UNIVERSITY FOR DEVELOPMENT STUDIES

CONTRIBUTIONS OF TRADITIONAL MEDICINE IN HEALTH CARE DELIVERY SYSTEM IN THE WEST MAMPRUSI MUNICIPALITY

TAHIRU ISSAHAKU AHMED

2021

UNIVERSITY FOR DEVELOPMENT STUDIES, TAMALE

CONTRIBUTIONS OF TRADITIONAL MEDICINE IN HEALTH CARE DELIVERY SYSTEM IN THE WEST MAMPRUSI MUNICIPALITY

BY

TAHIRU ISSAHAKU AHMED

(UDS/MPH/0060/18)

A THESIS SUBMITTED TO THE SCHOOL OF MEDICINE AND HEALTH SCIENCES, UNIVERSITY FOR DEVELOPMENT STUDIES, IN PARTIAL FULFILLMENT FOR THE REQUIREMENT FOR THE AWARD OF MASTER OF PUBLIC HEALTH.

MARCH, 2021

DECLARATIONS

Student's Declaration

I hereby declare that, except for references to other people's work which have been duly acknowledged, this thesis is the result of my original work. It contains no materials previously presented by another person which has been accepted for the award of any degree elsewhere.

NAME: **Tahiru Issahaku Ahmed**

SIGNATURE: DATE: October 1, 2020

Supervisor's Declaration

I declare that the preparation and presentation of the dissertation were supervised following the guidelines on supervision of dissertation laid down by the University for Development Studies.

NAME: Shamsu-Deen Ziblim (PhD)

SIGNATURE: DATE:

DEDICATIONS

I dedicate this thesis to my lovely family.

ACKNOWLEDGEMENTS

I wish to express gratitude to the Almighty Allah for His guidance throughout the programme.

My greatest appreciation goes to Dr Shamsu-Deen Ziblim, my mentor and meticulous and diligent supervisor for his energies in sharping this script. Thank you very much. I am especially indebted to all the lecturers in the Department of Community Health and Family Medicine, School of Medicine for their exceptional contributions to my academic growth.

I am most grateful to the West Mamprusi Municipal Assembly as well as the Municipal Health Directorate for supporting and facilitating my data collections process. My profound appreciation goes to Dr Abdullai Abubakari for aiding me in shaping the study title. I am indebted to the participants who voluntarily decided to share their experiences to enrich this research.

I also wish to express heartfelt gratitude to my family for all their support, encouragement, advice and above all, care and love given to me before and during the study and beyond. I say: may Allah preserve you and bless your lives. Ameen

Special thanks go to all authors and publishers of the literature used for their contribution towards the success of this study.

I wish to also rigorously acknowledge my colleagues, those that supported me in my data collection and friends whose names are not mentioned here but contributed immensely toward the production of this document. MAY ALLAH BLESS YOU ALL!

Abstract

Traditional medicine has been used alongside modern medicine for decades. Despite the increasing use of orthodox medicine in Ghana, many continue to rely on herbal medicine for their healthcare needs. The study aimed to investigate the contributions and challenges of traditional medicine in the health care delivery system in the West Mamprusi Municipality. The study employed a descriptive cross-sectional study with a mixed-method approach. Data for the study was collected using questionnaires, key informant, interviews and Focus Group Discussion FGDs using the Snowballing sampling techniques. Data were analysed using TCA and SPSS for qualitative and quantitative data respectively. The study engaged 270 participants for the quantitative data and conducted 3 FGDs with the community members and 8 in-depth interviews with traditional medicine practitioners. The mean age of the participants was 36.4 with a standard deviation of 8.5. Majority (77.4%) of the participant were males who reside mainly in the rural areas (90.4%). The study revealed the following as contributions of herbal medicine to the health care needs of people; short distance to access health, affordability, appreciate and accept the healing process, attends to disease holistically and reduce the risk of death. Majority (56.30%) viewed herbal medicine as effective with 29.6% having experienced some adverse effect upon using herbs. Majority (75.20%) have used herbs before. Currently, only 32.6% are still using herbs. Reasons for using herbs include; accessibility (23.4%), affordability (35.9%), effectiveness (27.3%) and also in line with religion (13.3%). Most of the participant use herbs once in a while (39.4%), sometimes (34.2%), rarely or never (20.6%) and 5.8% used herbs always or anytime they are sick. Majority (70.4%) recognised that there were some challenges in using herbs. The challenges included; no standardization of dosage of drugs (55.6%), herbs prepared without a test (63.0), subjective diagnosis process (44.1%), a preparatory process not hygienic (64.1%). Traditional medicine solves the problem of affordability and availability while modern medicine provides evidence-based practice and speciality diseases herbal medicine cannot treat. This suggests the need to understand the understanding of strengths and weaknesses of each and encourage the provision of the best therapeutic option for patients. To this conclusion, the Government must also see the integration of traditional medicine with an orthodox practice in healthcare service delivery.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

ACRONYMS / ABBREVIATIONS

LMICs - Lower- and Middle-Income countries

WHO – World Health Organization

PHC – Primary Health Care

TBA - Traditional Birth Attendants

TCM - Traditional Chinese medicine

UMMC - University of Maryland Medical Centre

NRI - National Research Institute

MOH - Ministry of Health

FDA – Food and Drug Authority

GMP - Goods Manufacturing Practice

HM – Herbal Medicine

TM – Traditional Medicine

STIs – Sexually Transmitted Disease

OM - Orthodox Medicine

TMP - Traditional Medical Practitioners

CAM - Complementary & Alternative Medicine

MSP - Musculoskeletal Pain

OFIs - Opportunistic Fungal Infections

TMPC - Traditional Medicine Practice Council

KNUST - Kwame Nkrumah University of Science and Technology

MMP - Modern Medical Practitioners

CWSA - Community Water and Sanitation Agency

NGO – Non-Governmental organization

MCE - Municipal Chief Executive

FGDs - Focus Group Discussions

PHC – Population and Housing Census

SPSS - Statistical Package for Social Sciences

CSRPM - Centre for Scientific Research into Plant Medicine

ATR – African Traditional Religion

JHS – Junior High School

SHS – Senior High School

HCS – Health Care Syste

CHAPTER ONE

1.1 Background of this Study

In Ghana succeeding governments have seen the crucial role of herbal medicine ((Boateng et al, 2016; Appiah, Amponsah, Poudyal, & Mensah, 2018)

Traditional medicine is a very crucial and repeatedly underrated characteristic of the health care service in Africa and is associated with a very extensive history of usage in health preservation, disease stoppage and treatment predominantly for lingering diseases and the main remedy for nearly all ailments, long before the dawn of modern medicine (Twumasi, 2005a; Peprah et al., 2019; Edet, Bello, & Babajide, 2019; Weaver, Shezi, Street, Ranheim, & Falkenberg, 2020). Traditional medicine is seen to be "effective, more readily available, affordable, culturally acceptable" and said to be an easy to reach health care system that can aid and complement the government's labors at safeguarding excellence and unbiased health care (Twumasi, 2005a; NZUKI, 2016)

It is a known fact that all manner of persons uses traditional medicines as their first choice or supporting orthodox medications (AlRawi, Khidir, Elnashar, Abdelrahim, Killawi, Hammoud, & Fetters, 2017; Peprah, Agyemang-Duah, Arthur-Holmes, Budu, Abalo, Okwei, & Nyonyo, 2019; Ozioma, & Chinwe, 2019). Traditional Medicine is being in existence since time immemorial and has proven to be useful even in the wake of modern medicines (Taghizadieh, Mohammadinasab, Ghazi-Sha'rbaf, Michaleas, Vrachatis, & Karamanou, 2020). As such W.H.O in 2014 placed procedures to back its membership to bring about hands-on policies on "safety, efficacy, quality, access, and rational use and implementing action plans that will strengthen the role Traditional

Medicine plays in keeping populations healthy, especially in developing countries" (WHO, 2014).

Some developed countries such as Sri Lanka, China, and India have accomplished fabulous victory in developing their herbal sector. In the nations listed above, herbal medicines are well developed, structured, regulated and widely used in all aspect as well as in the hospital to provide secondary and tertiary care. Again, herbal practices are highly researched and the best methods have been experimented to ensure the safety of their usage (Park, Huang, Sasaki, Ko, Park, & Ko, 2016; Blaikie, 2019; Thatte, & Gogtay, 2018; Verma and Singh, 2008; Twumasi, 2005a).

Gyasi, Mensah, Osei-Wusu, and Agyemang, (2011) in a scientific paper shows that the patronage of indigenous or traditional medicines is famous in developing countries. Lower- and Middle-Income countries (LMICs) such as Mali, Ghana, Mali, Zambia and Nigeria; children with fever are often treated with herbal preparations as their immediate remedy at home before visiting the nearest health facility (Aschwanden, 2001). Relevant available literature suggests that in Ghana, most people including but not limited to pregnant women; depend on traditional herbalist for health care delivery (Boakye, Pietersen, Kotzé, Dalton, & Jansen, 2015; Gyasi et al., 2011; Ameade et al., 2015)

Before colonialism when orthodox medicine surfaced in Ghana, traditional medicines were mainly used for the treatment of all forms of illness (Twumasi, 2005a). Despite the sharp increase of orthodox and adaptation of same, traditional or indigenous medicine are still having a market in the health care industry (Yesilada, 2005; Adu-Gyamfi and Bing, 2016). Approximately 4,000,000,000 (four billion) individuals or 80 per cent of the total population of the world depends on traditional medicine for health care (WHO, 2003a).

Also, about 80 per cent of developing countries and 80 per cent of Africans depends greatly on herbal medicine to meet their health needs (Darko, 2009; Okigbo and Mmeka, 2006; WHO, 2003a; Abbiw et al., 2002).

It is estimated by WMSR (World Medicine Situation Report) that more than 69 and less than 96% of the total number of people in underdeveloped nations uses Traditional Medicine (WHO, 2011).

Issues are being brought up by "policy-makers, government officials, orthodox health professionals and researchers on the efficacy, quality, reliability and safety of herbal medicine" (Baidoo, 2009; WHO, 2002a; WHO, 2001). For example, studies have demonstrated though about 3,000 herbal formulations have been recognized as being effective for precise diseases in many Africa including Ghana, about 600 are mingling as herbal medicine products, only a little above 60 have undergone "preliminary Phytochemical analysis and safety test at the Centre for Scientific Research into Plant Medicine, which is the institution mandated by the government to undertake research and development of plant medicine, and to assess and approve the efficacy, long term safety and clinical monitoring of herbal medicine products in Ghana"(Darko, 2009; Abbiw et al., 2002, Brown, 1992). Therefore, uncertainties continue to dawdle in the thoughts of government policy-makers and state institution and orthodox health professionals about the quality, efficacy, safety, and reliability of herbal medicine.

In light of the above, there are still a lot of misgivings concerning traditional medicine in Ghana. The study, therefore, explores the challenges and benefits associated with traditional medicine, a case study in the West Mamprusi Municipality.

1.2 Problem Statement

In Ghana succeeding governments have seen the crucial role of herbal medicine ((Boateng et al, 2016; Appiah, Amponsah, Poudyal, & Mensah, 2018) In 1975, the launch of the Centre for Scientific Research into Plant Medicine", the establishment of "traditional and Alternative medicine" executive board to coordinate Traditional Medicine in 1991, and then the institution of the "Food and Drugs Board" (FDA) in 1992, and among many other to certify the sale of all products emanating from herbal preparation to the general public and in 2000, the government portrayal of the TMPC Act, Act 575 for the "establishment of Traditional Medicine Council, tasked with the responsibility for the registration of all Traditional Medical Practitioners in the country in 2000, attest to this fact" (Meyers, 2016; MOH, 2005)

Sustainable development goal three (3) emphases the used of primary health care as a means of ensuring widespread Health treatment and the goal of health for all by the year 2030. Also, the Alma Ata declaration officially recognized traditional Medicine and its Practitioners as an important resource for reaching the goal of "Health for All". The government aims to provide and expand the use of modern biomedicine to ensure the availability and accessibility of primary health care delivery to the public, and to do that without an equal measure of attention on traditional medicine will deny a huge population from accessing health care (McDougall, 2016; Street, Smith, Moshabela, Shezi, Webster, & Falkenberg, 2018; Kessy, & Msalale, 2020).

. It is projected that about 4,000,000 (four billion) people of the total number of people in the world depend on herbal medicine for health care needs and ingenious medicine is the foremost choice of treatment for over 55% of children with hyperthermia consequential

from malaria, whiles over 85% of people in under developing countries depends on Traditional medicine when they need to attend to their health needs (WHO,2003a).

In Ghana, over 70 per cent of the citizenry rely on herbal treatment for their primary health needs and there is, on average, one traditional practitioner for over "400 people, compared to one biomedical doctor to 12,000 people in Ghana" (Darko, 2009; Dogor, et al., 2018; Amoah et al, 2014). 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 per cent (WHO, 2003). Despite the increasing expansion of health facilities and availability of effective pharmaceutical medicine and other modern technologies, there are still challenges in the health delivery system. As a result of these challenges in the modern healthcare system in Ghana, the current health care delivery system is stressed and unable to offer excellence, reachable and effective health services for her citizenry to meet their health needs, particularly for illnesses like malaria, diarrhoea, peptic ulcer disease, diabetes mellitus also known as sugar disease, stroke, and high blood pressure with the underprivileged being harshly hit (Boadu and Asase, 2017; Nguta et al., 2017; Asase, Akwetey, & Achel, 2010; Baidoo, 2009; Darko, 2009)

Traditional Medicine is also associated with a lot of challenges, such as traditional medical practitioners not having any qualification, herbs prepared under unhygienic environment, no standard dosage for herbs consumption, no quality and lack of efficacy assessment issues and many others (Enioutina et al.,2017; Zhou et al, 2019; Bhardwaj, Verma and Gupta, 2018; Karbwang et al., 2019). Notwithstanding the above, the scarcity of health facilities, poverty, inadequate health personnel and poor road network, still make the traditional medical practitioner business very prominent (Guo, 2019; Li and

Weng, 2017; Agyei-Baffour et al., 2017 and Droney, 2016). The question which inspires this study is whether the huge population of about over 80% of Africans and about 75% of Ghanaian citizenry who rely on traditional medicine, improve their health care or just risk their health situation

This study, therefore, sought to investigate the contribution and challenges of traditional medicine in health care delivery in Ghana with particular reference to West Mamprusi Municipality in the North East Region of Ghana.

1.3 Research Questions

1.3.1 Main Research Questions

The main research question is, what is the contribution of traditional medicine in the health care delivery system in the West Mamprusi Municipality?

1.3.2 Specific Questions

Specifically, the following research questions are posed.

1. What is the contribution of traditional medicine in the West Mamprusi Municipality?
2. How do the people perceive the effectiveness of traditional medicine in the West Mamprusi Municipality?
3. What is the prevalence or incidence of traditional medicine in the West Mamprusi Municipality?
4. What are the challenges of using traditional medicine in the West Mamprusi Municipality?

1.4 Objectives of the Study

1.4.1 Main objective

The main research objective of the study is to investigate the contributions of traditional medicine in the health care delivery system in Ghana taken the West Mamprusi Municipality as a case study.

1.4.2 Specific Objectives

1. To determine the extent to which traditional medicine contributes to health care delivery in the West Mamprusi Municipality.
2. To assess the perception of the effectiveness of traditional medicine in the West Mamprusi Municipality.
3. To determine the prevalence of traditional medicine usage in the West Mamprusi Municipality.
4. To examine the challenges of traditional medicine and the health care systems in delivering health care in the West Mamprusi Municipality.

