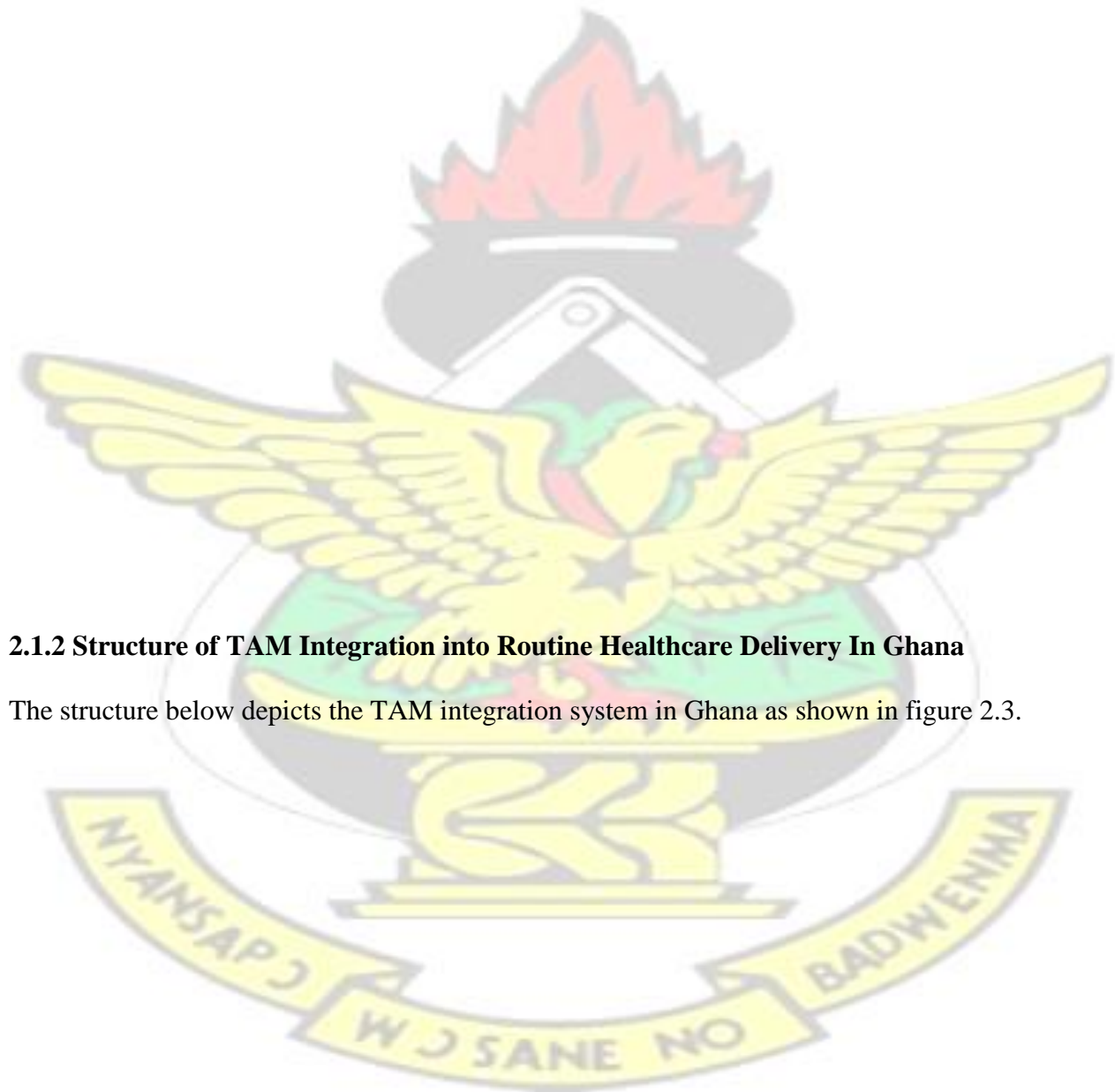
Thirdly, biodiversity conservation can be enhanced when information about plants that are harvested and utilized in the management of ailments within particular areas are available (Mensah et al., 2003). For biodiversity conservation, it is also important to know what quantities of plant materials are harvested, not only for home consumption but also for trade. Commercial trade often stimulates extensive wild-collection, which often has negative effects on medicinal plant

population sizes and recovery after harvesting. On the other hand, the trade and marketing of herbal medicine creates employment for thousands of people, for example, in Ghana (Myren et al., 2013). Herbal medicine has played a significant role in health care delivery. It is estimated that approximately over 4 billion people or 80% of the world's population rely on traditional medicine, one way or the other, for health care (WHO, 2003). Moreover, an estimated 80% of the people in developing countries and 80% of Africans rely on herbal medicine to meet their primary health care needs (Darko, 2009; Okigbo and Mmeka, 2006; WHO, 2003a; Abbiw et al., 2002). The annual global market for herbal medicines currently stands at over US\$60 billion and is growing steadily at a rate of fifteen to twenty five percent (WHO, 2003).

Missionaries introduced allopathic medicine to Ghana during the colonial period. After independence in 1957, the Government initiated a number of medical projects, promoting allopathic medicine as Ghana's official medical system (Mensah, 2000). However, successive governments have recognized both traditional and complementary/alternative medicine, including acupuncture, homeopathy, naturopathy, osteopathy, and hydrotherapy. Traditional medicine practitioners use herbs, spiritual beliefs, and local wisdom in providing health care. There are a number of associations of traditional medicine practitioners, including the Ghana Psychic and

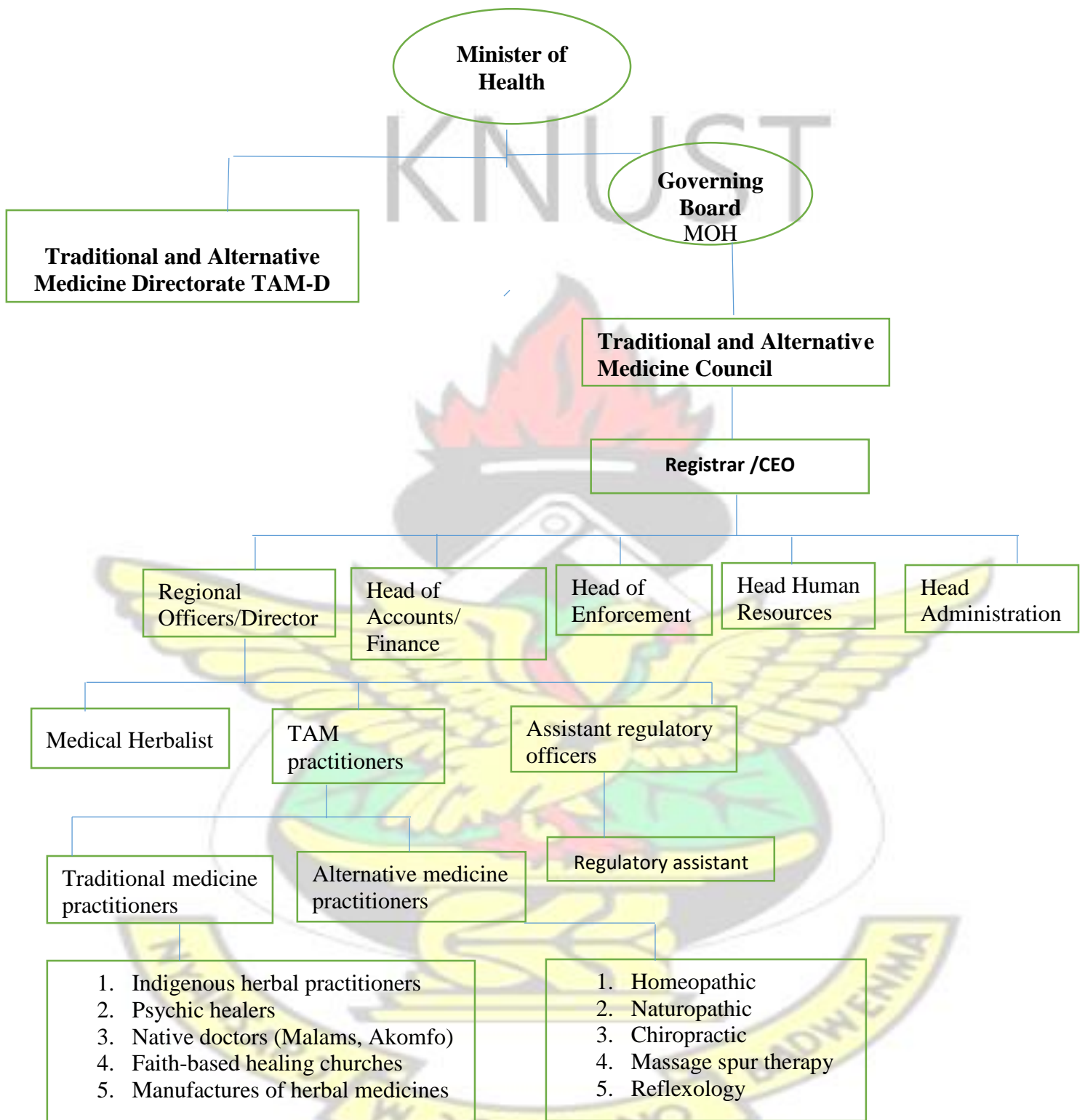
Traditional Medicine Practitioners' Association, which was formed in 1961 (Oppong, 2010). In 1999, the Government brought all the traditional medicine associations together under one umbrella organization, the Ghana Federation of Traditional Medicine Practitioners' Associations (Mensah, 2000).

KNUST



2.1.2 Structure of TAM Integration into Routine Healthcare Delivery In Ghana

The structure below depicts the TAM integration system in Ghana as shown in figure 2.3.