1.5 Conceptual framework

Independent Variables are those variables the researcher can change or control, and it is believed to have a direct influence on the dependent variables. In this study, the independent variables include the following; benefits of traditional medicine, perception of the effectiveness of traditional medicine, Prevalence of use of traditional medicine and challenges of traditional medicine. These variables greatly influence the contribution of traditional medicine in health care delivery which is the dependent variable. The intervening variable such as the age of respondent, sex of respondent, the religion of respondent, marital status of the respondent, parity, average monthly income of the study

subjects, educational status of the respondent, occupation of the respondent. These variables greatly influence the use of traditional medicine. For instance, increasing age increase the chances of one using herbal medicine, those with higher educational levels are less likely to use herbal medicines. The intervening variables also influence greatly the perception of effectiveness, perceived benefits and prevalence of the use of traditional medicine. Persons with low income and those who stay in rural areas, where the health facilities are in a way far from them; tend to resort to herbal medicine to address their immediate needs. Generally, persons with higher educational background perceived herbal medicine as dangerous for human consumption, these assumptions also would lead to downward uptake of the herbs.

Use of tradition medicine; as stated above, the independent variables are of great influence on the use of the tradition. A person who has had the chance to use traditional medicine could be based on the perception of the effectiveness of the herbs and the perceived benefits; which also fed into the contribution of TM in health care delivery. Also, the perceived perception regarding the possible challenges of some persons who use herbs could scare away others from patronising herbal medicine, creating barriers to the utilization; some of the variables measured here include what challenges exist when one wants to acquire herbal treatment and what are some of the challenges that influence your choice for herbal medicine. For instance, some of the participants are of the view that unhygienic processing of herbs, no license and registration of the herbal product, no dosage for drugs hence resulting to overdose or underdose, propaganda from an orthodox medical practitioner, the herbal products are not tested and among other. All these can influence a personal choice of herbal medicine.

Benefits of traditional medicine include the following, easy to access, people, appreciate the healing process, are very effective with some ailments, treats people both spiritually and physically, and among those. The benefits of herbal medicine can influence greatly the usage of herbal medicine. So, for one to acknowledge the benefits of traditional medicine, he or she might have used it before.

Perception of traditional medicine talks about how people think and believe in using traditional medicines. Perception feeds so much into usage and so, if one's perception about traditional medicine is positive, he or she would likely use herbal medicine. Also, someone with a negative perception would likely not use herbal medicine. The negative perception is usually feedback of people who have had side effect or challenges with traditional medicine.

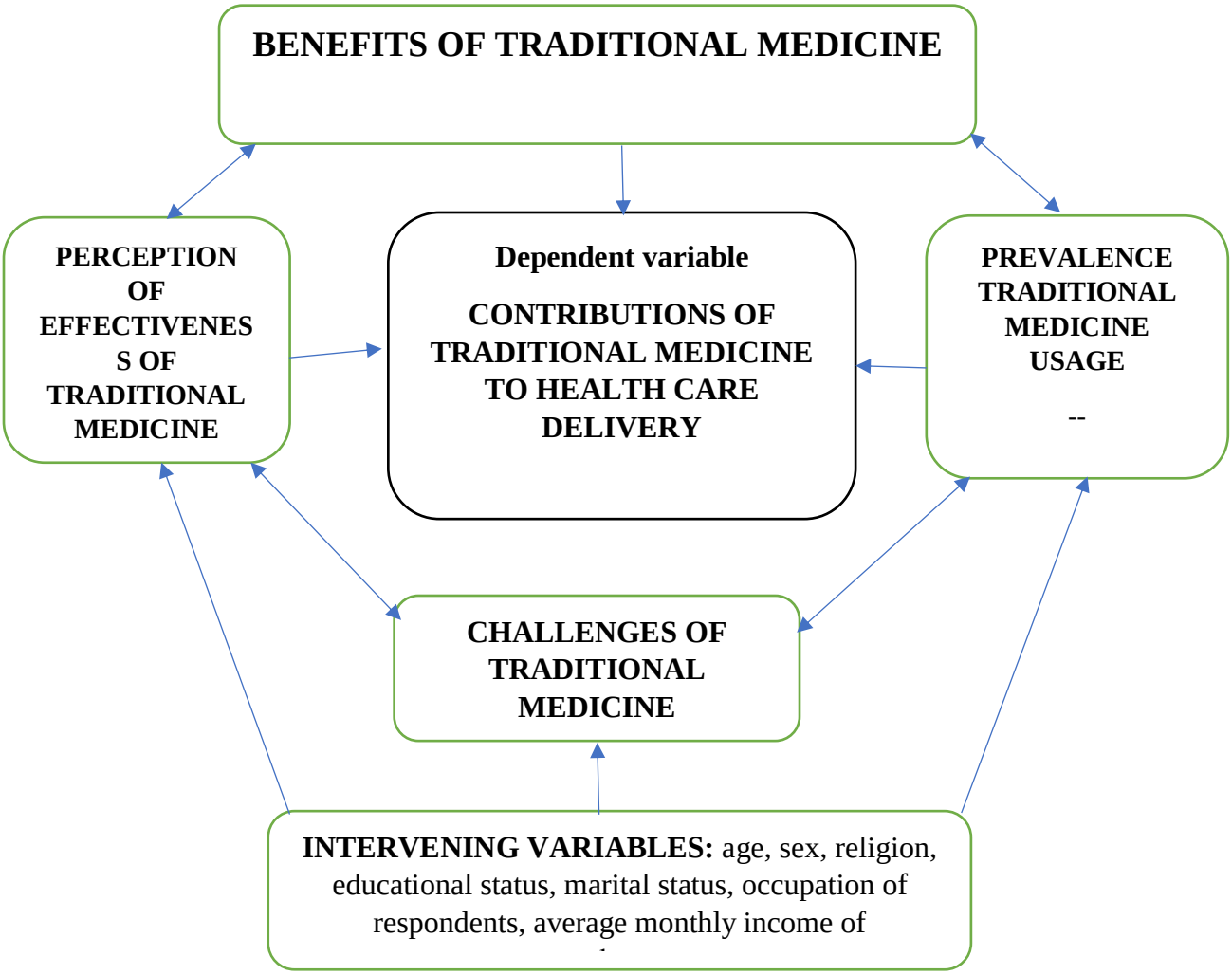


Figure 1.1 Conceptual framework

1.6 Justification

Traditional medicine is highly patronized all over the world, developing countries and Africa. About 70% to 75% of Ghanaian patronize traditional medicine (Amoah et al, 2014)., it is not known to what extend traditional medicine is patronized in the Northern East region of Ghana, particularly the West Mamprusi municipality. This research provided data on the usage of traditional medicine and its effects on health and the health

system within West Mamprusi Municipality. The research result will act as sensitization for the public to gain knowledge on the importance of Traditional Medicine and the need for a stronger integration with modern medicine or not. It serves as a reference point and a source of information for future researchers who are into similar or related studies of herbal medicine.

The study brought for the contributions and challenges of traditional medicine in the health care system as well in the West Mamprusi Municipality. Lastly, the research would be useful to the relevant stakeholders like the Ministry of Health, Ghana Health Service, NGOs, and other international organization, to review and design new policies and make quality decisions to provide affordable, accessible and safe health care to the people.

1.7 Limitations of the Study

Time has been very challenging in the whole process of the research. The duration for the study is not sufficient to conduct a very sensitive investigation such as this and the scattered nature of the selected study communities made it more difficult to be able to carry the research exactly as planned. In addition to this was also resources limitation, fuel and transport for field assistants to move to various communities, getting nose mask and sanitisers for participants became so much for the researcher to bear. The support from family members and friends help to overcome the financial challenges.

Additionally, the whole issue of COVID-19 what a huge limitation on its own. Communities became sceptical of people coming from the urban centres and would want to mingle with them. It, therefore, became a huge task getting our participant accepting to risk their lives to give us the audience.

However, some measured were taken to allay the fears of participants to understand the issues of the COVID. Also, some logistics to prevent possible contact with the virus-like sanitisers and nose mask were provided to participants.

All these limitations impacted the size of the sample. We targeted 450 but ended up been able to conduct only 264 participants for the questionnaire and 30 for the interview schedule

1.8 Organization of the Study

The study is organized into six chapters. Chapter One is comprising of an introduction to the study, the problem statement, the research questions and the objectives of the study. It also includes the justification of the study and limitations of the research.

Chapter Two deals with the literature reviews of the theme of the research. It encompasses areas such as what is the meaning of traditional/herbal medicine, patronage of tradition/herbal medicine, reasons for the patronage, and the potential of traditional medicine to support the orthodox health care system.

Chapter Three highlights the profile of the district where the study was conducted. It comprises the location and size of the district, the physical characteristics such as climate, soil, vegetation, socioeconomic characteristics, and probable potentials and constraints or challenges, and the relevance of these features in the topic under study, then the study methodology which includes; the study design, sampling methods, sample size calculation, data collection tools and techniques and how the data was analysed.

The fourth chapter deals with the analysis, interpretation, presentation and reports of data obtained from the field. Specifically, it deals with the extent of patronage of herbal

medicine, perception about the efficacy of herbal medicine, and socio-demographic determinants and reasons for use of herbal medicine.

Chapter Five will deal with the discussion of the results the trends and the implication of the findings and examines the importance and effect on the primary health care system and the potential of orthodox medicine and the prospects of achieving such integration. The final chapter is devoted to the summary, conclusion and recommendations which will be made based on the research findings. It also recommends areas for further research.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter entails literature relating to the usage of traditional medicine. The focus was to bring out and highlight the various understanding and opinions of people on the usage of traditional medicine, why people opt for traditional medicine. The chapter also reviewed literature about traditional medicines' contribution to the modern medical healthcare system and also examined the challenges of the traditional medical system in the delivery of healthcare to the population.

2.1 Traditional medicine

Since the creation of Adam, the utilization of herbal products such as leaves, barks, seeds, etc. in the prevention and treatment of ailment is been imminent. Plants are seen to be a major source of therapeutic agents over the years and yet continue to be relevant in providing relief to people (WHO, 2013; Sen and Samanta, 2014; Sen and Chakraborty, 2017). The start of herbal medicine was a need and provides for the health of the people since ancient time (Jamshidi-Kia, Lorigooini, and Amini-Khoei, 2018). It is worth noting that, the birth of religion both Christianity and Islam have come to provide further support for herbal medicine. For instance, in the Bible reference is being of Prophet Isaiah; whose voice expressed the usefulness of traditional medicine. The prophet Isaiah asked the servants to "Bring a fig poultice" which they brought. He applied the fig poultice on the ulcer of King Hezekiah and he recovered (2 Kings 20:7). Also, in Ezekiel 47:12, ─ "along the river, on either bank, will grow every kind of fruit tree with leaves...and their fruits will be good to eat and leaves medicinal". In the Holy Quran, the

importance of herbal medicine is well documented in various chapters. These include Al-Mumenoon (The believer), Al-Rahman (the beneficent), Al-Baqara (the cow), and Al-Anaam (the cattle). Also, there are numerous saying of the Prophet Mohammed (Peace be unto him) where he has used numerous plants to heal different forms of ailment (Wani, Mohammad, Khan, Bodha, Mohiddin and Hamid, 2011; Ahmad, Khan, Marwat, Zafar, Khan, Hassan, & Sultana, 2009). According to Chen and colleagues (2007) in a study conducted in Taiwan on the frequency of the usage of traditional Chinese medicine (TCM) revealed that recent TCM practices have been in existence for more than 2000 years. In Neanderthal flower burial in Northern Iraq, Solecki (1975) established that fossil archives date the use of herbal medicine to about 60,000 years ago; the Middle Palaeolithic age. From these few literatures, it is believed that the start of tradition medicine did not start overnight, it is being in existence since the creation of men.

Traditional medicine involves the usage of resources in varied ways and forms by a population influenced by their culture (way of doing things) in quest of and preserving good health care (WHO, 2014). Traditional medicine generally takes two forms and these are the medical therapies and non-medical therapies (WHO, 2004). Medical therapies entail the usage of herbal medicines (thus the leaves, roots, barks etc. of trees), animal parts and minerals for medicinal purposes, whereas non-medical therapies comprise of the use of manual and spiritual therapies (WHO, 2014). With nomenclature, traditional medicine is sometimes referred to as “complementary”, “alternative” or non-conventional” medicine (WHO, 2004). Also, traditional medicine and herbal medicine are often used interchangeably.

According to Twumasi, (1979a) the term "traditional medicine" denotes the customs of defending (protection) and re-establishing (restoration) of health that was practised before the advent of modern medicine. As the name suggests, these approaches to health are peculiar to the traditions/culture of each country and are believed to have been handed down generationally. China and India for instance are widely known for the innovation of acupuncture and Ayurveda respectively; powerful herbal medicine systems very useful in eliminating many forms of illness (WHO, 2014).

The World Health Organization (WHO) defines, Traditional Medicine as "the total of the 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 in the prevention, diagnosis, improvement or treatment of physical and mental illness" (WHO, 2014). Traditional or herbal medicine is a unified term that entails the products, the usage and the practices of traditional medicine systems including Chinese traditional medicine, Indian Ayurveda and Arabic Unani medicine and other forms of indigenous medicines (WHO, 2014). Also, the University of Maryland Medical Centre (UMMC), (2009) defines traditional or herbal medicine as the usage of any form of plants for therapeutic effect. The aforementioned definition however centred only on a portion of traditional medicine as proposed by the WHO. In Ghana, traditional medicine refers to the diverse health practices of the people based on "the traditional knowledge and beliefs integrating plant, animal, mineral-based medicines, spiritual therapies, manual techniques and exercises applied singularly or combination to maintain well-being, diagnose, treat or prevent illness or physical, mental, social and spiritual imbalances" (Sato, 2012).

2.2 Traditional Medicine and its policy in Ghana

In Ghana, rules and regulations on herbal medicine were established in 1992 and the national programme on traditional medicine was started in the year 2000. With the support of the Ministry of Health (MOH), a directorate of herbal medicine was established in 1999 and the same year, a committee was set-up to investigate and make recommendations on the establishments on the directorate. In 2002, a policy on herbal medicine practice was published. With regards to regulations of herbal medicine, the Food and Drugs Law was mandated in 1992 to establish regulations on herbal or conventional medicines. As in many other countries, the sale of herbal medicines in chemical stores, pharmacy etc are prohibited unless they are vetted and approved by the Food and Drug Authority. The same rules and supervisory requirements apply in the production of herbal medicine and conventional pharmaceuticals. Annual inspections are done to ensure the implementation of the manufacturing requirements that reflect the Good Manufacturing Practice (GMP) rules. "Safety assessment requirements include traditional use without demonstrating harmful effects, reference to documented scientific research on similar products and phytochemical analysis. Compliance with these requirements is ensured through the pharmacy vigilance centre" (WHO, 2005).

There are over 340 herbal medicine products that are duly registered at the Food and Drug Authority in Ghana but none is included in the national essential drugs list. Thus, a client who opts for those drugs are usually not covered by Health Insurances schemes, they would have to make payment to receive the treatment. However, there are licensed and registered practitioners that sell herbal medicines in some pharmacies and drug stores are over-the-counter medicines (WHO, 2005).