The Traditional and Alternative Medicine Directorate (TAMD), is the technical advisory unit of Ministry of Health, whose mandate, inter alia, develops and reviews the broad policies for

traditional and alternative medicine; designs and develops licensing and regulatory schemes, mechanisms, systems, plans, strategies, and standards, to regulate manage activities within the subsector. TAM D has Research sub-unit, which creates and reviews research data for policies development and an information and communication sub-unit, which creates platforms for policy discuss, education and sensitization, The TMPC, established by an ACT 575 (2000), as a Regulatory Agency, under the Ministry of Health, is mandated to regulate, control and promote all traditional and alternative medicine practices in Ghana, which is coterminous with registration, certification and licensing of all practitioners and their facilities; supervision, inspection, monitoring; and enforcement of policies and regulations, as enshrined in ACT 575, 2000, and its consequential prosecution and conviction. TAM D and TMPC are headed by a Director and a Registrar, respectively, who are both answerable to the Chief Director of the MOH, and the Minister of Health. The Registrar of TMPC, is the secretary to Governing Council of TAM Practices.

The practical integration of TAM, into routine healthcare delivery system in Ghana became operationalized in selected public hospitals on pilot basis in 2011. Currently, Kumasi South Government hospital, Suntreso Government hospital, Tafo Government hospital, Obuasi Government hospital

Some hospitals have been selected as part of the integration process. Examples of facilities in Ashanti region include Suntreso and Obuasi government hospital. Patient have the right to choose between orthodox or traditional medicine consultation and treatment.

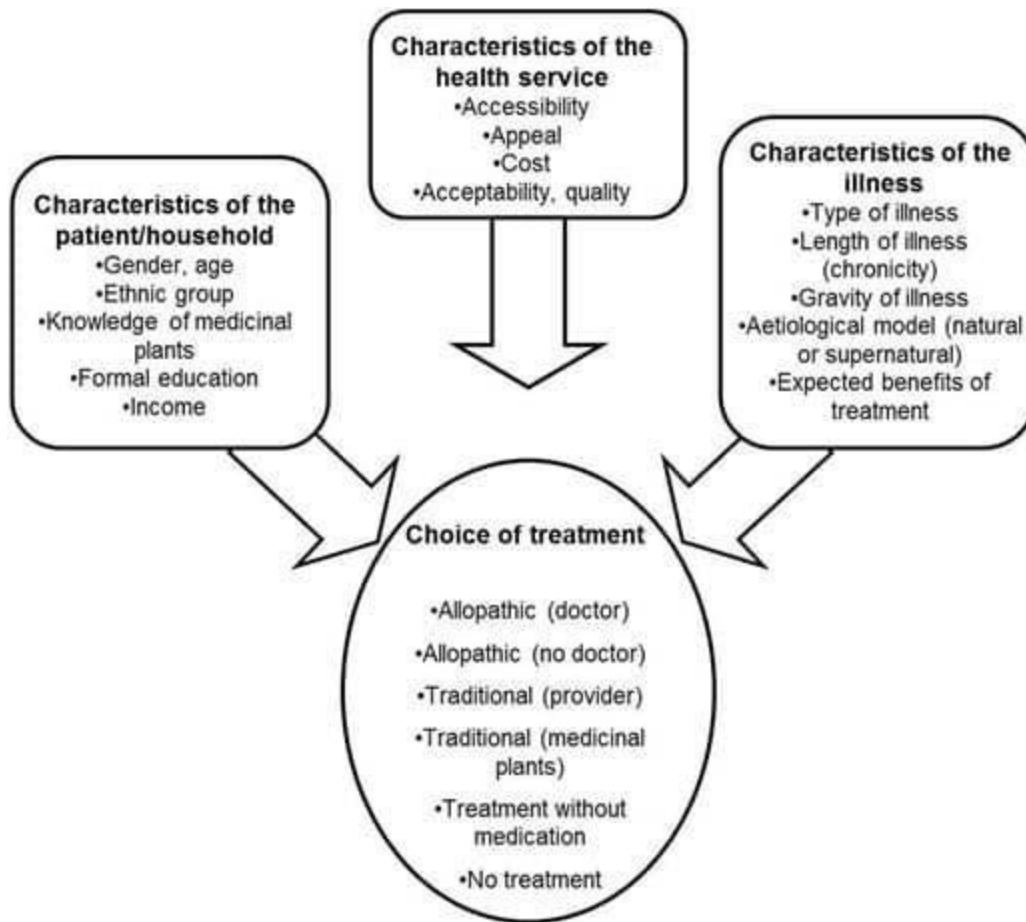


Figure 2.4 the diagram above explains how the traditional and alternative medicine treatment work in Ghana.

2.2 Views and Experiences on Integration of TAM into Routine Healthcare Delivery System

Herbal medicine is becoming increasingly used to enhance general health and well-being, and it is also used alone for specific health problems or with modern medicine (Bruno and Ellis 2005; Kennedy 2005). A recent population study on 2526 adults from the Australian state of Victoria indicated that almost a quarter of the adult population used some form of herbal medicine in 2006–2007 (Zhang et al., 2008). Similarly, about one in five or an estimated 38.2 million adults in the

United States used herbs and supplements in 2002, according to the National Health Interview Survey, which interviewed 31,044 representatives of the civilian non-institutionalized population of the United States (Kennedy 2005). Established in 1999, the Consortium of Academic Health Centers for Integrative Medicine represents 44 academic health centers in the United States and Canada. The Consortium has been working on the inclusion of CAM knowledge, such as herbal therapies, into medical school curricula and the establishment of standards for research in integrative medicine and strategies in integrating alternative treatments into clinical care. Currently, thousands of TM and other CAM herbal products are available as therapeutic agents worldwide. Yet few of these products have been subjected to randomized clinical trials (RCTs) under the International Conference on Harmonization (ICH) Good Clinical Practice Guidelines to determine their efficacy and/or safety (International Conference on Harmonization 2010.). Of the nearly 2000 herbal medicine clinical studies listed on the Cochrane Controlled Trials Register as of June 2009, most concern single-plant herbal or phytomedicine. In recent years, in the case of multicomponent herbal medicines, an increased number of RCTs on traditional herbal medicine has been reported in the literature (World Health Organization 2004). For example, an Australian study on a Chinese herbal medicine prescription for the treatment of allergic rhinitis concluded that level II evidence is available that may substantiate the use of Chinese herbal medicine for both seasonal and perennial allergic rhinitis (Xue et al., 2003). Unfortunately, the quality of the majority of the clinical studies of herbal medicines reported to date is of great concern due to a number of factors that have rendered the data of dubious value. In a review of 206 RCTs on herbal medicine, which was published in Medline from 1966 to 2003, important methodological components of RCTs, particularly allocation concealment, generation of the allocation sequences, and intention-to-treat analyses, were incompletely reported. In these studies, only slightly over a quarter of the trials

adequately reported blinding, and one-fifth reported generation of random allocation sequences (Gagnier et al., 2006). Furthermore, an earlier review of 2938 RCTs on TCM reported in 1980–1997 (Tang, Zhan, and Ernst 1999) concluded that the majority of these studies suffered from methodological defects. For example, only 15% of these studies used blinding, the sample size was mostly less than 300 patients, the controls were inadequate, few studies used quantitative outcome measures, and the studies were short term.

There have been many nonclinical *in vitro* and *in vivo* studies on herbal medicines that have commonly supported the traditional therapeutic claims. However, systematic reviews of the study protocols or the data interpretation and validation are lacking. Further, the translation of an *in vitro* and/or *in vivo* biological/pharmacological effect of a herbal medicine to human therapeutic use may not be successful due to species differences or other mitigating circumstances, including the simple attribute of a biological or clinical outcome by the name of the mother herb, while neglecting the type of plant extract, methods of processing, and pharmaceutical formulation, which invariably contain varying content and proportions of active chemical components (Brinker 2009).

In addition to the preclinical biological or pharmacological issues, the quality of the herbal products can affect the clinical outcomes and thus can impact their successful integration into EBM. Herbal medicine quality can be substantially different due to intrinsic and extrinsic factors. Species differences, organ specificity, and diurnal and seasonal variations are examples of intrinsic factors that can affect the qualitative and quantitative accumulation of the biologically or pharmacologically active chemical constituents produced and/or accumulated in the herb.

Extrinsic factors affecting the quality of the herbal medicine include environmental conditions, cultivation and field collection practices, postharvest handling, storage, manufacturing, inadvertent contamination, substitution, and intentional adulteration (Awang 1997; Huang, Wen, and Hsiao 1997; Slifman et al., 1998; Mahady, Fong, and Farnsworth 2001; Cordell 2002; Fong 2002; Chadwick and Fong 2006).

A study in the Caribbean revealed that traditional medicines were perceived to be more efficacious in some instances or as equally as effective as orthodox medicines (Clement et.al., 2007)

2.3 Challenges with The Integration of TAM Into Routine Healthcare Delivery System

A range of interrelated quality, safety and efficacy issues could contribute to the rational and successful integration of herbal medicine into modern medical practices.

Herb Quality Issues

Fundamental to assuring the efficacy and reproducibility of any medicinal agent, be it a single chemical or a complex herbal mixture, is the assured quality of the product. In the case of single chemical drugs, the quality and properties are well defined and documented in pharmacopoeias or on file with regulatory agencies or marketing authorities. On the other hand, herbal medicines, be they single herbs or polyherbal products, suffer from a lack of uniformity in their chemical and physical qualities due to various factors as mentioned above. All these factors have contributed to extensive lists of herbal medicines being reported in the scientific and lay media to be of inferior and questionable quality and authenticity.

In our early post market surveillance of selected commercial ginseng products prepared from *Panax ginseng* C.A. Meyer., *P. quinquefolius* L., and *Eleutherococcus senticosus* Max (eleuthero) marketed in North America in 1995–1998, we found that 26% of these products did not meet label

claims with respect to the claimed ginsenoside content of the *Panax ginseng* and *Panax quinquefolius* products (Fitzloff, Yat, and Lu 1998). Studies on the quality of St. John's wort products showed the hypericin content ranging from 22% to 165% and silymarin content in milk thistle (*Silybum marianum* L. Gaertn.) products ranging from 58% to 116% of the labeled claims (Schulz, Hubner, and Ploch 1997). Gilroy et al., (2003) reported their investigation of herbal medicines sold as "echinacea" in the United States. A total of 59 products were studied (Gilroy et al., 2003) and of these, seven of nine so-called standardized products contained substantially less of the marker compounds echinacoside or cichoric acid than the stated content, with the other two being totally devoid of either compound.

Another major extrinsic quality problem concerns substitution and/or adulteration. Herbal medicines collected in the wild as well as some cultivated source materials, where more than a single species is grown in a given farm or site, can lead to non-targeted species being harvested by either accidental substitution or intentional adulteration. Substitution of *Periploca sepium* Bunge for *Eleutherococcus senticosus* (eleuthero) had been well documented (Awang 1997), and the U.S. Food and Drug Administration (FDA) had traced the original adverse reactions attributed to plantain (*Plantago ovata* Forsk.) as having actually been caused by *Digitalis lanata* Ehr., a contaminant introduced during harvesting of plantains (Slifman et al., 1998).

Unintentional in-process adulteration with heavy metals, microbial and chemical agents (pesticides, herbicides, and heavy metals), as well as with foreign matter such as insects, animals, animal parts, and animal excreta during any of the stages of source plant material production or procurement can result in unsafe source materials (Fong 2002). Besides unintentional in-process adulteration with heavy metals, it is well established that Ayurvedic medicine and TCM sometimes

employ complex mixtures of plant, animal, and minerals such as lead, mercury, cadmium, arsenic, and gold in certain formulations (Ernst and Thompson Coon 2001).

Perhaps the most egregious impediment to the integration of herbal medicine into conventional medicine is the intentional adulteration of herbal medicine products with synthetic pharmaceutical drugs. Multicomponent Chinese or Ayurvedic herbal medicines have long been documented to be adulterated with synthetic anti-inflammatory drugs such as phenylbutazone, indomethacin, and/or corticoid steroids in arthritis remedies (Farnsworth 1993). A Taiwanese study on the chemical adulteration of TM found that about 24% of 2609 herbal remedy samples collected by eight major hospitals were found to contain one or more synthetic therapeutic agents (Huang, Wen, and Hsiao 1997). In more recent years, the most infamous among the documented cases was PC-SPES, a purported Chinese herbal mixture sold in the United States for the promotion of prostate health, and which was used by many prostate cancer patients for its remarkable efficacy. Unfortunately, reports proved the product to have been adulterated with estrogen, warfarin, and other pharmaceuticals (Blumenthal 2002; Cordell 2002). These cited examples are only a few of the quality control (QC) or lack of quality control issues associated with herbal medicines that greatly affect their successful integration into modern EBM.

Quality Assurance/Quality Control in Processing and Manufacturing/Preparation of Herbal Medicines (Good Manufacturing Practices Issues)

The most important extrinsic factor affecting the quality of herbal medicines is the lack of effective policies on quality assurance (QA)/QC in the processing and manufacturing of herbal products under good manufacturing practices (GMP; World Health Organization 2007b). These can vary

from country to country (World Health Organization 1998). In some countries, herbal medicines are regulated as medicine and subject to mandated standards, whereas in others very few botanical products are available as prescription or over-the-counter (OTC) drugs.

The majority of herbal medicines marketed in the United States are sold as dietary supplements under the provisions of the Dietary Supplement Health and Education Act (DSHEA) of 1994, and have only recently been mandated by law to be produced under cGMP (Food and Drug Administration 2007). Unfortunately, the QA/QC requirements are far short of those required in the production of prescription and OTC drugs. For dietary supplements, including herbal medicines, the requirements apply only to the manufacturers of the final product and not to the dietary ingredient suppliers, which have been the source of some of the most high-profile problems of adulterated, substituted, or contaminated ingredients associated with herbal dietary supplements. A study by (Liva 2009), which serves to illustrate this problem, described some cases of poor quality controlled, unfinished herbal materials, including a hops (*Humulus lupulus*) extract, that did not meet the expected chemical profile but instead appeared to contain burned maltodextrin, Asian red ginseng (*Panax ginseng*), and wild yam (*Dioscorea villosa*) extracts containing quintozone, a fungicide that is illegal to use in herbal medicine, and in a solvent residue test, a purported ethanol–water extract of milk thistle (*Silybum marianum*) was found to contain benzene, and a subsequent GC/ MS analysis showed 30 different acyclic and cyclic hydrocarbons, including benzene and toluene, which are known carcinogens. Until GMP requirements are mandated and adhered to in the supply as well as in the manufacturing sides to ensure the availability of quality herbal products, herbal integration into modern medical practice will continue to pose problems.

In several countries, herbal medicines are totally unregulated. Consequently, product quality may differ from country to country, within the same country from product brand to product brand, and even from batch to batch within the same brand.

Herbal Mechanisms of Action, Bioavailability, and Herbs' Chemical Constituents

The underlying mechanisms of action of herbal medicine, whether single herbal or multiple herbal formulations, have generally not been elucidated due to the lack of knowledge of identifying their contained active and/or adjuvant phytochemical constituents. The same problem applies to the study of pharmacokinetics and bioavailability. In the case of single-molecular pharmaceuticals, there is no uncertainty as to which chemical compound is to be used for pharmacokinetic and bioavailability studies. Herbal medicines are constrained by their unknown and/or unidentifiable active chemical constituents (Fong et al., 2006). Nevertheless, some investigators have attempted to conduct such studies. For example, the mechanism of action of a Chinese herbal medicine formula (consisting of seven herbs formulated based on the results of a series of in vitro experiments and a comprehensive literature review) was postulated from a study of its in vitro effect on rat peritoneal mast cells and macrophage cells (Lenon et al., 2009). It was found that the formula significantly inhibited the release of several inflammatory mediators, including histamine and prostaglandins, which led the researchers to conclude that it has multiple mechanisms and that potential synergistic effects of the individual herbal constituents could all have contributed to the actions of the formula. Unfortunately, the potential clinical antiallergic effects of the formula are yet to be tested through adequately powered RCTs, which brings into question the validity of such postulations.

Herb–Drug Interactions

Reports on herb–drug interactions are mainly from case reports that were inadequately documented and/or on the basis of in vitro studies (Awang and Fugh-Berman 2002). A recent review based on extensive literature search suggested that, when herbs are often administered in combination with drugs, there were only limited clinical observations on the interactions among humans (Hu et al. 2005). Nevertheless, the potential of interactions of herbal medicine with prescribed drugs or OTC drugs has been a major safety concern for clinicians as such interactions are difficult to predict and the general lack of available information on the herbs' composition and pharmacological actions (Zhou et al., 2007).

In recent years, researchers have attempted to identify interactions between commonly used herbs and drugs. Many of them are now well known, such as the interaction between St. John's wort and warfarin (Yue, Bergquist, and Gerden 2000; Henderson et al., 2002) or digoxin (Johne et al., 1999). A recent review concluded that 34 commonly used drugs that interacted with herbal medicines in humans had been identified. These include anticoagulants (e.g., warfarin, aspirin), antidepressants (e.g., midazolam), cardiovascular drugs (e.g., digoxin), and anticancer drugs (e.g., irinotecan; Zhou et al., 2007). If the definition of the herbal medicine extended to botanicals including fungi, algae, and other component matters, nearly 80 herbal medicines would be identified that had clinically significant interactions with drugs. Garlic, ginger, and ginkgo are among the herbs most commonly involved in herb–drug interactions (Ulbricht et al., 2008).

Herb-Herb Interactions

Herb–herb interactions, sometimes referred to as contraindications in the application of herbs or prescription incompatibility, were documented in ancient textbooks on TCM medicinal formulae (i.e., a mixture of herbs). TCM practitioners prescribe herbal formulae based on disease manifestation and characteristics of the herbs. The most well-documented herb–herb interactions were eighteen-incompatible-herbs and nineteen-counteracting-herbs. For example, Wu Tou (*Aconitum* rhizome) cannot be used with Ban Xia (*Pinellia* ternata rhizome; Weng, Nie, and Huang 2004), and Fu Zi (*Radix Aconiti*) is incompatible with Bei Mu (*Bulbus Fritillariae*; Xiao et al. 2005). It should be noted that evidence of the adverse reactions and/or toxicity of the combined use of these herbs was mainly derived from clinical observations in ancient times. Some experienced TCM practitioners may choose to use some combinations for various conditions (Zhang and Li 2009). Researchers have attempted to generate more scientific evidence through modern pharmacological studies, but conclusive recommendations have not yet been possible (Tang et al., 2009).

Efficacy Measurements: Objective Quantifiable versus Subjective Quality of Life

The integration of herbal medicine into evidence-based clinical practice and research also rests on the acceptance of its scientific evidence by the conventional medical profession, including medical practitioners, pharmacists, nurses, and other health care workers. The evidence needs to be verified legitimately and scientifically according to the conventional EBM framework. Studies in other CAM modalities such as acupuncture have been designed with specific details of the experiment (e.g., kind of needle used, location of the points, depth of needle insertion, and techniques for rotating the needles) and the nature of the control method after considering a placebo effect

(Sherman et al., 2002). If possible, evidence generated for herbal medicine should be derived from the most powerful method of testing the effect of treatment intervention, the RCT. With a plausible biological basis, herbal products can be evaluated through double-blinded, placebo-controlled, multicenter trials. Reflecting this, the World Health Organization (WHO) has published a number of guidelines for clinical evaluation of the herbal and TMs (World Health Organization 1993, 2000b).

The methodological robustness of outcome measures in 44 CAM trials in oncology had been recently evaluated, and it was concluded that only 37% stated an a priori hypothesis and only 20% addressed the clinical significance of the outcomes (Efficace et al., 2006). Trials with poor outcome measurements can exaggerate the estimates of treatment effects (Schulz et al., 1995). Thus, within the EBM paradigm, RCTs are suggested to be reported in accordance with the 22-item Consolidated Standards of Reporting Trials (CONSORT) checklist such as a detailed description on patient eligibility criteria, sample size calculation, specific objectives and hypotheses, implementation of the trial, and statistical methods, regardless of whether the intervention is conventional or herbal (Gagnier et al., 2006, 2006b).