2.3 Traditional medicine contributions to health care delivery

The World Health Organisation has recognised the contribution of traditional medicine to the mainstream healthcare delivery system, especially in developing countries (WH0, 2003). Modern medicine is purported to be the best in terms of health care delivery due to its evidence-based style of practice. However, short-falls remain and traditional medicine may be the solution to these short-falls. For instance, where orthodox medicine was not available due to human and material resource inadequacy in Africa, African traditional medicine offered affordable, available and accessible health care services within their communities.

2.3.1 Dependence on Traditional Medicine

Globally, traditional medicine caters for high percentages of people. Robert (2001) asserted that about 70% of the population in Africa depends basically on Traditional Medicine. In African countries such as Ghana, Mali, Nigeria and Zambia, herbal medicine is the first line of treatment of parents for 60% of children with high fever related to malaria (WHO, 2002). Also, it was estimated that about 27 million South Africans depend on traditional medicine to manage a variety of ailments (Mander, et al. 2007; Lekotjolo, 2009). In African, there are far more Traditional Medical practitioners (TMPs) than orthodox medical doctors. For instance, in Ghana, the proportion of traditional practitioners to the population was 1:400 compared to 1:12,000 availability of orthodox medicine practitioners (Darko, 2009). Due to the shortfall of medical doctors in Africa, TMPs contribute enormously to healthcare coverage. The increasing need for Traditional Medicine in Asia, America and Europe has been recognized and documented

(WHO, 2001). Traditional medicine has been noted to be gaining extensive acceptability in Australia, Chile, Canada, Columbia, France and UK (Amzat & Abdullahi, 2008).

2.3.2 Traditional Medicine for treatment and prevention of diseases

According to the WHO, traditional health practitioners have contributed immensely to the resolution of a wide range of issues related to healthcare. These issues include the prevention of disease, management and treatment of non-communicable diseases, mental and gerontological health problems (WHO, 2001). Juxtaposed to orthodox medicine, traditional medicine does not only treat but also has preventive components, such as children being protected from witches, evil eyes by wearing of waist fiddle, charms, hand girdles, talisman lockets, amulets, hats and bulletproof dresses (Adjei, 2013). It must be noted that unlike orthodox medicine, traditional medicine focuses on both the spiritual and physical realms. Also, increasing evidence suggests that TM is very efficacious in the management of chronic illnesses (Thorne et al. 2002). In Tanzania, Makunda et al., (2006) revealed that TM contributed enormously to the treatment of convulsions in rural Tanzania.

Many researchers are of the assertion that some traditional medicines are effective in the management of a wide range of sicknesses and some of these ailments may not be treated or effectively managed with Western medicine (Mander et al., 2007). The WHO Alma-Ata Declaration (2008) recognizes this and have emphasized the production of scientific research evidence to support TM. These declarations and resolution have seen many research institutes increase their efforts to produce increased scientific evidence on the quality, efficacy and safety of traditional medicines for the treatment of opportunistic infections of people living with chronic diseases such as HIV/AIDS, diabetes,

hypertension and sickle-cell disease (Adjei, 2013) – disease modern medicine only manages but does not treat.

2.3.3 Medicinal plants contribution to healthcare delivery.

Medicinal plants form an essential component of traditional medicine practice. These plants are readily available in nature and can be harnessed for treatment purposes. In Africa and across the world, various medicinal plants in the management of many diseases have been recorded (Aiveola & Bello, 2006; Blench & Dendo, 2006; Enwereji, 2008). Weintritt (2007) in Nigeria recognized at least 522 medicinal species used in the treatment of many diseases. According to Lawal & Banjo (2007), some medicinal insects and organisms exist that can be used to treat bedwetting, yellow fever and other illnesses that Western medicine fails to treat (Lawal and Banjo, 2007).

Also, in the manufacturing of orthodox drugs, traditional medicine has proven to have the abundant potential of therapeutic importance. In the manufacturing of modern medicines, over 30% of these medicines are directly or indirectly extracted from medicinal plants. Examples of such medications are decongestants (ephedrine); anti-cancer drugs (vinblastine and vincristine), antimalarial (quinine, artemisinin); antihypertensive agents (reserpine); and analgesics (belladonna, aspirin) (Adjei, 2013).

In some countries, medical plants of treatment potential have been documented and some of these countries produce herbal medicines on a small-scale from the medicinal plant either cultivated or found in the wild. In these countries, herbal medicines are regulated and registered with regulatory authorities and some even add these drugs to their national essential drugs list (Adjei, 2013). The WHO in a declaration on Essential Drugs in the

WHO African Region demands member states to perform studies on medicinal plants and to integrate their usage in healthcare delivery systems (WHO, 2000).

2.3.4 Integration of Traditional Medicine and Orthodox Medicine

There have been repeated calls for the incorporation of the traditional medical system into the modern healthcare system to improve the accessibility of healthcare (Erinosho, 2006; Mmeka, 2006). This incorporation would witness the improvement of quality care and provide affordable primary healthcare. The Regional Committee for Africa made a resolution in 2000 and acknowledged the potential of TM for the realization of universal health coverage in the region and called for the development and local production of traditional medicines (WHO, 2000). Subsequently, the WHO published methodologies of research and evaluation of traditional medicine and provided guidelines to ensure effective utilisation of Traditional Medicine. These publications also spelt out appropriate approaches for member countries in efforts to incorporate traditional medicine into the mainstream orthodox healthcare system (WHO, 2007).

In Ghana, following the establishment of a policy of herbal medicine practice in 2005, several efforts have been made to amend the National Health Policy to ensure the smooth integration of herbal medicine into mainstream healthcare (Ministry of Health, 2017; Adjei-Baffour et al., 2017). In 2010, a Traditional Medical Council (TMPC) was set-up after the release of the 2nd edition of the Ghana Herbal Pharmacopoeia (Adjei-Baffour et al., 2017). Two years later, HM was officially and formally integrated into the mainstream healthcare delivery system in Ghana with a pilot of about 18 government health facilities countrywide (Asare, 2015). Trained Herbal practitioners educated at the Kwame Nkrumah University of Science and Technology (KNUST) are licensed to

consult and prescribe herbal medicines for patients in both government and private hospitals in Ghana (Adjei-Baffour et al., 2017).

Traditional medicine has gained strides as TM continues to grow worldwide. There are evidence to prove that traditional healers have contributed to promoting healthcare delivery. In a cross-sectional survey conducted by Boateng and Darko (2008), it was discovered that in every ten respondents randomly selected, about eight out of them believed that TM is of immense importance to the modern Ghanaian healthcare system. A descriptive cross-sectional survey was conducted in Ghana among 30 healthcare users, 70 Traditional Medicine and 20 Orthodox Medicine practitioners to determine public perceptions of Traditional Medicine and examine interactions between traditional and orthodox medical systems in the Sekyere South District of the Ashanti Region, Ghana. The study showed there was some level of interaction between the two healthcare systems through cross-referrals – the cross-referral systems were however not coordinated and strictly unofficial (Gyasi et al., 2011). In the Wassa Amenfi West District, the use of herbal medicine and the role it plays in healthcare delivery was examined in a cross-sectional study. A sample of 205 residents, 10 orthodox and 15 herbal practitioners were selected for the study. The study revealed that there was a strong belief in the potency of herbal medicine; giving relevance to its role in health care delivery. Again, the study however found that despite the co-existence of the herbal and orthodox medical systems, there was a low level of interaction and integration between them (Adjei, 2013). Further, 500 patients were recruited into a cross-sectional study to determine the perception of clients and the acceptability of integrating herbal medicine in mainstream healthcare in Kumasi, Ghana. The study results revealed that about 42% of

the respondents utilised HM services when they visited the health facility. Three years into the integration programme, it was found that there was a promising level of acceptability of the usage of HM in the facility. The study concluded that the integration of herbal medicine was practicable and HM may be widely accepted as a formal source of healthcare in Ghana (Agyei-Baffour et al., 2017).

In Eritrea, the perceptions and attitudes of traditional and medical practitioners on TM practice were assessed in a cross-sectional study. A sample of 100 TMPs and MMPs each were selected for the study. Results from the study showed that more than half of the MMPs supported the idea of combined therapy for certain types of diseases. About 53% agreed to collaborate with TMPs in the research and treatment of certain diseases purported to be effectively treated by TM. The socio-cultural dimensions of health provided the basis for the need for collaboration. The study concluded that there generally was goodwill to establish positive relationships and collaborations between TMPs and MMPs (Habtom, 2018).

2.4 Perception of the effectiveness of traditional medicine

Traditional medicine usage is often associated with the perceptions that treatments were effective (Laelago et al., 2016). To estimate the likelihood of people to patronize traditional medicines, it is essential to accurately capture their perceptions of traditional medicine (Berhanu, 2013). In Africa, the dominant perception of people is that TM is efficacious (Kusi-Bempah. 2011). The prevailing perception is that herbs are gotten from natural sources; hence are safer (Foo et al., 2016).

A cross-sectional study was conducted in the Sekyere South District of Ashanti, in Ghana, among 70 Traditional Medical Practitioners, 20 Orthodox Medical Practitioners

and 30 health care users to examine the perceptions of people on the role of Traditional Medicine. The study found that TM was effective as it was employed in the treatment of many diseases. Participants perceived that TM was unsafe due to no standardization (Gyasi et al., 2011). In the Wassa Amenfi West District, a sample of 205 residents, 10 orthodox and 15 herbal practitioners were selected to partake in a similar study. The study aimed to examine the usage of herbal medicine and the role it plays in healthcare delivery. Regarding perceptions, it was revealed that herbal medicine was effective in the treatment of many ailments such as malaria, fever, infertility, sexual weakness, diabetes, STIs, stroke, bone fracture, mental illness, piles and chronic skin infections (Adjei, 2013). In Bolgatanga, a cross-sectional study employed 156 household heads, 22 modern and 22 traditional medical practitioners, the results showed that modern medicine was more effective in the treatment of ailments than traditional medicine (Amangbey, 2014).

In Abuja, Nigeria, a cross-sectional study was undertaken to assess participant's perceptions of the packaging, affordability, availability, efficacy and safety of the usage of herbal and orthodox medicine. A sample of 200 respondents was selected. The results showed that in terms of preference, orthodox medicines were rated higher than herbal medicine. However, herbal medicines were preferred by some respondents due to their affordability, adverse effects, natural and efficacious to the body. About 28% of the respondents chose herbal medicine as their first choice of drug. About 72.96% reported no side effects of herbal medicine compared to 10.77% who had experienced adverse effects from its usage (Mustapha et al., 2016). In a similar study undertaken among 230 rural farmers in South-Western Nigeria, it was revealed that TM was perceived to be

generally healthier, have fewer side effects and very good in the maintenance of life (Mbada et al., 2015).

In a cross-sectional study undertaken in Ethiopia, 327 students were interviewed to assess university students' perception towards the usage of traditional medicines (TMs) in the treatment of mental disorders. It emerged that before joining the university, majority of the participants preferred traditional medicines for the treatment of mental disorders (Berhanu, 2013). Elsewhere in Malaysia, another cross-sectional study conducted among 1067 respondents to examine the insights of participants on their preferred herbs, perception and predictors of herbal use among Malay women. The findings revealed that a very high percentage of participants perceived that herbal medicine causes no problems to women's overall health (Mohammed et al., 2019).

Healthcare professionals' perception of Herbal Medicine (HM) remains essential to the much-wanted incorporation of traditional and orthodox medicine. In a study aimed at assessing the perceptions of different healthcare professionals towards HM, health workers who believed in the usage of herbal medicine perceived that HM keeps them healthy, has fewer side effects compared to modern medicine and treats specific diseases effectively (Al-Azzaw et al., 2019).

2.5 Prevalence of traditional medicine usage

Since the 1970s, there have been increased attention and interest in the patronage of traditional medicine. People have had their interests turned to the practice of traditional medicine as both an alternative and complementary to orthodox medicine (Lucas, 2010; WHO, 2003b). Many types of research have revealed that many people combine the usage of both TM and Orthodox Medicine (OM) in both developed and developing

countries (Shaikh & Hatcher, 2005; Twumasi, 2005; Darko, 2009; Fakeye et al., 2009; Gratus et al., 2009).

Herbal healing is most common in the practice of Traditional Medicine and is highly profitable on the international market (WHO, 2008). It is generally estimated that about 80% of the world's population health needs are resolved using herbal medicine (WHO, 2003). According to the World Health Organisation (WHO), in Hong Kong, about 60% of the people at a point in time have consulted Traditional Medical Practitioners (TMP) and herbal preparations constitute about 30 to 50% of total medicine consumption in China (WHO, 2003). In Columbia and Chile, 40% and 71% of the populace respectively used herbal medicine (WHO, 2003). In developed countries, the percentage of inhabitants who had used these medicines at least once was 38% in Belgium, 70% in Canada, 75% in France (WHO, 2003), 70% in Australia (Xue et al., 2010) and 20% in the United States of America (Bent, 2008). In Africa, it is estimated that about 80% of the population use herbal medicine for primary healthcare (WHO, 2003; Mensah, 2008). In Ghana, Mali, Nigeria and Zambia, the primary health-seeking behaviour for 60% of caregivers for children with high fever related to malaria was TMP and the usage of herbal medicine at home (Abbiw et al, 2002; WHO, 2003; Okigbo and Mmeka, 2006; Darko, 2009). It was also reported in Ghana that about 70% to 75% of the populace depend on herbal medicine for their primary healthcare needs (WHO, 2001; Abbiw et al., 2002).

In a cross-sectional survey conducted by Adjei (2013), 205 residents, 10 orthodox and 15 herbal practitioners were interviewed in the Wassa Amenfi West District, Ghana. The results of the study showed that herbal medicine was highly patronised in the district. Gyasi (2014) carried out a similar study among 386 participants in rural and urban areas

of the Kumasi Metropolis and the Sekyere South District of the Ashanti Region in Ghana. The study investigated the nature of THM utilization and the factors that influence such utilization patterns in Ghana. Findings of the survey indicated that 86.1% of the sample utilized traditional health care (Gyasi, 2014). In a similar study performed in Bolgatanga, Ghana, 156 household heads, 22 modern and 22 traditional medical practitioners were involved in the study. Analyses revealed that 15.6% of the participants patronised traditional medicine (Amangbey, 2014). In a cross-sectional study conducted among 500 patients to assess client perception, disclosure and acceptability of integrating herbal medicine in mainstream healthcare in Kumasi, it emerged that close to 98.4% of the patients had ever used herbal medicine and about 44.2% used HM as their usual treatment option. On the frequency of usage, majority of these used herbal medicines at least once a week and pre-packaged dosage forms were the most common form of herbal products followed by self-prepared formulations. Pharmaceutical stores and market places were the most patronised sources by majority of participants (Agyei-Baffour et al., 2017).

In Ethiopia, a community based cross-sectional researched assessed the prevalence and factor associated with parental traditional medicine usage for children in Motta Town. A total of 423 households selected using the systematic random sampling method. It was found that 88.2% of parents had used TM for their children. The top treatments used were herbs, religious therapies, massage, bonesetters and Traditional Birth Attendants (TBA) (Melesse, 2014). Elsewhere in Merawi town, similar research was conducted to determine the knowledge, attitude and practice of traditional medicine among 403 residents of the town. Results of the study showed that majority of the participants

(70.9%) had used traditional treatments (Wassie et al., 2015). In Nigeria, a cross-sectional study used a multistage sampling technique to select 230 rural farmers to assess the patronage of traditional medicine in the treatment of Musculoskeletal Pain (MSP). The study revealed that the lifetime, 12-month and point prevalence of Complementary & Alternative Medicine (CAM) for Musculoskeletal Pain (MSP) was 96.8% respectively. The predominant types of CAM treatments among both previous and current CAM users were herbal medicine and massage (Mbada et al., 2015). A cross-sectional survey was conducted among a total of 1067 Malay women to understand their insights on preferred herbs, perception and predictors of herbals medicine usage. The results showed that more than half of the women admitted using herbs for treatment and raw herbs were the most preferred herbal therapy used (Mohammed et al., 2019).