In parallel with other methodologies necessary to the design of the trials, outcome measurement is central to the development of EBM practice of CAM, including herbal medicine (Long 2002). Thus, item 6 (outcomes) of the CONSORT checklist was recommended to reflect the intervention and indications tested while considering their underlying theories and concepts when reporting RCTs on herbal medicine intervention (Gagnier et al., 2006b). At the request of the NIH, the Institute of Medicine convened a working committee in 2005 and produced a report entitled

Complementary and Alternative Medicine in the United States. In this report, the core recommendation was that “the same principles and standards of evidence of treatment effectiveness apply to all treatments, whether currently labeled as conventional medicine or CAM” (Institute of Medicine 2005, 2). From this view, for herbal medicine, like any other CAM and pharmaceutical drugs, efficacy measurements used in RCT need to be chosen in accordance with conventional scientific principles (objective and quantifiable) before their results can be generalized and can be made acceptable to the public. Perhaps one obstacle is the holistic concept and approach being emphasized by the unique philosophy of herbal medicine. For this reason, some subjective measurements, including the percentage of patients perceiving benefits and the number of patients “recovering” from the condition, were commonly reported in TCM trials (Ernst 2006). In recent years, the development of the quality of life instrument for herbal medicine research by using an EBM approach has received much attention (Leung et al. 2005; Wu et al., 2009).

Other Safety Issues

Other safety issues influencing herbal medicine integration into modern medicine include cultural and behavioral contexts as well as efficient communication on its use among patients, conventional medical practitioners, and herbal medicine practitioners. Over a few decades of development and with more scientific research data being published, although not all convincing, at least some promising evidence has met the EBM standard. As a result, negative attitudes and doubtful perceptions of herbal medicine may now only be held by a minority of the conventional medical profession. Nevertheless, it is of critical concern to clinicians that many herbal medicine users take herbal remedies and conventional therapies concurrently without informing their medical doctors.

Such communication gaps can lead to herb–drug interactions that may be otherwise avoided. The above-mentioned population study on 2526 Australian adults also indicated that approximately half of herbal medicine users took two forms of therapy on the same day (Zhang et al., 2008). However, only about half of these users had voluntarily informed their medical practitioners about their herbal medicine use. This finding was not striking and, in fact, the situation is similar in the United States, with only one-third of the users having informed their medical providers about their use of herbs or supplements (Kennedy, Wang, and Wu 2008). This study also found that nondisclosure of herb and supplement use was particularly common among racial and ethnic minority groups (Kennedy, Wang, and Wu 2008). Therefore, understanding the reasons for nondisclosure not only can help doctors to provide better clinical care but also to promote safe integration of herbal medicine into evidence-based medical therapy.

In the recent decades though there have been certain international and national policies for preserving and promoting traditional medicine, the progress of their implementation has been rather slow. Additionally, these policies fall short of adequately addressing a number of concerns related to TAM such as safety, efficacy, quality, rational use, availability, preservation and development of such health care, sustainable use of natural resources and assuring equity in transactions at various levels and so on (WHO 2002, Bodeker et al., 2007).

Lack of sound scientific evidence relating to safety and efficacy, problems in ensuring quality and rational use, inadequate understanding of socio-cultural context of their practice and usage, protection of intellectual property rights of knowledge holders, assuring sustainable natural resource use, regulation and capacity building of non-formal practitioners, developing appropriate methodologies for evaluation, resolving conflicts with mainstream medicine are some of the key challenges in the sector.

Yeboah (2000) aptly pointed out that traditional health services do not have the answers to all of the health problems in Ghana. While many herbs may be considered safe, some have hazardous side effects (IUPAC, 2008). Herbs believed to have an effect on blood clotting abilities (for example, ginkgo biloba and ginseng) may cause serious side effects for patients with certain bloodrelated conditions such as haemophilia (Lucas, 2010). Herbal medicines may interact with prescription medications, over-the-counter drugs, vitamins and minerals. For example, the herbal medicine ginkgo biloba, taken with ibuprofen may lead to spontaneous and/or excessive bleeding. High doses of garlic may also enhance the adverse effects of anticoagulant and anti-platelet drugs, including aspirin, clopidogrel (Plavix), enoxaparin (Lovenox), and others (IUPAC, 2008). However, there are some challenges to collaboration between traditional herbal medicine and orthodox medicine especially in the developing countries mainly:

1. Due to shortage of mutual trust and appreciation between the two health systems.
2. Limited availability of training in basic preventative medicine.
3. Palliative care for traditional herbal healer.
4. Lack of meaningful referral between conventional health providers and traditional herbal healers.
5. Exclusion of traditional healing methods from the training curricula of doctors.
6. Traditional healers fear of losing their treatment secrets to scientist and researchers.

According to Mensah (2008), Twumasi (2005) and Buor (1993), the potency and effectiveness of traditional medicine have been proven through research. Herbal therapies have shown remarkable success in healing acute as well as chronic diseases (Shaikh and Hatcher, 2005). Buor (1993), for instance discovered that there is a kind of psychological

security in the medical approaches of the traditional medicine man which is able to relieve a patient of strong psychic pressure.

Herbal medicine provides more effective treatments to certain health problems such as boils, tuberculosis, stroke, arthritis, epilepsy, asthma, infertility, hernia, hypertension, diabetes, malaria, depression, mental illness and disease prevention as well as for the ageing population, where modern medicine has either failed to produce equally good results or has simply ignored the need for systematic attention and research (Darko, 2009; Twumasi, 2005; Yeboah, 2000; Davies, 1994; Buor, 1993).

2.4 Suggestions to Overcome Challenges with The Integration Of TAM Into Routine Healthcare Delivery System

In an attempt to improve upon TAM services and make it easy to regulate, studies have suggested the incorporation of TAM into the health care system to enhance and health outcomes (Gyasi, 2014; Gyasi et al., 2011; Kretchy, Owusu-Daaku, & Danquah, 2014). This move would ensure that TAM services are offered in a safe, respectful and effective manner (WHO, 2013) according to the policies and regulations of the country, but the integration of TAM has its own challenges. It is an undeniable fact that efforts are being made by policy makers, to bridge the disjoint between the conventional health system and TAM. This is to form an integrated health services which meets the new demands of healthcare (WHO 2013). However, this integration process has been slow and there seem to be lack of cooperation and challenges between orthodox medicine practitioners and TAM practitioners (Hillenbrand, 2006). There is a lot to be learnt from TAM and its benefits to society can be tremendously improved and maximized when integrated with orthodox medicine. The WHO revised its traditional medicines strategy for countries to aid them in the incorporation

of traditional medicine into their national healthcare. In this document, countries are to achieve this by coming up with ways of helping them to prioritize their specific needs, finding solutions to them and providing an effective delivery of services to their people with the support of appropriate regulations (WHO, 2013). Therefore, it is incumbent on each country to develop practical approaches to foster this integration and deal with the bottle necks which already exist and those which would arise during the process. The following are some of the measures that can be adopted to improve the challenges associated with TAM integration in Ghana:

1. Knowledge on the policies and legislation of TAM integration in Ghana is very low, so there is the need for extensive education and awareness creation on TAM integration in Ghana (Warude & Patwardhan, 2005).
2. Resource allocation, the central government have to provide adequate funding to make the programme successful (Gobah & Liang, 2011; Osei-Akoto, 2012; Adjei & Buor, 2012; WHO, 2012).
3. Training and development, there is the need for continuance training and development of the capacity of practitioners within the TAM field (Sen et. al, 2011; Waldram, 2000)
4. Efficient monitoring and evaluation of the TAM integration programme, the responsible sector ministry should carefully monitor and evaluate the exercise. This will help mitigate some of the challenges that are currently facing the programme (Vandebroek, 2013; Tabi et. al, 2006; Peltzer, 2008; Gyasi et. al,2013)).
5. Provision of all the essential TAM medication to the participation facilities, as the absence of essential medicine at the hospitals is affecting the programme (Gyasi et. al,2013; Sharma et. al,2008).

6. Nationwide implementation is also key in making the programme successful as access is one of the main challenges associated with TAM integration programme in Ghana (Owusu-

Sekyere & Bagah, 2014; Gyasi et. al, 2011; Vandebroek, 2013)

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Study Type and Design

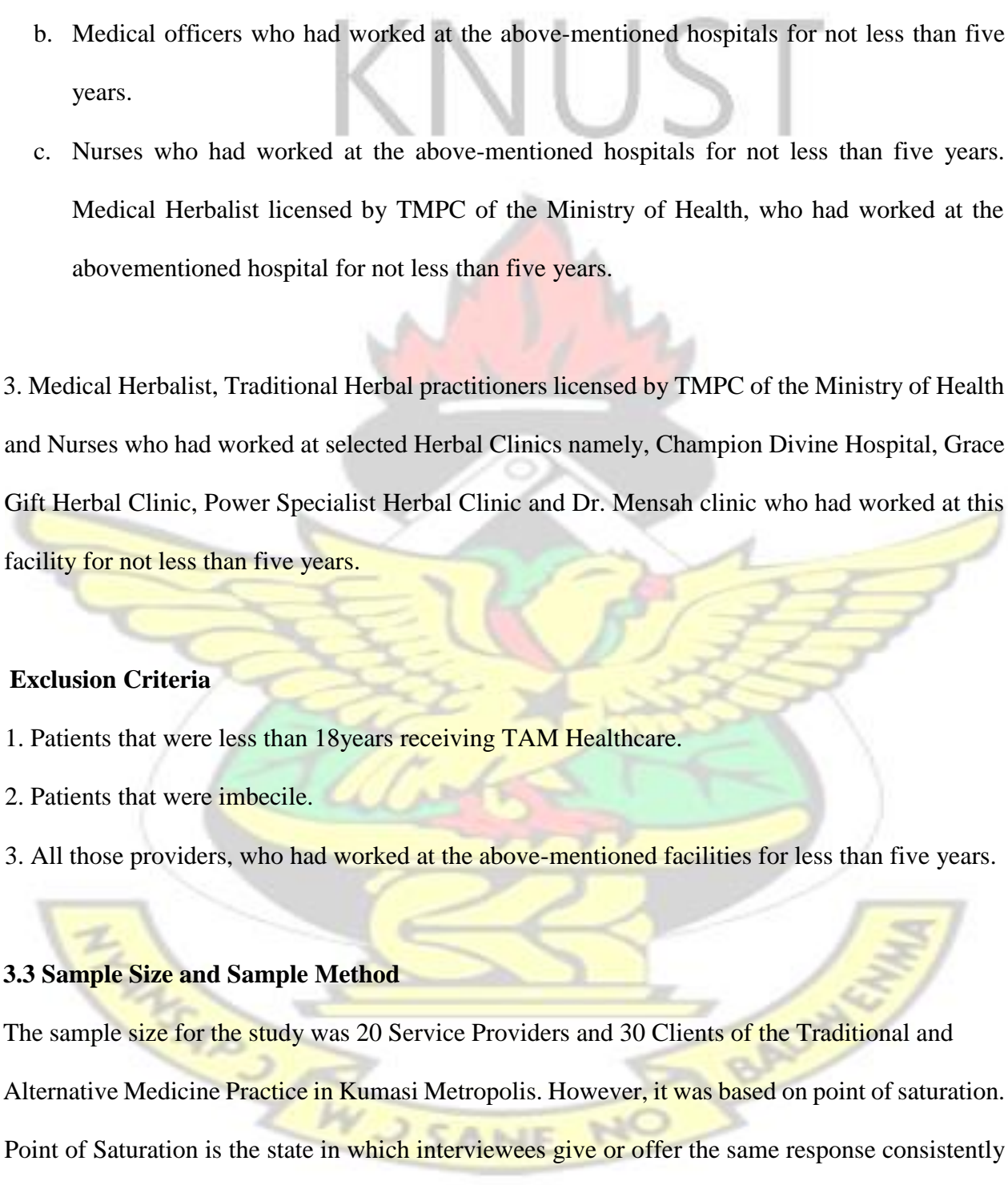
The study was qualitative using exploratory cross-sectional study design. A cross-sectional study is defined as an observation research type that analyzes data variables collected at one given point of time across a simple population (Hennekens, 1987). The study was conducted in Kumasi Metropolis in August 2019 and completed in September 2019.

3.2 Study Population

The study population consisted of Providers and Clients. The providers included Hospital Administrators, Medical Superintendents, Medical Herbalist and Nurses. The clients were patients and caretakers at the various hospitals under study.

Inclusion Criteria

1. Clients between the ages of 18- and 80-years receiving TAM Healthcare from the selected facilities provided they were neither senile nor imbecile. Also care-takers (parents, guardians, relatives, etc.), who brought their relatives were interviewed.
2. Providers of Kumasi South Government Hospital, Suntreso Government Hospital and Tafo Government Hospital. This included;

- 
- a. Administrators who had worked at the above-mentioned hospitals for not less than five years.
 - b. Medical officers who had worked at the above-mentioned hospitals for not less than five years.
 - c. Nurses who had worked at the above-mentioned hospitals for not less than five years.
- Medical Herbalist licensed by TMPC of the Ministry of Health, who had worked at the abovementioned hospital for not less than five years.

3. Medical Herbalist, Traditional Herbal practitioners licensed by TMPC of the Ministry of Health and Nurses who had worked at selected Herbal Clinics namely, Champion Divine Hospital, Grace Gift Herbal Clinic, Power Specialist Herbal Clinic and Dr. Mensah clinic who had worked at this facility for not less than five years.

Exclusion Criteria

1. Patients that were less than 18years receiving TAM Healthcare.
2. Patients that were imbecile.
3. All those providers, who had worked at the above-mentioned facilities for less than five years.

3.3 Sample Size and Sample Method

The sample size for the study was 20 Service Providers and 30 Clients of the Traditional and Alternative Medicine Practice in Kumasi Metropolis. However, it was based on point of saturation. Point of Saturation is the state in which interviewees give or offer the same response consistently and continuously. (Johnson, 2006)

3.4 Data Collection Technique and Tool

The data was collected using semi-structured interview guide. The data was collected by the researcher. The researcher used English and Twi as a medium for the interview for the providers and clients respectively. However, English Language was used for clients who could communicate in English. The interviews were audio recorded. The types of data collected from the clients were their views and experiences with the integration of TAM into routine healthcare delivery, challenges with the integration and suggestions to overcome those challenges. Also, the same data were collected from the providers. Prior to the data collection, the interview guides were piloted at Vednan Medical and Natural Health Center Scientific Medical and Herbal Hospital. The feedback from the pilot was used to modify the interview guide where necessary.

3.5 Data Analysis

The data was analyzed thematically facilitated by manual analysis. The interviews conducted in English Language were transcribed verbatim. However, for those conducted using Twi language was translated into English before transcription verbatim. Initial codes applied were sorted into potential themes. These themes included views and experience with integration of TAM into routine healthcare delivery, Challenges with the integration and suggestions to overcome those challenges.

3.6 Ethical Consideration

The researcher sought ethical clearance from the Committee on Human Research Publication and Ethics of the Kwame Nkrumah University of Science and Technology (Reference Number:

CHRPE/AP/489/19). An information sheet was used to explain to the respondents, the essence of the studies. Those who agreed to partake in the study were given a consent form to either sign or thumb print. All respondents were assured of total confidentiality and the data obtained were used for the research purpose only. The study interview guide was structured in such a way that would be on anonymity basis.



3.7 Strengths and Weaknesses of Qualitative Research

The following are the strengths and weaknesses of Qualitative Research

3.7.1 Strengths (Advantages) of Qualitative Research

1. **Subject materials can be evaluated with greater detail.**

Qualitative Research focuses less on the metrics of the data that is being collected and more on the subtleties of what can be found in the information. This allows the data to have an enhanced level of detail to it which can provide more opportunities to glean insights from it during examination.

2. **Research frameworks can be fluid and based on incoming or available data.**

Qualitative research offers a different approach. It can adapt to the quality of information that is being gathered. If the available data does not seem to be providing any results, the research can immediately shift gears and seek to gather data in a new direction. This offers more opportunities to gather important clues about any subject instead of being confined to a limited and often self-fulfilling perspective.

3. **Gathered data has a predictive quality to it.**

One of the common mistakes that occurs with qualitative research is an assumption that a personal perspective can be extrapolated into a group perspective. At the very least, the data has a predictive quality for the individual from whom it was gathered.

4. **Qualitative research operates within structures that are fluid.**

Because the data being gathered through this type of research is based on observations and experiences, an experienced researcher can follow-up interesting answers with additional questions. Unlike other forms of research that require a specific framework with zero

deviation, researchers can follow any data tangent which makes itself known and enhance the overall database of information that is being collected.

Other strengths of Qualitative Research includes:

7. **Data complexities can be incorporated into generated conclusions.**
8. **Qualitative research is an open-ended process.**
9. **Qualitative research can create industry-specific insights.**
10. **Smaller sample sizes are used in qualitative research, which can save on costs.**

3.7.2 Weaknesses (Disadvantages of Qualitative Research)

1. **The quality of the data gathered in qualitative research is highly subjective.** This is where the personal nature of data gathering in qualitative research can also be a negative component of the process. It can also lead to data that is generalized or even inaccurate because of its reliance on researcher subjectivisms.

2. **Data rigidity is more difficult to assess and demonstrate.**

Because individual perspectives are often the foundation of the data that is gathered in qualitative research, it is more difficult to prove that there is rigidity in the information that is collective.

3. **Qualitative research creates findings that are valuable, but difficult to present.** That is why findings from qualitative research are difficult to present. What a research gleans from the data can be very different from what an outside observer gleans from the data.

4. **Data created through qualitative research is not always accepted.**

Because of the subjective nature of the data that is collected in qualitative research, findings are not always accepted by the scientific community. A second independent qualitative

research effort which can produce similar findings is often necessary to begin the process of community acceptance.

Other Weaknesses of Qualitative Research include:

- 5. Researcher influence can have a negative effect on the collected data.**
- 6. Replicating results can be very difficult with qualitative research.**
- 7. Difficult decisions may require repetitive qualitative research periods.**
- 8. Unseen data can disappear during the qualitative research process.**
- 9. Qualitative research is not statistically representative.**

The one disadvantage of qualitative research which is always present is its lack of statistical representation.

In conclusion, the advantages and disadvantages of qualitative research make it possible to gather and analyze individualistic data on deeper levels. This makes it possible to gain new insights into consumer thoughts, demographic behavioral patterns, and emotional reasoning processes. When a research can connect the dots of each information point that is gathered, the information can lead to personalized experiences, better value in products and services, and ongoing brand development.

CHAPTER FOUR

RESULTS

4.1 VIEWS AND EXPERIENCE OF PROVIDERS AND CLIENTS

Most of the providers mentioned, collaboration between allopathic and herbal medicine, removal of myth surrounding herbal medicine, elimination of fake and unlicensed practitioners as some of benefits of integration of TAM:

I am certain the integration of TAM will bridge the gap between Allopathic and Herbal Medicines, remove obstacles, stigmatization of herbal practitioners, myths surrounding herbal Medicine practice, create mutual understanding between Allopathic and Herbal Medicine Practitioners and help address some chronic issues and improve the referral system in the country (Provider: Interviewee 1).

In my views, the integration of TAM into routine Healthcare will address the quack or fake practitioners in the industry. It will help introduce a synergistic activity into the healthcare system which will speed up recovery (Provider: Interviewee 2).

On the part of the clients, they mentioned elimination of charlatans, fake and unlicensed practitioners, improvement of quality and safety of herbal products and elimination of myth surrounding traditional medicine practices as some of the benefits with integration of TAM into routine healthcare:

I believe the integration will help eliminate fake or quack practitioners who are exploiting clients from the herbal industry to provide quality healthcare (Client: Interviewee 1).

In my views, the integration will help improve the quality of herbal products as most of the drugs will then be properly examined and tested for its safety, quality and efficacy (Client: Interviewee 18).

I believe the integration will help remove the myth surrounding herbal medicine and give quality assurance of the products (Client: Interviewee 3).

On sustainability of TAM into routine healthcare delivery, most of the providers mentioned that approved herbal medicine for market authorization and for the treatment of diseases will reduce the importation of foreign drugs, creating jobs opportunities and consequently help promote and sustain the herbal industry:

I am very sure the integration of TAM into routine healthcare delivery will help reduce the importation of Pharmaceutical drugs for management of chronic diseases, where herbal medicine has proven to be effective in its management (Provider: Interviewee 10).

I think the integration will help create jobs in the herbal industry, from the cultivation of raw materials, production of the finished products, distribution of the products to the health facilities and pharmaceutical and herbal shop. Also, some of the products will be exported to the neighboring countries. This will help improve the economic activities in the country,

stabilizing the Ghanaian cedis, reducing inflation and the general performance of the economy (Provider: Interviewee 8).