In Africa and North America, studies have shown that about 75% of HIV/AIDS infected people rely solely on herbal medicine or in combination with other medicines for the treatment of various symptoms or conditions (WHO, 2003). Otang et al., (2011) reported in a study aimed to determine the prevalence, perceived benefit and efficacy of herbal medicine in the management of opportunistic fungal infections (OFIs) in 101 HIV/AIDS patients that 39.6% (40/101) of these patients used herbal medicine for the treatment of signs/symptoms of OFIs (Otang et al., 2011).

The successful integration of TM and OM as stated depends largely on the perceptions and acceptance of health care professionals. Some studies examined the patronage of TM among health professionals. In Ghana, Ameade et al., (2015) undertook a study among 284 medical students to assess their knowledge and attitude towards herbal medicines. Results found that more than half of the students ever used herbal products. The students

showed a high level of personal use. Neem plant (*Azadirachta indica*) was the best known and used herb used in the treatment of malaria. The students showed a high level of personal use of herbal medicines (Ameade et al., 2015). A study was carried out in Abu Dhabi, United Arab Emirates (UAE) among 271 pharmacists to assess their current practice, perceptions and knowledge regarding the use of herbal products. The study revealed that pharmacists' usage of herbal products was high due to their high belief in the effectiveness of herbal products (Fahmy et al., 2010). Still in the UAE, a study was conducted among 781 different healthcare professionals. Results of the study revealed that 71% (533/781) of respondents indicated that they had previously used herbal medicines (Al-Azzaw et al., 2019).

2.5.1 Socio-demographic background of users of herbal medicine

Many focused on the general patronage of herbal medicine to the neglect specific socio-demographic background of users. The usage of TM transcends ages, sex, rural/urban divide, religion and income. The socio-demographics of users can be thought of as factors that influence the usage of herbal medicine.

Fosu (1981) in a study conducted in Akwapim Berekuso, Ghana, it was revealed that women were more likely to rely on traditional medicines than men. In a more recent study aimed at examining the usage of traditional medicine in urban areas of Ghana, the views of 320 residents were sought. Analysis of data indicated that more females use traditional medicine than males, the difference was however not significant (Kusi-Bempah, 2011). Rathgeber & Vlassoff, (1993) reported that compared to men, women oftenare less likely to consult modern health services and thereby result in traditional healers.

Also, Falconer et al., (1992) reported in a study that compared to 10% of urban dwellers, 96% of people in villages in the Ashanti and Western Regions of Ghana used traditional medicines. In the same study, more non-educated participants sought herbal remedies compared to the educated (Falconer et al., 1992). Traditional medicine is usually more available, accessible and acceptable to many people living in rural areas (Twumasi, 2005; Baidoo, 2009; Darko, 2009).

2.5.2 Factors (Reasons) that influence the usage of traditional medicine

The utilization of traditional medicine involves patients across all academic, economic and social classes and is strengthened by cultural and traditional beliefs (Adjei 2013). Furthermore, the practice of herbal medicine also run across both developed and developed countries; albeit with varying core reasons or factors influencing the usage (Adjei, 2013). Depending on the culture and geographical location, different countries have different reasons for the patronage of traditional medicines (Shaikh & Hatcher, 2005). The most popular reasons bank on traditional medicines' culturally acceptability, affordability, accessibility and above all effectiveness (Twumasi, 2005; Okigbo & Mmeka, 2006; Darko, 2009).

According to WHO, in developing countries like Ghana, patronage of traditional medicine is more often associated with its physical availability and practical accessibility (WHO, 2002). The physical availability and accessibility stem from the fact that modern medicines and drugs have achieved relatively poor penetrability in many low- and middle-income countries, especially Africa (WHO, 2002). According to the WHO and Health Action International (HAI), drugs were reportedly beyond the reach of large proportions of the populations in 36 low and middle-income countries (Cameron et al.

2008). The practical accessibility could also be explained by the facts that the ratio of modern medicine practitioners in Africa remains poor compared to traditional practitioners to the population ratios. In Ghana, for instance, the ratio of traditional practitioners to the population was 1:400 compared to the 1:12,000 ratio of modern medicine practitioners' availability (Darko, 2009). Modern medical practitioners are mainly skewed toward urban centres (WHO, 2002) – a situation that leaves rural populations to depend on traditional medical practitioners (Baidoo, 2009; Darko,2009).

The affordability of TM presents as another important factor that accounts for the high patronage of herbal medicines. Modern health facilities are often expensive to patronize compared to TM. Many rural dwellers are poor and may not be able to afford the expensive OM, hence they rely on TM which is moderate and sometimes offers flexible payment terms and options such as usage of fowl, goat and cola as payment (Okigbo & Mmeka, 2006; Darko, 2009).

Another important factor that promotes the patronage of traditional medicine is its cultural acceptability, particularly in the rural populations of developing countries (Darko, 2009). Traditional practitioners are mainly native to the region they practice and understands the socio-cultural background of the population they are working with, provide culturally meaningful diagnosis and treatment (Twumasi, 2005; Darko, 2009). According to Twumasi (2005), traditional medical practitioners speak to their patients and relatives in a language in local dialects easily understandable. Patients can express their health situation effectively and this accounts for the high patronage of TM.

An empirical review of studies reflected the discussed factors and reasons for the patronage of traditional medicine. A study was undertaken to determine the knowledge of

the prevalence of TM and the characteristics of its users. This was done to inform health policy-makers as countries seek to fulfil the WHO Traditional Medicine strategy 2013-2023. Analyses showed that poorer, less educated and rural participants were more likely to be TM users. In the same study, it was found that in China, rurality, poor self-reported health and people with arthritis were associated with TM usage. Also, in Ghana and India, TM usage was factors associated with TM usage included lower-income, depression and hypertension (Oyebode et al., 2016). A cross-sectional survey took data from 386 participants from rural and urban prefectures to investigate the nature of traditional medicine utilisation and the factors that stimulate such utilisation in Kumasi Metropolis and Sekyere South District of Ashanti Region, Ghana, it emerged that Traditional Medicine (TM) users were more likely to be traders, having lower income, perceiving TM as effective, reporting fewer side effects of the use of TM, having chronic diseases and good attitudes of traditional healers towards service users (Gyasi, 2014). In Bolgatanga, a similar study conducted among 156 household heads, 22 modern and 22 traditional medical practitioners revealed that factors that influenced patronage included convenience, taste and preference, accessibility/affordability, effectiveness and attitude of the staff (Amangbey, 2014). In Kumasi, 500 patients were involved in a cross-sectional study to determine client perception, disclosure and acceptability of integration of herbal medicine in mainstream healthcare. Reported reasons for the usage of HM included its effectiveness (24.4%), accessibility (25.3%) and affordability (16%). Perception of service provision and socio-economic status were noted to influence the usage of herbal medicines (Agyei-Baffour et al., 2017).

In Ethiopia, a study was carried out to determine the factors that influence parental usage of traditional medicine for their children in Motta Town. The results showed that factors associated with parental TM use for children included female sex, educational level, easy accessibility of TM, the cheap price of TM and its perceived effectiveness (Melesse, 2014). In South Africa, 135 participants were interviewed in a cross-sectional descriptive study to determine the prevalence of Traditional/ Herbal Medicine usage for the treatment of hypertension. It emerged that majority of the hypertensive user of TM were females and almost all were unemployed (Hughes et al., 2013). In another study undertaken in Malaysia, results showed that the predictors of herbal medicine usage included marital status and income. Married participants were found to be 3.9 times more likely to use herbs than unmarried women (Mohammed et al., 2019). In Abu Dhabi, a study carried out among 271 pharmacists to assess their practices, perceptions and knowledge towards the use of herbal products. Analyses showed that only age was found as a predominant variable that influences the pharmacists' usage of herbal products (Fahmy et al., 2010).

2.6 Challenges of traditional medicine in delivering health care.

Tradition medicine has the general backing of the WHO to continue to grow, especially in developing countries and more particularly in rural communities because traditional medicine undoubtedly, provides cheap, affordable and accessible health care services for communities and it has been so recognized both locally and internationally (Adjei, 2013). However, the practice of traditional is not without challenges. The common challenges of traditional medicine encompass scientific acknowledgement, regulation, educational standards, efficacy assessment, quality control, safety monitoring, ecological obligations and value addition (Hussain & Malik, 2013; Ekor, 2014). The achievement of the desired

regulation, standardisations and integration of Traditional Medicine in Africa demands the resolution of these numerous challenges.

2.6.1 Challenges associated with scientific recognition

In medical circles, it is generally believed that traditional medicine generally disregards scientific processes (Adjei, 2013). Traditional medicine unlike orthodox medicine has a spiritual aspect. At the moment, just like the physical aspect of orthodox medicine, there have been strides in the scientific study and analyses of physical ingredient such as herbs. The lack of scientific process is mainly levelled against the spiritual aspect of traditional medicine. Unlike the physical parts of traditional medicine, the spiritual realm cannot be subject to scientific analyses using a scientific systematic process of investigation (Oyelakin, 2009). In a qualitative paper that looked at the trends and challenges of traditional medicine in Africa, it was asserted that most stakeholders in modern medicine carry a western hegemonic mentality involving ethnocentric and medicocentric tendencies and this serves as a significant barrier. In medical circles, it is generally believed that TM defies scientific principles of objectivity, measurement, codification and classification (Abdullahi, 2011).

2.6.2 Challenges associated with the assessment and monitoring of safety and efficacy of Herbal Medicine.

The physical aspect of traditional medicine which mainly deals with the usage of herbal medicines has come under some scrutiny. With the massive global consumption of HM and orthodox medications, there have been calls to include HM in pharmacovigilance systems (Ekor, 2014). The WHO asserts it is essential to identify the risks associated with

the use of herbal medicines to ensure safety due to its exposure in the world population (WHO, 2005). Some traditional medicines contain toxic and lethal constituents including aristolochic acids, lectins, pyrrolizidine alkaloids, viscotoxins, saponins, diterpenes, benzo phenanthrene alkaloids, cyanogenetic glycosides and furanocoumarins which intensely affect the quality of herbal products (Hussein & Malik, 2013). Unknown and irregular mixes of such constituents may carry dire consequences. In Belgium for instance, it was reported in 1996 that more than 50 people suffered kidney failure after ingesting herbal preparations which constituted *Aristolochia fang chi* (a toxic plant) (WHO, 2003). Due to the increasing rates and cases of poisoning related to the usage of herbal medicine in many countries, there is a growing need to ensure thorough toxicity analyses alongside pharmacovigilance on herbal products to promote safe usage and protection of public health (Zhou et al., 2013).

Compared to the requirements of safe orthodox pharmaceuticals, the research protocols, standards and methods required for safety and efficacy assessments of HM are more complex (WHO, 2005; Zhou et al., 2013). The complexity stems from the fact that a single dose of herbal medicine may contain numerous natural constituents. Isolation of each constituent for thorough study may require tremendous time and resources (Ekor, 2014). In instances where a herbal product is a mixture of two or more herbs, it becomes practically impossible to run extensive analyses (WHO, 2005).

Then there is the under-studied aspect of side effects of HM. Although the adverse effects of herbal medicines are affordable than synthetic drugs due to their naturality, randomized clinical trials have shown the presence of such side effects (Adjei, 2013). Adverse effects of herbal products are understudied and are sometimes self-reported side

effects. Besides, inappropriate preparation, adulteration and poor grasp of plant and drug interactions have led to adverse reactions that are every so often fatal (Elvin-Lewis, 2001; Lucas, 2010). Many herbs are thought of as safe whereas some may have harmful side effects (IUPAC, 2008). For instance, certain herbs such as boloba, gingko and ginseng are known to affect blood clotting abilities. These might result in grave adverse effects for users with haemophilia and other blood-related conditions (Lucas, 2010). Also, some HMs may interact with orthodox medications and some vitamins and minerals. For instance, the herbal medicine ginkgo biloba, when administered with ibuprofen may result in unprompted and/or excessive haemorrhage. High doses of garlic have also been reported to boost the adverse effects of anticoagulants and anti-platelet drugs, including aspirin, clopidogrel (Plavix), enoxaparin (Lovenox), and others (IUPAC, 2008).

A significant challenge associated with safety and efficacy is the lack of standardization in terms of dosage. Irregular dosages have been known to expose users of HM to potential toxicity and treatment failure (Omoleke 2013). In a qualitative paper, Opoku-Mensah (2015) mentioned that the issue of dosage remains a grey area and must be attended to. Both the OMPs and TMPs involved in the study agreed that most herbal medicines lack the right dosage inscriptions and the sometime dosage is left to the discretion of the client (Opoku-Mensah, 2015).

Another concern of safety and efficacy has to with the preparation of herbal medicines. Opoku-Mensah (2015) reported in a qualitative study that TMPs lack appropriate methods of diagnoses of diseases before treatment and as a result, they treat via trial and error (Opoku-Mensah, 2015). Usually, after such a diagnosis, most TMP gives out herbs with instruction to patients on how the preparation must be done. The preparation most

often is not hygienic and there is the possibility of infection entering into the drug preparations (Omoleke 2013). TMPs and OMPs in a study reported poor preparation conditions and the use of old tools for cutting, pounding and roasting herbal medicines. Many criticisms were made about the mode and conditions of preparation and packaging of TM (Opoku-Mensah, 2015).

In a paper to study the importance of African Traditional Medicine (ATM) in Nigeria, 50 traditional and orthodox practitioners each as well as 50 patients were interviewed. Findings of the study showed that there are challenges associated with the usage of traditional medical care and such issues run across measurability, dosage, preparation, documentation, conservation, effectiveness and assessment of side effects (Isola, 2013).

2.6.3 Challenges related to Quality Control of Herbal Medicines

In the production of herbal medicines, the quality of source materials used determine the safety and efficacy of these herbal remedies (Ekor, 2014). The quality of raw materials generally may depend on the condition of the environment as well as good agricultural and collection practices (GACP) for medicinal plants which involve plant selection and cultivation or harvesting. Hence, several factors come into play and therefore renders quality control on raw material for herbal medicines difficult to perform (WHO, 2004). Quality control goes beyond raw material selection and cultivation but extends to special storage and cleaning methods of harvested parts (WHO, 2005). Another challenge has to do with quality control of the finished herbal medicine in terms of its packaging and labelling and storage. The products are prepared in settings where poverty does not allow for the purchase of standardized package materials and labels. Thus, compared to orthodox pharmaceuticals, the general requirements and procedures for quality control of

finished herbal products remain far more complex (WHO, 2003, 2004, 2005). With orthodox medicines, expiration periods are always stated. However, the expiration date or period of traditional medicine cannot easily be determined (Omoleke, 2013).

2.6.4 Challenges related to the regulation of Herbal Medicines

Different countries have regulatory bodies that ensure all drugs in the country are safe for consumption. With regards to herbal medicine, there varying definitions and categorisation of herbal medicine across countries. In essence, based on the regulations in a country, one herb can be classified as food in one country and classified as herbal medicine in another (Ekoh, 2014). This places significant difficulty on the generalisation of the definition of HMs for national and worldwide drug regulation (WHO, 2005).