In the view of the clients, effective collaboration and cooperation between herbal and orthodox practitioners would ensure sustainability of TAM integration into routine healthcare delivery: *I am very sure the integration will help bring collaboration between allopathic and TAM and help improve the referral system of both practices thereby saving life and reducing cost (Client: Interviewee 4).*

I am certain and confident, the integration of TAM into routine health care system will improve the skills and competencies of the practitioners (Client: Interviewee 5).

The integration will help bring about the understanding of TAM practices and its overall recognition in the health delivery system in Ghana (Client: Interviewee 6).

Finally, majority of the providers were of the view that manpower development, capacity building and adequate research into herbal medicine and effective sensitization are very crucial for successful integration of TAM into routine health care delivery system:

In my opinion the procedures and technicalities involved in the Herbal Medicine practice should be improved by educating and training practitioners on good manufacturing practices, standardization, dosage level, safety, and quality assurance. in healthcare delivery (Provider: Interviewee 1).

I think the integration of TAM into routine Healthcare will bring about adequate sensitization of Herbal Medicine to the general public and its importance in health care delivery. Also, it will help set standards for both manufacturing of products and treatments of patients using Herbal Medicines (Provider: Interviewee 6).

I believe the integration will enable scientific research and development into medicinal plant thereby improving the quality and efficacy of the products in the administration of healthcare. (Provider: Interviewee 12).

4.2. CHALLENGES ASSOCIATED WITH TAM INTEGRATION

Resource constraint;

Most of the Providers mentioned inadequate funding, poor infrastructure and medical equipment:

I believe resource constraints and inadequate collaboration and cooperation are a major challenges associated with the integration of TAM into routine healthcare delivery system in Ghana (Provider: Interviewee 8).

In my opinion, inadequate continuous professional development training and capacity building for herbal medicine professionals, coupled with, inadequate funding for research into traditional medicine plants. (Provider: Interviewee 11)

Also, some of the providers mentioned absence of liaison officer between orthodox and traditional practitioners, inadequate man power development, capacity building and absence of motivation for herbal practitioners as fundamental challenges of the integration:

In my opinion absence of adequate government policy to bridge the gap between allopathic and TAM is a major setback of integration (Provider: Interviewee 6).

Am of the view that absence of a coordinator or liaison officer who understands both allopathic and herbal medicine and can identify the practical gaps between allopathic and herbal practitioners and can provide policies and programs to address challenges between them, is a major setback for the TAM integration into routine Health care system (Provider: Interviewee 5).

On the part of the clients, majority of them mentioned limited space of the herbal units, inadequate diagnostic materials and limited number of nurses and other paramedical staff at the herbal unit:

I have the reason that the herbal facilities at various hospitals don't have adequate infrastructure, equipment and enough logistics at the facilities (Client: Interviewee 14).

I have realized the herbal units at the various hospitals under study have very limited space and premises to accommodate clients and also that there are few herbal practitioners to attend to clients (Client: Interviewee 15).

I am convinced for what I am seeing that, inadequate resources, equipment, plants and other materials for the production of quality, safe and efficacious herbal products for proper diagnosis of diseases and main challenges confronting the integration of TAM (Client: Interviewee 3).

Also, majority of the clients had concern with efficacy, safety and quality of the herbal products, as well as the exclusion of approved herbal medicine on the National drug list as major obstacles for the integration;

I would say, the herbal products should be sent to relevant centers for laboratory examination to ascertain their quality, side effects and safety before market authorization (Client: Interviewee 11).

I have the reason that the cost of herbal treatment, especially chronic diseases is very high because the drugs are not listed with NHIS (Client: Interviewee 12).

Finally, clients expressed concern about low level of awareness of herbal medicine practice in selected government hospitals as a challenge to the integration:

I admit inadequate sensitization as well as public knowledge of herbal units at the government designated and approved hospitals is not strengthening the integration of TAM (Client: Interviewee 16).

It took me several time to know that herbal medicine is also available in this hospital (Client: Interviewee 17).

'Eiiiii,, I asked many people before getting to know this place (Client: Interviewee 13).

I have gone to many orthodox hospitals, all to no avail, before an old friend show me this Place and If I had known this place earlier, my condition wouldn't have reached this far (Client: Interviewee 4).

4.3. SUGGESTIONS TO OVERCOME CHALLENGES OF TAM INTEGRATION

Majority of the providers suggested Continuous Professional Development programme as a capacity programme for TAM practitioners as a way of bridging knowledge gap:

I suggest that, the herbal practitioners should be involved in capacity building to help them improve their skills and manpower development thereby bridging the gap between both practitioners (Provider: Interviewee 5).

Also, majority of the providers suggested involvement of herbal practitioners in decision making at the hospital to strengthen collaborations between herbal and orthodox practitioners:

I suggest that Medical Herbalist who are superintending over the herbal unit at the facilities should be involved in the overall decision making in the hospital (Provider: Interviewee 15).

I suggest that both the orthodox and herbal practitioners work side by side remove barriers and help avoid mistrust among them (Provider: Interviewee 12).

I will suggest that every necessary arrangement be made to bring both orthodox and herbal practitioners to understand that they are fighting a common 'enemy', diseases and ailments. (Provider: Interviewee 14).

Additionally, majority of the providers suggested the need for effective policy framework to be formulated to address problems confronting sustainability, affordability and efficacy of herbal products:

I suggest that, effective legal and regulatory framework should be formulated by all relevant stakeholders to help address challenges and other issues which are inimical for the sustainability of TAM integration (Provider: interviewee 9).

In my opinion, concrete steps should be taken to solidify the integration of TAM to enhance quality, affordable, accessible and available healthcare delivery system in Ghana (Provider: interviewee 16).

Finally, majority of the clients suggested that policy makers and other relevant stakeholders should create the needed resources as well as provide conducive milieu to improve access to quality and affordable health care delivery to the citizens:

I suggest that, approved herbal drugs for treatment of diseases should be enlisted on NHIS drug list to help reduce cost and easy access to healthcare (Client: Interviewee 12).

For me, the government and other relevant stakeholders in the industry should provide logistics support to the herbal unit at the various hospitals in order to enhance and promote TAM Integration (Client: Interviewee 13).

In my opinion, the government should provide adequate financial and human resources for the herbal unit at the piloted hospitals to improve quality, affordable and available health care (Client: Interviewee 19).

I suggest the stakeholders should improve the sensitization of TAM treatment to the populace (Client: Interviewee 14).

I suggest there should be improvements in research and development of herbal medicine to help address the problem of safety, quality and efficacy of the herbal medicine products. (Client: Interviewee 15).

CHAPTER FIVE

DISCUSSION

5.1 VIEWS AND EXPERIENCES ON TAM INTEGRATION

The study was conducted to explore lesson learnt from the views and experiences providers and clients on the integration of traditional and alternative medicine into routine healthcare delivery system. The study established and showed that all respondents had ever used traditional and or alternative medicine in their life time and therefore had in-depth understanding and better appreciation of medicinal herbs. The study therefore corroborates with a study conducted in Manila on harmonization of orthodox medicine and traditional for the well-being, Manila: WHO,

(2000) Respondents (providers and clients) indicated removal of fake, charlatans and unlicensed practitioners, inter alia, were some of the benefits to be derived from the integration of TAM, into routine health care delivery system. Majority of respondents were of the views that traditional medicine has been infiltrated by charlatans and people of questionable characters, parading themselves as practitioners, but with the sole aim of exploiting and defrauding vulnerable clients. They were therefore of the view that the integration will provide the needed regulatory and ethical framework, for the supervision, licensing, surveillance and enforcements backed by sanctions. The respondents were of the views that absence of a Liaison officer to bridge the gap between Ghana Health Service, and Traditional and Alternative Medicine Practice Council, does not promote guarantee healthy collaboration between orthodox and herbal practitioners at the hospital level for efficient and total health system delivery. This absence had created a major gap between these institutions. Therefore, supervision, monitoring and evaluation of the integration, at hospital's level to ensure smooth implementation of the policy was seriously undermined, negating mutual collaboration and co-operation between the allopathic and posing greater threat to sustainability of the integration. Although studies show that it is an undeniable fact that efforts are being made by policy makers, to bridge the disjoint between the conventional health system and TAM. This is to form an integrated health services which meets the new demands of healthcare WHO (2013). However, this integration process has been slow and there seem to be lack of cooperation and challenges between orthodox medicine practitioners and TAM practitioners. Hillenbrand (2006). There is a lot to be learnt from TAM and its benefits to society that can be tremendously improved and maximized when integrated with orthodox medicine. The integration of TAM has enabled lots of research into diverse medical plants for its quality, safety, efficacy in the treatment and management of many chronic diseases. A study in the Carribean revealed that

traditional medicines were perceived to be more efficacious in some instances or as equally as effective as orthodox medicines (Clement et al., 2007)

These researches are carried out by Center for Scientific Research into Plant medicine, Noguchi Center for Medical Research, School of Pharmacy, at KNUST to ensure standardization of products and quality assurance and its concomitant approval by the Food and Drugs Authority for market authorization. This help reduce the level of quack practitioners and fake drugs in the practice, which hitherto were rife the industry. The integration had brought about significant improvement in the area of sensitization and safeguard and control the practice of TAM. The general populace has become cognizant of the relevance of Herbal Medicine practice to the individual and the country as a whole. The sensitization, as a result of the integration into the routine healthcare system, has reduced the myth and fetishism associated with TAM practices where Herbal Medicine is a major component. Clients interviewed undoubtedly, demonstrated their beliefs and understandings of TAM, and further indicated the safety, quality and efficacy of the herbal medicine in the treatment of chronic diseases. Majority (80%) of the clients interviewed, from the various facilities, to wit, Kumasi South Government Hospital, Suntreso Government Hospital and Tafo Government Hospital, (out of 20 patients), indicated great improvement in their lives since placed and administered with herbal medicines for various chronic diseases. The interviewees also expressed their satisfaction and delightfulness for the treatment undergone at the facilities, notwithstanding the cost involved. According to majority of clients (patients and caretakers), they now prefer herbal and alternative medicine to allopathic medicine because it is natural, safe, and with little or no side effect. Furthermore, a great number indicated that, their chronic ailments did not show any improvements after using allopathic medicines for many years, consequently, their choice for TAM treatments. Finally, most of the clients were delighted that the

integration had help remove the myth surrounding the practice and use of TAM Products, which hitherto, was perceived fetish, and uncivilized. One client, narrated how she was ridiculed, rebuked and even insulted and turned away, simply because, she honestly told a lady medical officer, she tried using herbal medicine when she was pregnant.

5.2 CHALLENGES ASSOCIATED WITH INTEGRATION OF TAM INTO ROUTINE HEALTH CARE DELIVERY SYSTEM

The integration of TAM into routine health care delivery system is confronted with several challenges, among others were resource constraints and governing policies to regulate and supervise the integration of TAM into routine health care. A major resource constraint associated with the integration at the Hospital level was the absence of a well-established Herbal unit for the treatment of patients and its activities. There were inadequate consulting rooms for medical herbalist and nurses. Absence of equipment and machines for diagnosis and treatment of patients are major challenges at the facility. Herbal Medicines to be used for treatment are not included at the various regional and district Medical Stores and therefore not under the management of the regional and district health directorate who are supposed to supervise, monitor and evaluate the integration of TAM at the various hospitals. The Herbal medicines to be used by the qualified Medical herbalist are transported directly from the research center to the facility as when needed by the facility. Besides, the various medical herbal unit at the hospitals do not have well established dispensing unit for safe keeping and good preservation of the drugs transported from the research center. This impedes the work and operations of the herbal unit as drugs are always inadequate for the treatment of patients. This affects the effectiveness and efficiency in the treatment of diseases thereby causing resentment and disappointment among patients and clients.

The cost of service at the herbal unit is undoubtedly, higher compared to same service delivered by the allopathic practitioners within the same facility because of the non-enlistment of the herbal under the NHIS scheme.

The initial policy of the integration as formulated by the Ministry of Health on pilot basis in selected hospitals and areas. Pursuant to the high level of patronage of Herbal Medicine by the populace, there is the need for the extension of the integration of TAM in all district hospitals, this will be in line with WHO (2013) report that about 70% to 95% people resort to TAM mainly because it is readily available, accessible, affordable and acceptable as well as consistent with indigenous cultures, traditions and ethnics groupings. According to Hensel, (2015), Traditional Medicine in Ghana particularly herbal medicine is an important component of the people. Training and manpower development for allopathic medical officers, medical herbalist, nurses and administrators of the various hospitals is very critical with the integration of TAM into routine health care delivery. This ensures skill acquisition, capacity building, competency and overall manpower development for the improvement in betterment of the integration of TAM in the development of healthcare system in Ghana. This will help ensure understanding of integration, collaboration, co-operation and participation of all the major stakeholders under the Ministry of Health.

Notwithstanding, the numerous benefits enumerated by clients, indicated among others, supra, majority of the clients expressed their frustrations and disappointments about the absence of well-established herbal units, at the various government hospitals, under the study, about 98% expressed shock about the size of the consulting room, which one of the clients referred to it as ‘not even up to the size of a wash room’. In Tafo government hospital, the Medical herbalist, which numbered about 4, don’t have even one consulting room. Consequently, they have to wait until 2pm after an

allopathic medical officer closes before they could have a place to work. This according to majority of the clients, is a major obstacle to the integration of TAM. All the clients participated admitted that the greatest challenge confronting them which according to them, is against their constitutional and fundamental human rights, as Ghanaians, is the absence of certified and approved herbal medicines by the Food and Drugs Authority (FDA), on the National Health Insurance Drugs List. According to them is an offence NHSA, 2003, (Act. 650), for one not to be enlisted on the NHIS, and there sees the non-inclusion of herbal medicine, which according to WHO, (2013), between 70% and 90%, people resort to TAM treatment, because of its readily availability, accessibility, acceptability, safety, efficacy, and little or no side effect. Another major challenge to the integration is inadequate logistics support at the herbal units, in terms of tools and machines, necessary for effective performance and treatments of patients. Finally, inadequate sensitization and public knowledge about the establishment of herbal units at selected and piloted government hospitals, derail accessibility and availability of patronizing the service, thereby destabilizing the very foundation of the integration TAM practices.

5.3 SUGGESTIONS TO OVERCOME CHALLENGES OF TAM INTEGRATION

It is reflected in the study outcomes that, education, training and general capacity building of medical practitioners are the corner stone to strengthening and fortifying modernization of TAM to ensure the success of the integration and overall improvement of the healthcare delivery system of Ghana. This was indicative fact established by all the respondents and therefore manpower development of both TAM practitioners and Allopathic medical practice were an equivocally embraced as a significant mechanism towards medical integration.

In an attempt to improve upon TAM services and make it easy to regulate, studies have suggested the incorporation of TAM into the health care system to enhance and health outcomes (Gyasi, 2014; Gyasi et al., 2011; Kretchy, Owusu-Daaku, & Danquah, 2014).

Absence of rudimentary education and training for practitioners, Allopathic and TAM will serve a major barrier to the acceptance of the technical know-how and new technologies by the practitioners. Usually, safety, efficacy and general quality of TAM is limited by teething problems associated with standardization, preparation processes and recommended dosage.

This study shown that majority of the practitioners have never participated in any forum or workshop or seminar on each other and therefore had poor knowledge in this regard. There were no established institutions for training TAM practitioners and their trainers. Furthermore, it is also established fact that there is no TAM component in the syllabi for the training of allopathic medical practitioners. Also, absence of motivation for allopathic practitioners who embarked upon TAM training programmes.

Another major challenge affecting TAM practices and its integration is related to absence of information on TAM practitioners as in regards their qualification, registration, location, number of practitioners and the products used in their practice in other to determine the exact efficacy, safety and quality of their medicine. TAM practitioners are not well organized for manpower development registration, certification and also clinical trials for effectiveness. These are therefore a major cause for the proliferation of large number of vendors and peddlers in the industry which promotes quackery and fake practice. To achieve the incorporation and integration of TAM into National Healthcare programs and systems measures and standards should be established to distinguish qualified practitioners and practices.

Although, some aspects of TAM have proven efficacious and safe in dealing health problems. It is suggested that proper evaluation mechanisms be established by government through centers for clinical pharmacology and therapeutics such as Noguchi Memorial Institute for Medical Research (NMIMI), CSIRPM and other research faculties in the universities. The results should be certified by Ghana Standard Authority (GSA) for standardization and further approved by Food and Drugs Authority (FDA) for market authorization.

Despite the recent interest in molecular modelling, combinatorial chemistry, and other synthetic chemistry techniques by pharmaceutical companies and funding organizations, natural products, and particularly medicinal plants, remain an important source of new drugs, new drug leads, and new chemical entities (NCEs) (Newman, 2003).

TAM practitioners should be certified and licensed by TMPC with the view to enhancing the practice and eliminating quacks and charlatans in the industry.

Inspection, monitoring and evaluation and enforcement by TMPC and other government enforcement agencies to prosecute and punish uncertified practitioners who put the name of TAM into opprobrium, thereby solidifying the integration.

This study brought to light herbal medical use has been established in three government health care facilities within the Kumasi Metropolis namely, Kumasi South Hospital, Suntreso Hospital and Tafo Hospital. However, it was established these herbal units despite the people's general preference for the practice. Nonetheless, none of these units have had their medicine listed with NHIS scheme resulting in few cost recoveries by their clients. This serves as a great deceptive to the general objective of the integration of TAM. Consented effort and measures must be introduced in these facilities for the inclusion of their herbal medicines on the NHIS drug plan.

All the participants interviewed suggested the inclusion of approved herbal medicine by the FDA on the NHIS Drugs list to help reduce cost of treatment, to enhance promotion and patronizing use of herbal medicine for treating, especially chronic diseases

Existing herbal units in all government hospitals should be expanded and equipped with adequate logistics support, to improve and enhance its operations. More herbal units should be established, while adequate sensitization and education be carried out by the Ministry of health, Ghana Health Service, TMPC, and other relevant stakeholders in the industry to drive home the essence of integration of TAM, in the overall health delivery system in Ghana.

CHAPTER SIX

CONCLUSIONS AND RECOMMENDATIONS

6.1 CONCLUSION

VIEWS AND EXPERIENCE OF PROVIDERS AND CLIENTS ON TAM INTEGRATION

TAM integration into routine healthcare delivery system has controlled fake and unlicensed practitioners, improved efficacy, safety and quality of herbal medicine in the treatment of disease.

CHALLENGES WITH INTEGRATION TAM INTO ROUTINE HEALTHCARE DELIVERY

The challenges with integration of TAM into routine healthcare delivery were; resource constraints, lack of collaboration between herbal and orthodox medicine, ineffective sensitization and inadequate manpower development coupled with the absence of effective research into herbal medicine.

SUGGESTION TO OVERCOME CHALLENGES WITH TAM INTEGRATION INTO ROUTINE HEALTHCARE DELIVERY

Based on the outcome of the study, it was suggested that adequate resources, effective capacity building for practitioners, inclusion of approved herbal drugs onto Nation Health Insurance drug list and effective policy and regulatory framework should be established to overcome some of the challenges confronting the integration.

6.2 RECOMMENDATION

1. It is recommended that, the Ministry of Health should establish a coordinating unit or a liaison office that will coordinate between the Ghana Health Service and TMPC activities to enhance the level of integration of TAM into routine Healthcare delivery system in Ghana.
2. The Ministry should establish more research institutions in every region of Ghana to enhance research and development of Medicinal plants to improve standardization of

efficacy, safety and quality Herbal Medicine to ensure quality assurance and effectiveness of Herbal products.

3. The GHS TMPC, FDA and other relevant agencies should organize periodic Continuous Professional Development Programs for both TAM practitioners and allopathic practitioners to improve professional competence, skills and manpower development for total health care.
4. It is also recommended that, all approved herbal medicines by FDA for market authorization should be included in the NHIS Drug list to reduce cost for treatment and enhance access to quality, safe and affordable health care.
5. Further research should be carried out to assess the level of satisfaction with the use of Herbal Medicine in Health care delivery.
6. Also, further research should be carried into faith based traditional healing practices (healing camps and churches using anointing oils and other natural substances for healing) in the country.