The Food and Drugs Authority of Ghana are responsible for the regulation of herbal medications in the country. The FDA works in tandem with the Centre for Scientific Research into Plant Medicine. Studies have found out that about three thousand (3000) herbal preparations have been documented as efficacious for the treatment of specific conditions in Ghana. Out of this number, over 600 were circulating in the markets as HM products and about 60 have been passed through preliminary phytochemical analyses and safety tests at the Centre for Scientific Research into Plant Medicine at Mampong, the government authorised organisation to conduct research and development of herbal medicine, evaluate and approve the effectiveness and long-term safety, and also clinically monitor TM products in Ghana (Abbiw et al, 2002; Darko, 2009).

2.6.5 Challenges Associated with Traditional Medicine Practitioners

The main players in the Traditional Medical System form part of the many challenges of TM. Studies have shown that many TMP is uneducated (Ihekwoaba, 2014) and mainly rely on memory for treatment. Most of the treatment knowledge is not documented and practitioners are always privy to medical errors in diagnosis and prescription (Omoleke 2013). Worldwide, Traditional medicine practices are covered with clandestineness, with few documentations of side effects or adverse reactions of herbal medicines. The knowledge-based is also still shrouded in secrecy and not easily or widely disseminated (Asamoah-Gyadu, 2014).

In Ghana, this extends into a problem of abuse of traditional healthcare knowledge. Traditional healthcare knowledge can only be gotten from healers and pharmacists through oral communiqué since most knowledge remains undocumented. Just like modern medicine doctors who hold some of their knowledge in memory, traditional practitioners are usually able to perform accurate interventions using memory-retained knowledge. In Ghana, hoarding of traditional medicine knowledge is very common and most TMs do not disseminate their knowledge to the public by way of health education. Traditional Medical knowledge is only given to patients who visit healers for treatment. Such patients may then disseminate to friends and relatives gained knowledge after they are healed by the intervention. Hence, it can be said that traditional medicine knowledge in Ghana is not spread in the form of general health education but rather marketed in conjunction with treatments (Yeboah, 2008). In a qualitative study to establish a conceptual framework on TM practice, challenges reported included the range of mystery and secrecy surrounding traditional healthcare practice. Other challenges mentioned were

the low literacy and level of education of TMPs and the governments' failure to properly regulate TM practice (Ihekwoaba, 2014).

Another important problem associated with Traditional Medicine is the prevalence of fake healers and healing. Ebomoyi (1982) observed that quacks are a commonplace in TM. Pretorius (1999) asserted that "in the current economic environment and amidst the associated joblessness, there is an obvious increase in the ranks of traditional healers, amongst whom there are, regrettably, quite several impostors" (Adjei, 2013). It is entirely important to regulate TMP and flush out fake practitioners. Orthodox medicine practitioners are controlled by rules and regulations, ethics and codes of conduct (Opoku-Mensah, 2015). In a study in Ghana, it was revealed that rules exist for the regulation of traditional medicine practice in Ghana. There is a 13-page policy directive document published by the Ministry of Health in 2003 to serve as Codes of Ethics and Standards of Practice for TMPs in the country. However, a significant challenge is this implementation of this document as many traditional medical practitioners in a study setting were unaware of such a document (Opoku-Mensah, 2015).

2.6.6 Challenges Associated with Religion, Education and Globalization

The patronage of traditional medicine in Africa has been gravely affected by western religion, education, globalization and urbanization (Abdullahi, 2011). Before the advent of education, religion and globalization, traditional medicine practice saw little improvement but could be said to provide the healthcare needs of the people.

With western education, there has been a skewed preference for orthodox medicine. Feuerman (2002) noted an "ardent ambivalence" towards African Traditional Medicine in some sections of African people mostly among the educated (Abdullahi, 2011). Kiringe,

(2005) noted the influence of Western Education on the usage of TM. According to him, the introduction of Western Education into the culture of people especially in rural areas of Africa had an unbelievable negative effect on the dynamics of traditional medicine. It has seen the abandonment of traditions customs and taboos that were put in place to monitor and prevent miscreants.

Religion also plays a major influence on the patronage of traditional medicines. Some Christians consider traditional medicine healers to be associated with superstitions and fetishes and this contradicts their religious beliefs (Asaah et al., 2003; Mensah, 2008). Muslims consider most TMPs as people who worship idols. Further, Muslims are known to avoid certain traditional therapies that include palm wine and certain animal parts considered to be unclean for consumption. In rituals and divinations, certain practices are unfathomable and intolerable for Christians and Muslims (Asamoah-Gyadu, 2014; Ozioma & Chinwe, 2019).

Teshome-Bahiru (2006) reported that Traditional Medicine practice in both rural and urban communities in Ethiopia have been immensely impacted both in positive and negative ways by globalisation and urbanisation. The impact of globalisation and urbanisation was captured in a study where it emerged that TMPs reported that the practice of TM is now becoming difficult because most plants previously used for treatment purposes no longer exist or are difficult to find (Opoku-Mensah, 2015). This can be seen as a problem caused by urbanization as more and more forest and plantation are destroyed for habitations and other purposes.

CHAPTER THREE

STUDY AREA AND RESEARCH METHODOLOGY

3.0 Introduction

This chapter covers the research design and the methodology that was used in conducting the study. The sub-sections in this chapter are; study area, study type, study population, sampling techniques and size, study variables, inclusive and exclusive variables, data collection methods and instruments, data processing, handling and analyses and quality control measures of the study are all captured in this chapter.

3.1 Study Area

3.1.1 Location and land size

The study was carried out in West Mamprusi Municipality. This forms part of the newly created North East Region, which was part of the Northern region of Ghana. The Municipality is positioned in the interior longitudes 0°34'W and 1°44'W and Latitude 9°56'N and 10°34'N. The district has a vast land of over 2600 sq. km and shares borders with the "East Mamprusi and Gushegu Districts to the east; North Gonja, Savelugu and Kumbungu Districts to the south; Bulisa, Kassena-Nankana East Districts and Bolgatanga municipal (Upper East Region) to the north and; to the west, Mamprusi Moagduri District". The West Mamprusi Municipality is one among the six (6) Assemblies in the North East Region of which Walewale as its capital. The district has vibrant economic and functional connections with major cities in the Northern and Upper West Region such as Savelugu, Gushegu Bolgatanga and Fumbisi among others.

3.1.2 Population size, structure and composition

According to the Population and Housing Census, 2010, the municipality has a total number of people living in it being 121,117. Majority (50.8%) of the populations ate females and the remaining 48.2% are females. The municipality has over 80 communities including towns, villages, fishing and farm camp etc. It is worth noting that, more than 60% (75, 503) of the municipal population reside in a rural settlement.

The population density is 46.4 per sq. km with a sex ratio of 96.8. Thus, for every ten people, over six (63.2%) of the people or habitants of the municipal lives in rural areas, with only 36.8 per cent living in the urban settlement. Like the population of Ghana at large, the municipality's population is said to be youthful with about two-fifth (about 46.0%) of the people residing in the municipality below 15 years showing a wide base population pyramid which is comparatively narrower at the top with a small number (6.5%) of a population above the ages of 60.

3.1.3 Water and Sanitation

Principally, the water supply source in the municipality is small-town water supply systems in Walewale, Wulugu as well as Guabuliga. There are water point sources available in the communities in the form of mechanized boreholes, hand pumps, hand-dug well, dams etc. The main institution or offices enabling access to water and sanitation services in the municipality are the "Community Water and Sanitation Agency (CWSA)", NGOs including World Vision Ghana, NORST, New Energy, and European Union RWSP.

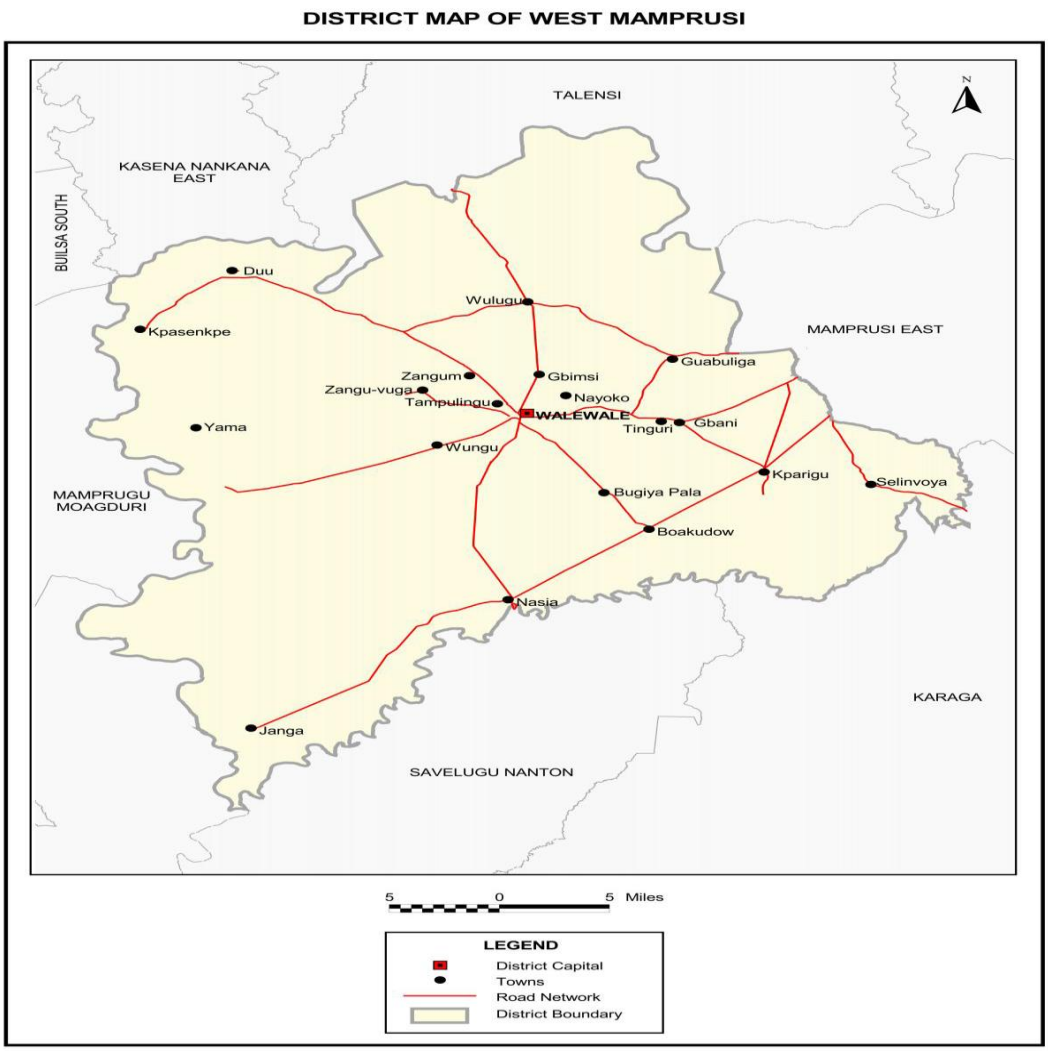


Figure 3.1; Map of the West Mamprusi Municipality

(GSS, 2012)

3.1.4 Vegetation

The vegetation is said to be "guinea savannah woodland, composed of short trees of varying sizes and density, growing over a dispersed cover of perennial grasses and shrubs". This part experience only one type of rainfalls which is usually followed by a prolonged drought. The peak of the raining season is July and August.

3.1.5 Political Administration

The West Mamprusi Municipal Assembly has 41 Assembly members (local government representatives) made up of 31 and 10 elected and government appointees respectively. The District Assembly has legislative, executive and deliberative authorities and as such, it is accountable for the forecasting and progress of communities under its vicinity. The Assembly has a municipal Chief Executive (MCE) who is selected by the president as the political as well as administrative head of the District and assisted by the "District Coordinating Director".

3.1.6 Health

Health facilities in the district are few and sadly very few. The peak of delivery health is in the Municipal capital which is the Walewale Hospital which serves as a referral centre. There are four other private and public health facilities in the district. They include the Janga Polyclinic, Kpasenkpe Health Centre, Kparigu PPAG clinic, Mandela and Our Lady of Roccio private clinics in Walewale. Other health facilities are the CHPS compounds at Gbeo, Nasia, and Guabuliga.

3.1.7 Culture and Ethnicity

The West Mamprusi District is largely inhabited by the Mamprusi making about 75% of the total population of the Municipal. This dominant ethnic group coexists harmoniously with minority groups such as the Bulisa (4.7%), Frafra (2.7%), Kassena (2.2%), the Dagomba (1.8%), and some other ethnic groups in Ghana (2010 PHC, GSS). The main traditional festivals celebrated in the district are the Bugun (fire festival) and Damba festivals. The main dominant religions are Islam (79.4%), Christianity (15.6%) and the Traditionalists (3.7%).

3.1.8 Agricultural activities

Farming is a major occupation of the inhabitant. Majority are subsistence farming thus to feed their family alone. They also sell some of the farm products to take care of their basic needs such as school fees, medical bill etc. Majority of the houses in the municipality are involved in crop far farming (96.9%) and livestock rearing (69.7%). Chicken (31.2%), Sheep (21.6%) and Goat (19.1%) are the dominant animals reared in the district.

3.1.9 Religious affiliation

Majority (79.4%) of the people are Muslims, whereas Christians represent 15.6 per cent of the total people residing in the municipality. People of the Traditional religion are 3.7 per cent and those with no religion constitutes 1.0 per cent.

3.1.10 Literacy and education

Among people aged 11 (eleven) years and more, 39.9% are literate while 60.1% are not literate (these are people who are above 11 years and could not read nor write). There are more literate males (46.4%) than females (33.8%). From above, it means that emphasis is placed on boy education as compare to girl child education.

3.1.11. Economic Activity Status

Over 67% of people in this municipality aged 15 (fifteen) years and above are engaged in some form of economically active whilst 32.3 per cent are not engaged in any form of activity that could earn them money. Almost all (97%) of those who are engaged are employed whilst the remaining 3% were not employed. Nearly half (48.3%) of those who are not unemployed are still looking for a job for the first time. The proportion of employed males (97.6%) is a bit greater than female (96.4%). For those who were

engaged in any form of economic activity, Majority were students (40.5%) while 34.7 per cent performed household duties.

3.2 Study Design

Descriptive cross-sectional with a mixed-method approach was used taking into accounts the time for the study. The qualitative data pursues an "in-depth understanding of social realities, whilst quantitative data provides statistical description and prediction" (Antwi and Hamza, 2015). When the two methods are used together, they tend to complement each other in collecting in-depth, rich and informative data (Axinn and Pearce, 2006).

3.3. Study population

This refers to the total memberships of a specific group that is under investigation or gathering information for purposes of making decisions and inference. The study population for this research is particularly focusing on all the inhabitants of West Mamprusi Municipal targeting those who believe and use traditional medicine as their source of health service in 20 selected communities, health service providers both public and private, traditional health practitioners and some member of the general public.

3.3.1. Inclusive criteria

The inclusive criteria include all category of people within the West Mamprusi Municipality, who have consented to participate in the study and above the age of 15 years.

3.3.2. Exclusive criteria

The population was delimited to all other people outside the municipality and those who refused to give their consent. Health care workers and traditional practitioners working outside the sampled communities were exempted.