REFERENCE

- Aboagye, E. (2012). Old Age Dependence on Family Support: The Effect of Health Insurance Intervention. Master's Thesis in Health economics, Policy and Management, University of Oslo.
- Adams, J., Sibbritt, D. and Lui, C. (2011a). The urban-rural divide in complementary and alternative medicine use: a longitudinal study of 10,638 women. *BMC Complement and Alter Med*, 11:2. <http://www.biomedcentral.com/1472-6882/11/2>.
- Adams, J., Sibbritt, D., Broom, A., Loxton, D., Pirota, M., Humphreys, J. and Lui, C. (2011b). A comparison of complementary and alternative medicine users and use across geographical areas:

A national survey of 1,427 women. BMC Complementary and Alternative Medicine, 11:85.
<http://www.biomedcentral.com/1472-6882/11/85>.

Adams, J., Sibbritt, D. and Young, A. (2009). A longitudinal analysis of older Australian women's consultations with complementary and alternative medicine (CAM) practitioners, 1996-2005. Age Ageing, 38:93-99.

Aday, L. A. and Andersen, M. R. (1974). A framework for the study of access to medical care. Health Services Research, 9: 208-220.

Addae-Mensah, I. (1992). Towards a National Scientific Basis for Herbal medicine – A Phytochemists two decade contribution. Accra Ghana, University Press.

Addai, E. and Gaere, L. (2001). Capacity building and Systems Development for SWAPs: The Experience of the Ghana Health Sector.

Adewunmi, C. O. and Ojewole, J. A. O. (2004a). Safety of TRMs, Complementary and Alternative Medicines in Africa. Afr. J. Trad. CAM, 1: 1-3. Editorial.

Adewunmi, C. O. and Ojewole, J. A. O. (2004b). Are Institutions Ready to Empower Local Herbalist? Afr. J. Trad. CAM, 2 (1): 1-3. Editorial.

Adewunmi, C. O. (1999). Medicinal plants, parasites and snails in health. Obafemi Awolowo University, Ile-Ife, Inaugural Lecture series, 132:13,22.

Addo, V. N. (2007). Herbal Medicines: socio-demographic characteristics and pattern of use by patients in a tertiary obstetrics and gynaecology unit. Journal of Science and Technology, Vol. 27, No. 3: 149-155.

Adjei, P. O. and Buor, D. (2012). From poverty to poor health: Analysis of socioeconomic pathways influencing health status in rural households of Ghana. Health Sociology Review, Vol. 21, No. 2: pp. 232-241. (doi: 10.5172/hesr.2012.21.2.232)

Adjei, S. (1989). Ways in which the design and delivery of health services may influence uptake: methods of enquiry. Journal of Health Transition Methods and Measures, Vol. 29, Pg. 197.

Aghion, P., Howitt, P. and Murtin, F. (2010). The relationship between health and growth: When Locas meets Nelson-Phelps. Bruegel Working Paper, 2010/04.

Agyare, C. Mensah, A. Y. and Osei-Asante, S. (2006). Antimicrobial Activity and Phytochemical Studies of some Medicinal Plants from Ghana. Boletin Latinoamericano y del Caribe de Plantas Medicinales y aromaticas, Chile.



APPENDIX I: INTERVIEW GUIDE FOR PROVIDERS

1) May you please tell me your views and experiences on integration of TAM into routine Health delivery system in Ghana?

Understanding of TAM into routine Healthcare delivery

Benefits

Sustainability

Education and Training workshop

Political support

Program Evaluation

Partnership

(a) Understanding of the integration of TAM into routine health care delivery?

2) In your opinion, are there any challenges associated with integration of TAM into routine health care delivery system in Ghana?

Resource constraints

Human resource

Equipment and materials

Financial constraint

Policy changes and issues

3) May you please tell me some of the suggestions to overcome or address the above challenges?

Level of involvement in decision making

Suggested policy or broad changes

Training

Effective legal and regulatory framework

Capacity building

APPENDIX II: INTERVIEW GUIDE FOR CLIENTS

1) May you please tell me your views and experiences on integration of TAM into routine Health delivery system in Ghana?

Understanding of TAM into routine Healthcare delivery

Benefits

Sustainability

Availability of TAM

Location of TAM

(b) Understanding of the integration of TAM into routine health care delivery?

- 2) In your opinion, are there any challenges associated with integration of TAM into routine health care delivery system in Ghana?

Efficacy Test

Safety of drugs

Information asymmetry

Uniformity

Quality issues

- 3) May you please tell me some of the suggestions to overcome or address the above challenges?

Education

Accessibility

Affordability

Provision of essential TAM drugs list

Patronage of TAM

APPENDIX III: CONSENT FORM AND INFORMATION SHEET

CONSENT FORM

Title of Project: Integration of traditional and alternative medicine into routine health care delivery system in the Kumasi metropolis of Ashanti region, Ghana

Name of Researcher: Stephen Osei-Agyepong Nyedua

Please cross box

1. I confirm that I have read and understand the information sheet dated..... for the [] above study and have had the opportunity to ask questions.

2. I understand that my participation is totally voluntary and that I am free to withdraw at any time, without giving any reason, without my legal rights being infringed upon. []

3. I agree to take part in the above study. []

Name of subject

Date

Signature/thumbprint

Name of Person taking consent

Date

Signature

Researcher: Stephen Osei-Agyepong Nyedua

Date

Signature

SHEET

You are being invited to take part in a research study, aimed at examining the Integration of traditional and alternative medicine practices into routine health care delivery system in the Kumasi metropolis of Ashanti region, Ghana.

Before you decide to take part in this study, it is important for you to understand why the research is being done and what it will involve. Please take some time to read the following information carefully and discuss it with others if you wish. Ask the researcher if there is anything that is not clear or if you would want more information. Take time to decide whether or not you wish to take part.

Who is conducting the study?

The study is being conducted by Stephen Osei-Agyepong Nyedua, a student being supervised by Dr. Kofi Akohene Mensah of Kwame Nkrumah University of Science and Technology, Department of Community Health, Kumasi.

What is the purpose of the study?

The study is about examining the Integration of traditional and alternative medicine practices into routine health care delivery system in the Kumasi metropolis of Ashanti region, Ghana. The field work for this study begins in June 2019 and will continue until July 2019.

Why have I been asked to take part?

You have been chosen to represent the views of clients and providers who use or produce traditional and alternative medicine.

What would be involved?

The interview will be conducted at a designated place of the facility where you will feel more comfortable. The questions will ask about clients' and providers perception and experience on the integration of TAM practices in the routine health care delivery system.

What happens next?

If you are interested in taking part in this study then a consent form will be given to you to sign to affirm your willingness to take part in the study.

Do I have to take part?

It is up to you to decide whether or not to take part. If you do decide to take part you will be given this information sheet to keep and be asked to sign a consent form. If you decide to take part you are still free to withdraw at any time and without giving reason.

What are the benefits of taking part?

There may be no direct benefits of filling the questionnaire. However, you will be providing useful and important information, which will contribute to the sustainability of the integration of TAM practices in routine health care delivery in Ghana. **Will my taking part in this study be kept confidential?**

All information which is collected about you during the course of the study will be kept strictly confidential. No names will be recorded and so it will not be linked to you in anyway in the report of this study. However, your participation in this study is entirely voluntary.

What will happen to the results of the research study?

The results of the study will be presented to the Community Health Department of Kwame Nkrumah University of Science and Technology and also published in academic journals. If you wish, you can obtain a copy of the published results by contacting Stephen Osei-Agyepong Nyedua. You will of course not be identified in the final report or publication.

Who is organizing and funding the research?

The research is being undertaken by Stephen Osei-Agyepong Nyedua, a student at the Kwame Nkrumah University of Science and Technology under the supervision from an academic lecturer. The student is funding this research.
Thank you for reading this.

KNUST





KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY
COLLEGE OF HEALTH SCIENCES

SCHOOL OF MEDICAL SCIENCES / KOMFO ANOKYE TEACHING HOSPITAL
COMMITTEE ON HUMAN RESEARCH, PUBLICATION AND ETHICS



Our Ref: CHRPE/AP/489/19

15th August, 2019.

Mr. Stephen Osei-Agyepong Nyedua
Department Health Policy
Management & Economics
School of Public Health
KNUST-KUMASI.

Dear Sir,

LETTER OF APPROVAL

Protocol Title: *"Integration of Traditional and Alternative Medicine into Routine Health Care Delivery Systems in the Kumasi Metropolis of Ashanti Region, Ghana."*

Proposed Site: *Kumasi South Hospital and Suntreso Government Hospital.*

Sponsor: *Principal Investigator.*

Your submission to the Committee on Human Research, Publications and Ethics on the above-named protocol refers.

The Committee reviewed the following documents:

- A notification letter of 24th June, 2019 from the Kumasi South Hospital (study site) indicating approval for the conduct of the study at the Hospital.
- A notification letter of 13th June, 2019 from the Department of Health Policy Management & Economics, KNUST seeking permission to conduct the study at the Suntreso Government Hospital (study site) and it was approved.
- A Completed CHRPE Application Form.
- Participant Information Leaflet and Consent Form.
- Research Protocol.
- Interview Guide.


The Committee has considered the ethical merit of your submission and approved the protocol. The approval is for a fixed period of one year, beginning 15th August, 2019 to 14th August, 2020 renewable thereafter. The Committee may however, suspend or withdraw ethical approval at any time if your study is found to contravene the approved protocol.

Data gathered for the study should be used for the approved purposes only. Permission should be sought from the Committee if any amendment to the protocol or use, other than submitted, is made of your research data.

The Committee should be notified of the actual start date of the project and would expect a report on your study, annually or at the close of the project, whichever one comes first. It should also be informed of any publication arising from the study.

Thank you, Sir, for your application.

Yours faithfully,


Osomfo Prof. Sir J. W. Acheampong MD, FWACP
Chairman

Room 7 Block J, School of Medical Sciences, KNUST, University Post Office, Kumasi, Ghana
Phone: +233 3220 63248 Mobile: +233 20 5453785 Email: chrpe.knust.kath@gmail.com / chrpe@knust.edu.gh