3.4. Sample size calculation

Sample size (N) was computed utilizing the Snedecor and Cochran (1989) formula for a point estimate sample;

$N=\frac{Z^2 P(1-p)}{m^2}$;

z = z- score of a 95% confidence level (5% significance level) of the study equivalent to 1.96,

p = estimated prevalence of herbal medicine use of 80% was used for this study. Hence p = 80% (0.80) in this study (Ameade, Ibrahim, Ibrahim, Habib, & Gbedema, 2018)., and

m = margin of error of the study thus 100%- 95%= 5% = 0.05 in this study.

$N= \frac{(1.96)^2 * 0.8*0.2}{(0.05)^2}$

$N= \frac{0.6147}{0.0025}$

N= 245.9

Thus, the calculated sample size was approximately 246

Using 10% as a non-response rate, the total number of people recruited for the quantitative

3.5 Tools for data collections

The tools for data collection were further classified according to the approach to the study; thus qualitative and quantitative.

Variables to measure

Dependent Variable

- Contributions and challenges in Health care delivery

Independent Variables

- Contribution of traditional medicine to health care delivery
- Perception of the effectiveness of traditional medicine
- Prevalence of use of Traditional medicine
- Challenges in of traditional Medicine

3.5.1 Quantitative data collection tools

Questionnaire

The study employed the use of questionnaires for the collection of quantitative data from the study participants.

The questionnaires were administered to individual residents in the selected communities in the district who were 15 years and above in the district.

The questionnaire was constructed by reviewing relevant literature, including existing questionnaires that have been used in previous researches. The questionnaire comprises of open and closed-ended questions. The questionnaire was structured following the objectives of this study.

3.5.2 Qualitative data collection tools

Focus group discussion

Additionally, the researcher adopted the use of a focus group discussion guide (FGD) as a qualitative tool for gathering data from key informants or prominent people. The aim is to gather in-depth information on perceptions and views on a subject matter. FGD for this

research was organized to obtain qualitative data on traditional medicine, its contributions and challenges in the health care delivery system.

Each discussion lasted from 35 to 45minutes. The researcher was the moderator of the FGDs with the help of two other assistants employed by the researcher, who are experienced in social surveys. One of the research assistants observed the pattern of the discussion, while the other recorded the responses given. Handwritten report and voice recorders were used to record the sessions. The responses were Permission was sought from participants and participation in the discussion was voluntary.

In all, three (3) focus group discussions were organised with each group having a membership of between nine (9) and thirteen (13). The membership of the FGDs included all category of persons within the inclusive criteria.

In-depth interviews

An in-depth interview is an of type qualitative investigative method that involves carrying out exhaustive face to face interviews using a small number of respondents to unravel their insights or views on a particular issue (Jacobvitz et al., 2002).

This tool was employed to solicit the views of traditional health practitioners (TMP). In all, eight (8) in-depth interviews were conducted using an in-depth interview guide. The in-depth interviews were conducted along with the study objectives which provided more detailed information to support the quantitative data collected.

3.6. Sample Technique

A snowball sampling technique was used to identify key traditional medical Practitioner (key informants) and communities. A simple random sampling technique was also used to identify 10 households both left and right of the bottle using the UNICEF bottle

spinning technique to interview the one with the most knowledge and ready to be interviewed. The purposive sampling technique was also used to selected participants for the data was 270 sample unit. On the qualitative data, a total of three (3) FGDs with the community members and eight (8) IDI with the traditional medical practitioners were conducted. A saturation point was reached in each of the techniques. 3.3 Data Source

Data was sourced from two main sources, namely; primary and secondary data.

3.6.1. The Primary source of Data

The primary data were sourced through the use of semi-structured questionnaires to collect quantitative data from traditional Medical practitioners, and members of the communities. The interviews guides were used to source qualitative data from key informants and Focus Group Discussions (FGDs)

3.6.2 The secondary Source of Data

The secondary data sources include hospital records, reports, project documents, journals, district assembly documents, magazines among others. Besides, information from the internet was part of the secondary database.

3.7 Data Analysis and Presentation

3.7.1 Quantitative Data Analysis and Presentation

Descriptive analysis was done using Statistical Package for Social Sciences (SPSS) version 25 and Microsoft Excel. All computation was done at 95% confidence level and 5% level of significance ($P<0.05$). Data were analysed and presented in the forms of graphs, tables, diagrams and figures to better understand the information produced. Frequency distribution tables and descriptive analysis was used to give outputs in the forms of mean, standard deviations and percentages. Chi-square test (x2) of the

association was done to determine the association between Socio-demographic characteristics and other variables in the research objectives.

3.7.2 Qualitative Data Analysis

All qualitative interviews were analysed using content analysis techniques. The analysis was done along with the quantitative data analysis which was based on the various research objectives.

3.8. Quality control

Sufficient training of the data enumerators was the foremost measure that was taken to safeguard the quality of data. To further ensure that the data collected was reliable and valid, the data collection was done in one of the circuits not selected for the study. Before the actual data collection, the questionnaire was piloted at one of the communities among 15 (fifteen) respondent. The essence of pre-testing was to aid in restructuring the questionnaire for consistency and to solicit the right information. Double-entry of data was done in two data sets which were compared at the analysis stage. This was useful in identifying some omissions during the data entry.

Thereafter, questionnaires were coded onto Kobo Toolbox, checked for completeness, consistency and logical accuracy of the survey instrument before it was deployed. All responses to the questionnaire were randomized to reduce the enumerator's selection bias.

3.9. Rigor of the Research

In other to create the real significance of the study, this study adopted the qualitative research rigour criteria which include credibility, transferability, dependability and confirmability as acknowledged by Lincoln & Guba, (2000).

3.9.1 Credibility

Credibility is a part of the research rigour. It makes the reader have confidence, the truthfulness of this results and findings of the study (Polit & Beck, 2010; Profetto-McGrath et al., 2010; Speziale & Carpenter, 2007). Credibility also "ensures that the research methodology adopted measures what is intended to measure"(Shenton, 2004). To ensure credibility in this research, the researcher read extensively on the topic of current literature and also took guidance from the supervisor. The aforementioned informed the choice of the research methodology and design as well as guided the drafting of an interview guide that was appropriate to gather the true response from qualified study participants to answer the research questions. To add to this, it was necessary to establish a strong rapport to be able to build trust to allow the participants to feel free in answering the questions. This was attained by prolonging the interviews and asking follow-ups questions to bring forth the real issues concerning hepatitis B. Again, triangulation was done by adopting several tactics such as prolonged engagements of participants, reframing some question and others.

The supervisor in debriefing on the research methodology and interviews guides made critical inputs which address some gaps in the work and necessary corrections were done. Colleagues and peer also made essential contributions that enriched the work. The maiden research findings and interpretations were showed to the participants to be sure

that reflected their views and experiences (Profetto-McGrath et al., 2010) before making conclusions on the said results.

3.9.2 Transferability

Another key parameter to ensure the trustworthiness of this study was transferability. Transferability refers to the possibility that the outcomes of the study have inferences for others in related conditions(Creswell, 2014). This is often call called fitness; transferability decides whether findings can suitably fit well in or are transferable to related conditions. To realize transferability in this study, a vivid description of the setting, methodology, and characteristics of the participants have been provided.

3.9.3 Dependability

According to (Lincoln & Guba, 2000), dependability is one of the rigours of research. The dependability of a study is the consistency and reliability of the research (thus judgments about likenesses and dissimilarities of content are stable with time) (Graneheim & Lundman, 2004). To realize this, the same interview guide was used to interviewing all respondents which produced similar findings. Aside above, an exhaustive explanation of all phases of the methodology in this research process has been outlined to offer readers the chance to follow the parameters to replicate this study.

3.9.4 Confirmability

The final step in ensuring the rigor of the study was confirmability. “Confirmability in research is the degree to which the results could be confirmed or substantiated by others. It is to ensure that the meanings of the data collected are not changed by the prejudices, knowledge, and experiences of the researcher”(Kusi, 2012). The researcher ensured

confirmability by "reflexivity and bracketing" her biases, thoughts and assumptions, delimitation etc.

To guarantee the confirmability of this study, the data collection tools (in this case the interview guides) were developed after thoroughly reviewing relevant literature and structured in accordance with the study-specific objectives. The researcher probed based on answers given to the questions using an interview guide to bring about the appropriate response from participants to answer the research questions

Android (smartphones) was used to collect the data this allow the researcher to track the progress of work and also provide feedback to the enumerators on the field. The data was clean before being exported onto SPSS version 22.5 for analysis.

3.10. Ethical Considerations

An introduction letter was obtained from the head of the department. Thereafter, permission was sought from the Regional Health and District Health Directorate and health facilities before the commencement of the study. A written and verbal permission was required from each of the respondents before they were enrolled on the study. Before signing the consent, the study protocols were all explained in the respondent's language of choice to enhance a better understanding of the research protocols.

CHAPTER FOUR

PRESENTATION OF RESULTS

4.0 Introduction

This chapter presents the results of the study. The results were presented in line with the study objectives.

4.1. Socio-demographic characteristics of respondents

Within the age brackets, the study revealed that 23.3% were within the ages of 21 to 30 years, Majority (72.6%) of the study participants were within the ages of 31 to 40 years, only 0.7% were within 41 to 50 years and 3.3% of the study participants were above 50 years. The mean age was 36.4 with a standard deviation of 8.5. The least age among the participants was 23 years and 61 years was the maximum age. On the qualitative data, almost all of the personal interview was above forty (40) years with only two (2) of the practitioners being 35 years and 29 years respectively. Among the study participants, majority (77.4%) were males and 22.6% were females. Also, the participants in the interviews were both males (65.4%) and females (34.6%). Most of the respondents (52.6%) have less than 3 (three) children, 20.7% have between 3 to 5 children, 6.7% had more than six (6) children and 19.6% have no child. The maximum number of children was 9(nine) and the minimum being zero (no child). The mean number of children us 2.6 with a standard deviation of 2.3.

Majority (90.4%) of the study participants resides in rural areas with only 9.6% being residents of the urban areas in the municipality. On the average monthly income, 17.0% earn less than 200 Ghana cedis, most of the respondents (44.4%) earned between 200 to 499 Ghana cedis, 29.3% earned between 500 to 799 Ghana cedis, 5.2% of the

respondents earn about 800 to 1000 Ghana cedis on monthly basis and only 3.7% obtained a monthly income above 1000 Ghana cedis. The mean (average monthly income) was 455.1 and a standard deviation of 280. Majority (50.4%) engaged in farming, 19.6% engaged in small trade business, 15.6% are employed with the formal sector, 3.7% were housewife, 3.7% were students and 7.0% of the study participants being engaged in other occupation such as seamstress/tailoring, hairdressing etc.

On the ethnicity of the study participants, the study revealed that majority (75.9%) were Mamprusi, 8.5% were Kassena, 5.6% were Frafras, 2.2% were Kantoosi and 7.8% belongs to other tribes (minor tribes that contributed to the study such as Gonjas, Dagombas, Chokosis etc.) A total of one hundred ninety-six representing 72.6% of the study participants were married, 23.3% were single and 4.1% were divorced and widowed. All the person engaged in the qualitative studies were all married. Majority (73.0%) of the study participants are Muslims, 16.7% are Christians and 10.4% of the respondents belong to the African Traditional Regions (ATR).

Majority of the study participants (50.4%) have an education up to senior high school (SHS), followed by 15.6% had education up to primary school, 11.5% being tertiary education, 10.0% had no educational background, 1.9% had some form of non-formal education (See table 4.1 below for the details).

Table 4. 1; Socio-demographic Characteristics of the study participants

Variables	Categories	Frequency	Percentage
Age	21 to 30 years	63	23.30%
	31 to 40 years	196	72.60%
	41 to 50 years	2	0.70%
	51 years and above	9	3.30%
	Mean+/-SD		36.4+/-8.5
	Maximum		61 years
	Minimum		23 years
Sex	Male	209	77.40%
	Female	61	22.60%
Marital Status	Single	63	23.30%
	Married	196	72.60%
	Divorced/Widowed	11	4.10%
Number of children	No child	53	19.60%
	less than 3	142	52.60%
	3 to 5 children	56	20.70%
	Greater than 5	18	6.70%
	Mean+/-SD		2.6+/-2.3
	Maximum		9 children
	Minimum		0(no child)
Place of residence	Urban	26	9.60%
	Rural	244	90.40%
What is your average monthly income			
	Less than 200	46	17.00%
	200 to 499	120	44.40%
	500 to 799	79	29.30%

	800-1000	14	5.20%
	greater than 1,000	10	3.70%
	Mean+/-SD		455.1-/+280
	Maximum		1500 cedis
	Minimum		0 (no amount)
Religion	ATR	28	10.40%
	Christianity	45	16.70%
	Islam	197	73.00%
Highest level of education			
	No formal education	27	10.00%
	Primary education	42	15.60%
	JHS	29	10.70%
	SHS	136	50.40%
	Tertiary education	31	11.50%
	Non-formal education	5	1.90%
Occupation	Farming	136	50.40%
	Small trade business	53	19.60%
	formal Sector occupation	42	15.60%
	Housewife	10	3.70%
	Students	10	3.70%
	Others	19	7.00%
Ethnicity	Mamprusi	205	75.90%
	kassena	23	8.50%
	Frafra	15	5.60%
	Kantoosi	6	2.20%
	Others	21	7.80%

Field survey, 2020

4.2 Contributions of traditional medicine in the health care delivery

Majority of the participants (53.5%) did not feel herbal medicine has many benefits to improving the health care system, some 46.5% believed the contribution of herbal medicine to the health care system is immense (figure 4.1).

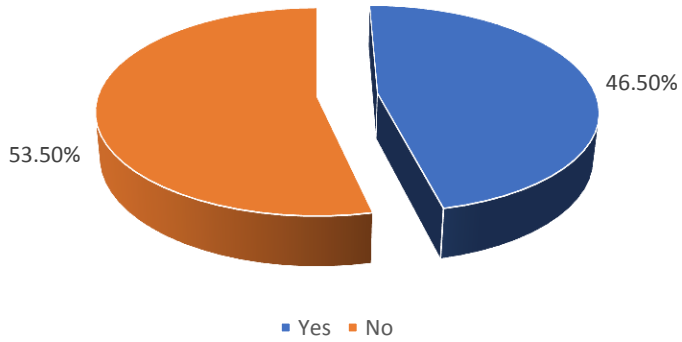


figure 4.1. has herbal medicine improved HCS

Figure 4.1. has herbal medicine improved HCS

Field survey, 2020

Most of the study participants (35.7%) have been using herbal medicine for quite some time now, 33.6% have been using herbal medicine not too long ago, 20.0% have been using herbal medicine for a very long time with about 10.7% using herbal medicine since the day they were born.

According to the study participants, the benefits of traditional medicine includes the following; 38.5% felt herbal medicine was beneficial because they were satisfied with a treatment, 30.4% said they can carry about their work, some 45.2% of the participants felt it has made the health of their family good, 53% said using herbal medicine has made

them able to work and feed their family, 41.0% believed herbal medicine allowed them to do work for money and 51.1% felt their children were healthy.

On the contribution of herbal medicine to the health care system, 38.9% mentioned that they were able to access health needs within a very short distance instead of having to walk for very long distance to seek orthodox medicine, 32.2% believed that as compared to the orthodox medicine, the herbal medicine allows clients to spend very less for health expenditure, 45.9% stated that they appreciate and accept the process of healing, 37.4% were of the view that herbal medicine offers them the opportunity to seek for health care when they were sick and pay later when they get hold of money, 57% of the respondents said herbal medicine have contributed greatly to reducing deaths that are associated with bad roads leading to the health centres, 16.3% believed that herbal medicine attends to both spiritual and physical needs (thus the herbal medicine adopts a holistic approach in the treatment of ailments (Table 4.2).

On the benefits and contributions of traditional medicine, qualitative data supported the above narrative. For easy understanding, the benefits and contributions were categorized into five (5) themes including (1) Short distance/ easy to access (2) affordability (3) Appreciate and accept the healing process (4) Reduce the risk of death and (5) Attend medical and spiritual healings

1) Short distance/ easy to access

   "...My son, we are always here our people they do not need to go the far distance to seek health. Errheeee, the herbs are just in the bushes here..."
   (A 50-year-old traditional medical practitioner)

2) Affordability

"...ntoh eeiii, when it comes to cost, it is much better. For some of the treatment we offer here, we do not even charge at all. You go into the shrine yourself and promise the gods what you would do for them if they should heal. So, when you get the healings then you come and pacify and redeem your pledge to the gods. So, when it comes to cost, is very affordable. For some of the sickness too we just ask them to buy colanuts and alcohol or water then a sum of money as low as two (2) Ghana cedis coins (but the person can decide to increase it) we use these items to talk to our ancestor so that they can add the needed power for the drugs to work. After which they do not pay anything..." (A 60-year-old traditional medical practitioner).

"...Hahaha, you see these herbs are just with us, but sometimes we consult the elders for assistance. So mostly we just go to there and we show the leaves, roots etc. we should for the treatment..." (A 41-year-old, FGD)

3) Appreciate and accept the healing process

"...the herbs have been used by our fathers' fathers and nothing happened to them so we are comfortable to use it..." (A 54-year-old man traditional medical practitioner)

"...the healing process is faster and so we like herbal medicine and is often very perfect." (A 44-year-old women, FGD)

"...Oooh as for herbal medicine is part of our culture ooh, that is what our grandfathers used so we would also use it..." (A 42-year-old women, FGD)

4) Reduce the risk of death

".... When it comes to the pregnant women, we have averted many deaths in very critical cases. I woke up to see my mother deliver women I learned from her and I practice it free of charge. Sometimes, you hear in some villages how pregnant women die in attempt to reach the hospital, for this

village that is not news..." (A 72-year woman traditional medical practitioner)

"... Eeiii, sometimes we have heard people being told that, their sickness has no medicine in the hospitals. Is not like it has no treatment but is because they hospital does not understand somethings... Hahahaha.... My son, modernization has killed is papa. If these people are left in the hospital, they would just die like but we could have saved them..." (A 59-year-old traditional medical practitioner)

5) Attend medical and spiritual healings

"...my son, we do not have any machine to check for sickness, but you see they kind of consultation we do is more than what a machine can do for me. Trust me, we do not only treat the symptoms, we go on to treat the real cause of the issues. When you offend the gods, there is no way you can get healing at the hospital, you must come back to the gods and apologies so that some rituals can be performed to pacify the gods and you be healed. Also, when you are poisoned, we are able to remove the poison. You this part of the world we believe in witchcraft, when a witch is chasing you; we are able to rescue the victims. These are just some of the few things we can help the people with..." (a 64-year-old traditional medical practitioners).

Table 4.2 Contributions of traditional medicine in the health care delivery

Variables	Categories	Frequency	Percentage
How long have you been using traditional medicine			
	Not long	47	33.60%
	Quite sometime	50	35.70%
	Very long time	28	20.00%
	Since I was born	15	10.70%
Benefits of using traditional medicine			
	Satisfied with treatment	104	38.50%
	Able to carry my work	82	30.40%
	The health of family is good	122	45.20%
	work and feed family	143	53.00%
	work and make money	111	41.10%
	My children are healthy	138	51.10%
What is the traditional medicine contribution(s) to maintaining quality health			
	Short distance to access health	105	38.90%
	Spend less on health care	87	32.20%
	appreciate and accept the process of healing	124	45.90%
	Access health care and pay later	101	37.40%
	transportation cost lessens	113	41.90%
	Reduce the risk of losing patient due to bad roads	154	57.00%
	attend to both medical and spiritual healing	44	16.30%
	have attention for total health not specific	73	27.00%

Field survey, 2020

4.2.1 Association between socio-demographics and the contribution of herbal medicine to health care delivery (HCS).

The study in a multivariate analysis revealed that Majority (66.5% vs. 60.7%) of the participants who were males and females respectively were of the view that herbal medicine had contributed towards health care system compare 33.5% and 39.3% of the participants who were males and females respectively did not think that herbal medicine has contributed towards the health care delivery. The study further revealed that there was a significant association between sex and the contribution of herbal medicine to the health care system (X2=7.24, P=0.037).

Among the number of children, majority (66.0%, 66.9%, 62.5% and 55.6%) of the study participants who had no child, between one (1) to three (3) children, between four (4) to six (6) children and those who had more than six (6) children respectively believed that herbal medicine had contributed to health care delivery compared to 34.0%, 33.1%, 37.5% and 44.4% of the study participants who had no child, between one (1) to three (3) children, between four (4) to six (6) children and those who had more than six (6) children respectively did not believe that the herbal medicine had contributed to health care delivery. The number of children and the contribution of herbal medicine to health care delivery was statistically significant (X2=7.32, P= 0.019).

Majority (61.5% and 65.6%) of the respondents in urban and rural respectively believed that the herbal medicine had contributed to health care delivery whilst 38.5% and 34.4% of the respondents in urban and rural respectively disagree.

On occupation, majority (70.6%, 66.0%, 52.4%, 70.0%, 50.0% and 57.9%) of the participants who are farmers, small trade business, formal sector, housewife, students and

other forms of job respectively did believe that the herbal medicine has contributed to the health care sector compare to 29.4%, 34.0%, 47.6%, 30.0%, 50.0% and 42.1% of the participants who are farmers, small trade business, formal sector, housewife, students and other forms of job respectively who did not think the herbal medicine have contributed in any way to the health care system. The study further revealed a significant association between occupation and the contribution of herbal medicine to the health care system (X2=14.84, P=0.037).

However, the study could not establish any significant statistical association between the contribution of herbal medicine to the health care system and ethnicity (X2=5.56, P=0.227), level of education (X2=2.24, 0.814), religion (X2=2.319, P=0.321), average monthly income (X2=5.00, P=0.29), marital status (X2=1.51, P=0.680) and age (X2=1.51, P= 0.68) (See table 4.3 for details).

Table 4.3 Association between socio-demographics and the contribution of herbal medicine to health care delivery (HCS).

Variables	Categories	Does TM contribute to health care		Statistical test
		Yes	No	
Age	21 to 30 years	42(66.7%)	21(33.3%)	X2=1.51
	31 to 40 years	127(64.8%)	69(35.2%)	P=0.68
	41 to 50 years	2(100.0%)	0(0.0%)	
	51 years and above	5(55.6%)	4(44.4%)	
Sex	Male	139(66.5%)	70(33.5%)	X2=7.24
	Female	37(60.7%)	24(39.3%)	P=037
Marital Status	Single	42(66.7%)	21(33.3%)	X2=1.51
	Married	127(64.8%)	69(35.2%)	P=0.680
	Divorced/widowed	7(63.6%)	4(36.4%)	
Number of children				
	no child	35(66.0%)	18(34.0%)	X2=7.32
	1 to 3 children	95(66.9%)	47(33.1%)	P=0.019
	4 to 6 children	35(62.5%)	21(37.5%)	
	greater than 6	10(55.6%)	8(44.4%)	
Place of residence	Urban	16(61.5%)	10(38.5%)	X2=12.81

	Rural	160(65.6%)	84(34.4%)	P=0.041
Average monthly income				
	Less than 200	32(69.6%)	14(30.4%)	X2=5.00
	200 to 499	81(67.5%)	39(32.5%)	P=0.29
	500 to 799	44(55.7%)	35(44.3%)	
	800-1000	11(78.6%)	3(21.4%)	
	greater than 1,000	7(70.0%)	3(30.0%)	
Religion	ATR	18(64.3%)	10(35.7%)	X2=2.319
	Christianity	25(55.6%)	20(44.4%)	P=0.321
	Islam	133(67.5%)	64(32.5%)	
Highest level of education				
	No formal education	18(66.7%)	9(33.3%)	X2=2.24
	Primary education	31(73.8%)	11(26.2%)	P=0.814
	JHS	19(65.5%)	10(34.5%)	
	SHS	87(64.0%)	49(36.0%)	
	Tertiary education	18(58.1%)	13(41.9%)	
	Non formal education	3(60.0%)	2(40.0%)	

Occupation	Farming	96(70.6%)	40(29.4%)	X2=14.84
	Small trade business	35(66.0%)	18(34.0%)	P=0.037
	formal Sector occupation	22(52.4%)	20(47.6%)	
	Housewife	7(70.0%)	3(30.0%)	
	Students	5(50.0%)	5(50.0%)	
	Others	11(57.9%)	8(42.15%)	
Ethnicity	Mamprusi	136(66.3%)	69(33.7%)	X2=5.56
	Kassena	12(52.2%)	11(47.8%)	P=0.227
	Frafra	10(66.7%)	5(33.3%)	
	Kantoosi	6(100.0%	0(0.0%)	
	Others	12(57.1%)	9(42.9%)	

Field survey, 2020

4.3 Perception of the effectiveness of traditional medicine

Most of the respondents (56.3%) believe herbal medicine was effective in the treatment of disease while 43.7% did not believe that herbal medicine was effective in the treatment of ailments. Among those who believed herbal medicine was effective, 9.6% stated that herbal medicine was effective in treating bone fractures, 7.4% mentioned chronic skin infection, 6.3% mentioned epilepsy or mental disorders, 3.7% stated infertility or sexual dysfunction, 7.8% stated malaria or fever or typhoid, for 3.7% of the study participants, they think herbal medicine was effective in treating sexually transmitted disease, 8.1% believed it was stroke or hypertension was effectively treated by herbal medicine.

Information gathered from focus group discussion and interviews supported above;

Most of the people who used herbal medicine were of the view that it was very effective in treating some particular illness. Below are excerpts of the conversion;

> *"...my brother for us here herbal medicine is actually what we use for most of our illness. You see this tree; every morning one man comes to this village to sell chemical drugs for some basic ailment which we buy. But when it comes to sickness like Bone fraction or just having pains in the bones the herbal medicine is best at giving relieve to us..."* (a 41-year-old man who uses herbal medicine, FGDs)
>
> *"...You see me, my son there are some sickness that we best treat, for example fractures, infertility or sexual dysfunctions, chronic skin infections and many others ailments. Even those who go to the hospitals would come back here for treatment..."* (a 54-year-old traditional medicine practitioner)
>
> *"...For me I think herbal medicine is very effective in treating the sickness we call errrhrn this rich people sickness.... Ahaaa sugar sickness or we*

> *call it 'leg and hand'. This sickness makes the legs and hand non-functional and some may even loss their sight some cannot even talk. We are in this village and we see people come from far places and within a year or less they are treated and they go…"* (A 35-year-old woman, FGD)
>
> *"…Ooh yes, the herbal medicines are also very good at treating madness or illness associated with mental health as well as chronic skin disease, common sickness like a body being very hot, headache, vomiting are all treated her by our fathers without using any hospital drugs…"* (A 44-year-old man, FGD).

Majority of the respondents (63.3%) believed orthodox medicine was more effective than herbal medicine and 36.7% believed herbal medicine was more effective as compared to orthodox medicine.

In the qualitative data, however, the participants were also divided as to which is effective but the practitioners felt herbal medicine was effective than orthodox medicine. Some were also unable to align to any of them. Below are some excerpts from the interviews

> *"…My son am a herbalist, and I can tell you that for some reasons we are efficient in delivery health care than the hospital or orthodox medicines. Like I said earlier, some of the people we treat here are people who have been admitted in some hospitals, some have even travel to Tamale for medical attention and yet still they don't get rescue. Most of the times after they have tried everything and felt they have loss, then they come here and we will heal... so my son, for me I think we are effective than the hospital medicines…" (A* 46 years old Traditional medical practitioner*)*
>
> *Errrhm… am not comfortable calling myself I traditional healer. But since you have the traditional medical practices to include some activities of the church, I would proceed. You see sometimes, people come here with*

ailments that they have tried severally years to seek treatment but to no avail and for just some hour prayers they are healed by the power of Jesus. So, you that's is why am not comfortable to call myself a traditional medical practitioner because this is not my might but the might of the Lord Jesus Christ. You see I can say on authority that, the faith healers are effective than the orthodox medicine (A 47-year-old faith healer*).*

for some of the participants, they were unable to tell which is more effective.

*"…My friend, your questions are difficult oohhhh. Hahahahahahahahah… ntoh eeiii Hmmmm this is very difficult to tell oooh. For me I cannot say which one is …effective and which is not. I think they are all effective. Is just that for our village most of us have to use the herbal medicine and so for me if I am push too hard to the wall I would go for herbal medicine to be effective than orthodox medicine… Hahahaha but heyyy I feel that they are all doing very well and are effective…" (*A 52 years old man)

"…Okay for me I cannot which one is effective than the other, they are all good. If they were not all good like by now all those patronizing them would have been dead by now…" (A 49-year-old women, FGD)

Majority (78.9%) have never experienced any adverse or side effect of orthodox medicine and 29.6% who have ever had the adverse effects of orthodox medicine. Comparatively, 70.4% of the respondents have never had any adverse effects with the use of herbal medicine whilst 29.6% have had adverse effects with regards to the use of herbal medicine.

Some of the study participants in the qualitative study testify that they have had some side effects in treating themselves using both herbal and orthodox medicine. Below are some excerpts of the conversation;

> *"...Hmmm, true personally I do have not encountered any side effect with regards to orthodox medicine, but my elder brother had a fracture in the year 2015, he was sent to a hospital and was operated upon. We were told because he is old the healing would take long. He was always on and off till about six months. When he was discharged, he was still feeling pain and could not even walk well till now..."* (40-year-old women, FGD)

> *"...Ooh yes many times, many years ago they were giving some malaria medicines. Hmmm that medicine till date when I take it; I would scratch my body aaaaaaahhhhhh and it even makes me sicker, one time my daughter had unknown disease when she was taking blood from the hospital. On her sick bed, we needed blood urgently to transfused her but we could not get a match blood in the family immediately. The hospital loan blood to us not knowing it was infected. After sometime, she was tested positive for the liver disease. She is fine now but she is now treating it locally and it much better..." (*A 54 years old man, FGD)

Some traditional medical practitioners were of the view that, they also treat side effects of some medication given at the hospital.

> *"...my son, among the ailment we treat here are some complicated problems that are brough from the hospital for our attention. We cannot say we cannot attend to them, so we treat them..."* (A 51-year-old Traditional Medical Practitioner)

In the case of herbal medicine, some others have had similar experiences to orthodox medicine.

"…yes, last time I was given an herbal preparation and I needed to boil it and drink, bath and also put myself on the vapor. When I took the herbal medicine through mouth, Hmmmm I run aaaaaaahhhhhh until I had to visit the herbal practitioner for another herbs…" (A 49-year-old man, FGD)

"…Hmmm, this is an experience I do not want to recount. Those people here know of what happened to my only daughter. She was in labour in the midnight. We could not get a motor king to transport to the clinic. So, we had to go to one old woman in this village who was known to be assisting women to deliver. The old woman was able to deliver her but there was some complication and by the time we got to the Walewale hospital the following day……. crying……. silent. She had pass on…" (A 52-year-old women, FGD)

Most (43.3%) of the participants disagree with the statement that herbal medicines are dangerous, 22.2% strongly disagree with the statement, 18.1% agreed that herbal medicines were dangerous to use, with about 16.3% strongly agreeing that, herbal medicines were strongly agreed (see table 4.4 for details).

The qualitative data supported the above findings. Those who patronize herbal medicine felt they not dangerous. On the other hand, those who patronize orthodox medicine more felt that herbal medicine was somehow dangerous. See below some extracts from the focus group discussion and interviews with a practitioner

"…Somehow, I can say that herbal medicine is dangerous because some of the drugs are not supposed to be touched by the mouth, if by mistake it touches your mouth, it has a dire effect. Children can by mistake take them and the dire effect is immense. So, for me though it's helpful, I think they are dangerous…" (A 41-year-old man, FGD)

"…Ooh for me I do not think that herbal medicine is bad, its good and cannot be dangerous…" (A 50-year-old man recounted, FGD)

"... for me, I do not think herbal medicine are dangerous. Because we have been using these herbs for a loooong time, our great grandfather passed it to us and we would also pass it to our children before we die. If herbal medicine were dangerous then why is it that our great grandfathers stayed longer on earth than us; meanwhile they had no form of other medicine aside these herbal preparations. Herbal medicine cannot be said to be dangerous…" (A 54-year-old tradition medical practitioner)

Another practitioner further explained why people think herbal medicine is dangerous.

"… they problem with traditional medicines is that, they believe in instant justice and also the category of activities is vast. We are not into medicine, if for example someone steals something that is valuable to you. We can swear by the gods and by close of the day if you don't return the item, the gods would rather make you mad or strike you to death. So, some of this thing makes people to feel that our practice is dangerous but that is not the case. …." (a 45-year-old traditional medical practitioner)

Table 4.4; Effectiveness of traditional medicine

Variables	Categories	Frequency	Percentage
Effectiveness of herbal medicine			
	Yes	152	56.30%
	No	118	43.70%
Diseases effectively treated by herbal medicine			
	Bone fracture	26	9.60%
	chronic Skin infection	20	7.40%
	Epilepsy/mental illness	17	6.30%
	Infertility/sexual weakness	10	3.70%
	malaria/fever/jaundice/typhoid	21	7.80%
	Sexually transmitted diseases	10	3.70%
	Stroke/hypertension	22	8.10%
Which is more effective			
	Herbal medicine	99	36.70%
	Orthodox medicine	171	63.30%
Ever had an adverse effect of the use of herbal medicine			
	Yes	80	29.60%
	No	190	70.40%
Ever had an adverse effect of the use of orthodox medicine			
	Yes	57	21.10%
	No	213	78.90%
Herbal medicines are dangerous			
	Strongly agree	44	16.30%
	Agree	49	18.10%
	Disagree	117	43.30%
	Strongly disagree	60	22.20%

Field survey, 2020

Most (29.6%) of the respondents felt herbal were moderate in terms of efficacy, 27.8% felt herbal medicines were not effective at all, 22.6% mentioned that in terms of efficacy, herbal medicines were effective whiles 20.0% believed herbal medicine was very effective in term efficacy (see figure 4.2).

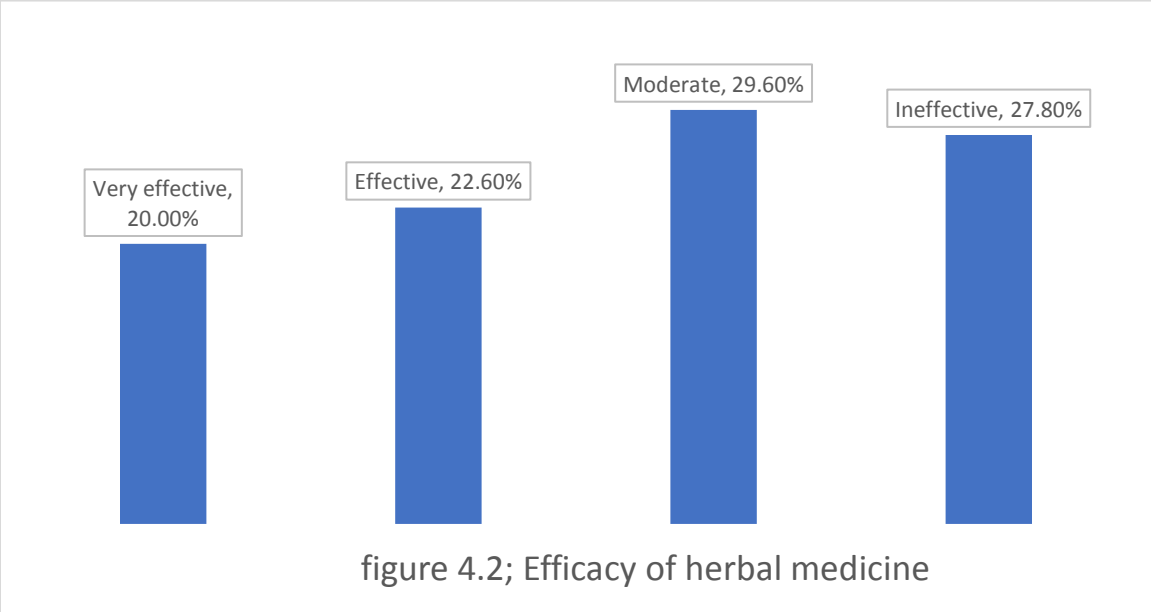


Figure 4.2; efficacy of herbal medicine

Field survey, 2020

4.4 Use of traditional medicine

Before dwelling on the use of traditional medicine, the respondents were quizzed on their health status. The study revealed that most (49.6%) of the respondents perceived their health status as very good, 41.5% perceived it as good, 5.2% perceived their health as average and only 3.7% felt their health status was poor. For most of the respondents (43.0%) said they rarely or have never fallen sick in the last three (3) months, 29.6% had fallen sick only once in the last three months, 12.2% said they have been sick for about

two (2) to three (3) times in the last three (3) months, 6.3% said they fall sick frequently and 8.9% fell sick very frequently in the last three (3) months.

In the last year, most of the respondents (48.1%) have only felt sick once in a year, 40.0% have never been sick in last year, 6.7% of the respondents are often very frequent with illness in the last one year, followed by 4.8% of the respondents have been sick for about two (2) to three (3) times in the last year and 0.4% were sick frequently in the last year.

Majority (54.4%) of the study participants have not subscribed to any of the health insurance policy with about 45.6% having access to the health insurance policy and have been duly subscribed to it. Majority (74.5%) of the study participants seek medical care from orthodox medicine the last time they got sick, 15.6% used herbal medicine and 9.6% used traditional birth attendance (TBA) the last time they needed health care.

Most of the respondent (44.4%) used herbal medicine as complementary to orthodox medicine, 31.7% used herbal medicine as an alternative to orthodox medicine, 21.7% of the respondents used herbal medicine as the first-choice treatment and some 2.2% of the study participants used herbal medicine other reasons other than those mentioned aforementioned.

The above data is further supported by some of the thoughts of those engaged in the qualitative data; some of the participants used herbal medicine as complementary to the orthodox medicine, alternative to orthodox medicine and others used herbal medicine. Below are some extracts;

> *"…for me, I have been using herbal medicine since I was born. The herbal medicine has been used for a long time since time fast pass. So, for me*

anytime I am sick, my father prepares for us some herbs and we are okay. I also know some of the herbs…" (A 52-year-old women, FGD).

"…for me sometimes I used the herbal medicine to complement the orthodox medicine. I had a fracture and was rushed to the hospital after three (3) I had asked for discharge to continue the local treatment to avoid deformity…" (a 41-year-old year man, FGD).

"…. As you can see, we have no health facility in this area and I would need to travel for a distance of about 20KM. so for us in this village we patronized herbal medicine when we get sick; because we have no options…" (A 50 years old women, FGD).

Majority (63.1%) used herbal medicine for the treatment of illness, 19.0% of the respondents used herbal medicine for the promotion of health and 17.9% used herbal medicine for the prevention of illness.

These are further supported by the data gathered from the interviews and focus group discussion. Below are some extracts of the conversation;

"…for me, I take herbal medication when I am sick…" (A 35 years old women, FGD)

"…I take herbal medicine when I need protection, we have some herbs here we take. When you bath it nobody can harm you in any form…" (A 42-year-old man, FGD)

"...for us, we also take some of the herbal preparation to prevent some ailment, for instance, one needs to seek forgiveness from the gods when he does something that is said to be a taboo of the land…" (A 55 years old traditional medical practitioner)

".. for as traditionalist, we are able to put some laws (values, norms, taboos) to promote the health of the people. For instance, is a taboo to be

seen to have thrown menstrual materials away in the open, also sex before marriage is forbidden and among many things. All these go a long way to promote the health of the people..." (A 48 years old traditional medical practitioner)

For those who took the herbal medicine, 37.0% were advised by their relatives to go for herbal medicine, 33.3% had the medicine from over the counter herbal remedies, 15.4% had the herbal preparation from herbal practitioners and 14.2% had the herbal medicine from health professionals.

Most of the study participants (34.6%) have not used herbal medicine in the last three (3) months, 23.1% have used herbal medicine only once in the last three (3) months, 19.2% of the respondents have used herbal medicine in two (2) to three (3) times in the last three (3) months, 15.4% are very frequent in using herbal medicine in the last three months and 7.7% are frequent in using herbal medicine.

Also, 37.2% used orthodox medicine frequently in the last three (3) months, 12.8% are very frequent in using orthodox medicine in the last three (3) months, 20.6% only used orthodox medicine about two (2) to three (3) times, 12.5% only used orthodox medicine once, and 16.7% have never used orthodox medicine in the last three (3) months (see table 4.5 below for details).

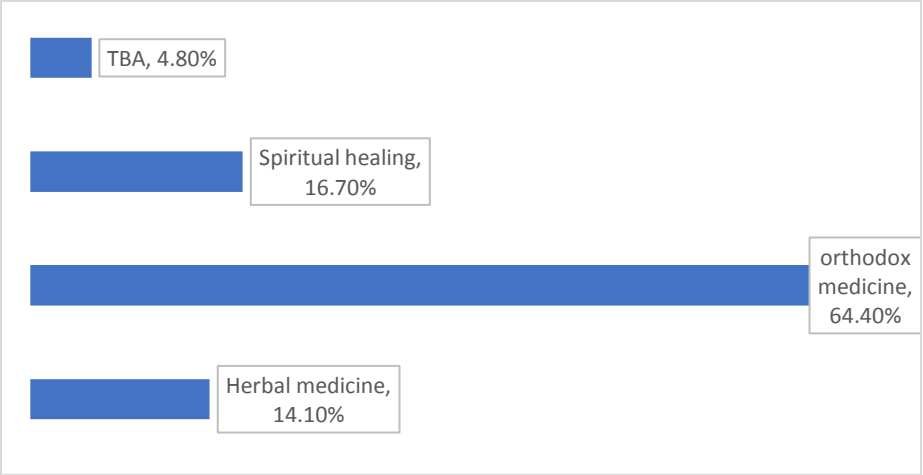
Table 4.5; Use of traditional medicine

Variables	Categories	Frequency	Percentage
How do you perceive your health status			
	Very good	134	49.60%
	Good	112	41.50%
	Average	14	5.20%
	Poor	10	3.70%
How often did you fall sick in the last 3 months			
	Very frequently	24	8.90%
	Frequently	17	6.30%
	about 2 to 3 times	33	12.20%
	Only once	80	29.60%
	Rarely/Never	116	43.00%
How often did you fall sick in a year			
	Very frequently	18	6.70%
	Frequently	1	0.40%
	about 2 to 3 times	13	4.80%
	Only once	130	48.10%
	Rarely/Never	108	40.00%
Do you subscribe to NHIS			
	Yes	123	45.60%
	No	147	54.40%
What medical care did you seek the last time			
	Herbal medicine	42	15.60%
	orthodox medicine	202	74.80%
	Traditional Birth Attendant (TBA)	26	9.60%
How do you use herbal medicine			
	First choice treatment	39	21.70%
	an alternative to orthodox medicine	57	31.70%

	complementary to orthodox medicine	80	44.40%
	others	4	2.20%
Ways herbal medicine is used			
	Prevention of illness	32	17.90%
	Treatment of illness	113	63.10%
	Promotion of health	34	19.00%
Ways to obtained herbal medicine			
	prescribed by an herbal practitioner	25	15.40%
	Prescribed by an orthodox health care professional	23	14.20%
	Prescribe by a relative	60	37.00%
	Over the counter herbal remedies	54	33.30%
How many times have you used herbal medicine in the last 3 months			
	Very frequently	24	15.40%
	Frequently	12	7.70%
	about 2 to 3 times	30	19.20%
	Only once	36	23.10%
	Rarely/Never	54	34.60%
How many times have you used orthodox medicine in the last 3 months			
	Very frequently	33	12.80%
	Frequently	96	37.40%
	about 2 to 3 times	53	20.60%
	Only once	32	12.50%
	Rarely/Never	43	16.70%

Field survey, 2020

For most of the respondents (64.4%) usually seek health care from orthodox medicines, 16.7% seek health care from spiritual or faith healers and 14.1% seek health care from herbal medicine with only 4.8% seeking health care from traditional birth attendance (TBA) (see figure 4.3).



TBA- traditional birth attendant

Figure 4.3; which medical care do you usually seek
Source: field survey, 2020

Majority of the study participants (75.2%) have ever used herbal medicine (thus have used medicine in the form of plant seeds, berries, roots, roots, leaves, bark or flower for medicinal purpose) with only 24.8% saying they have never used herbal medicine (figure 4.4).

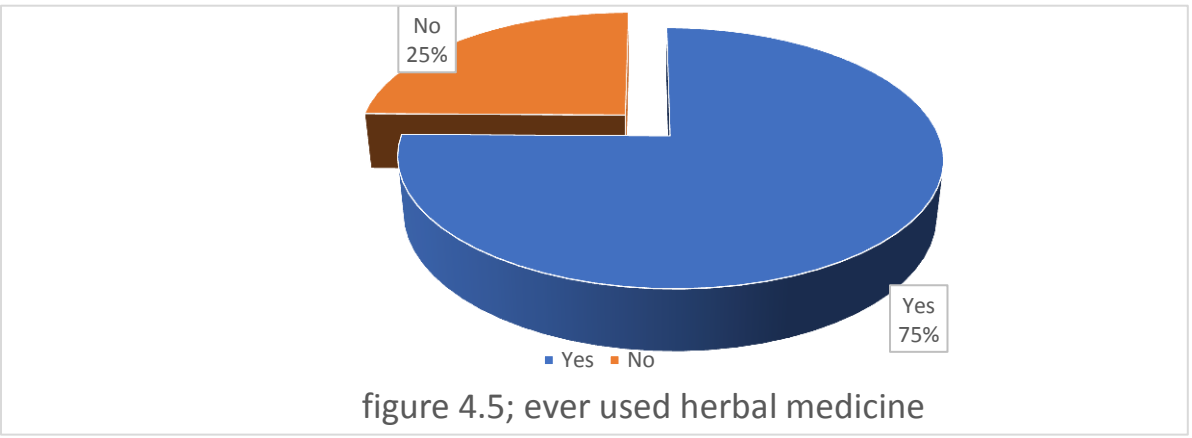


Figure 4.4; ever used herbal medicine
Field survey, 2020

Despite the above, only 32.6% of the study participants are still using herbal medicine till this moment, 67.4% does not use herbal medicine currently (figure 4.5).

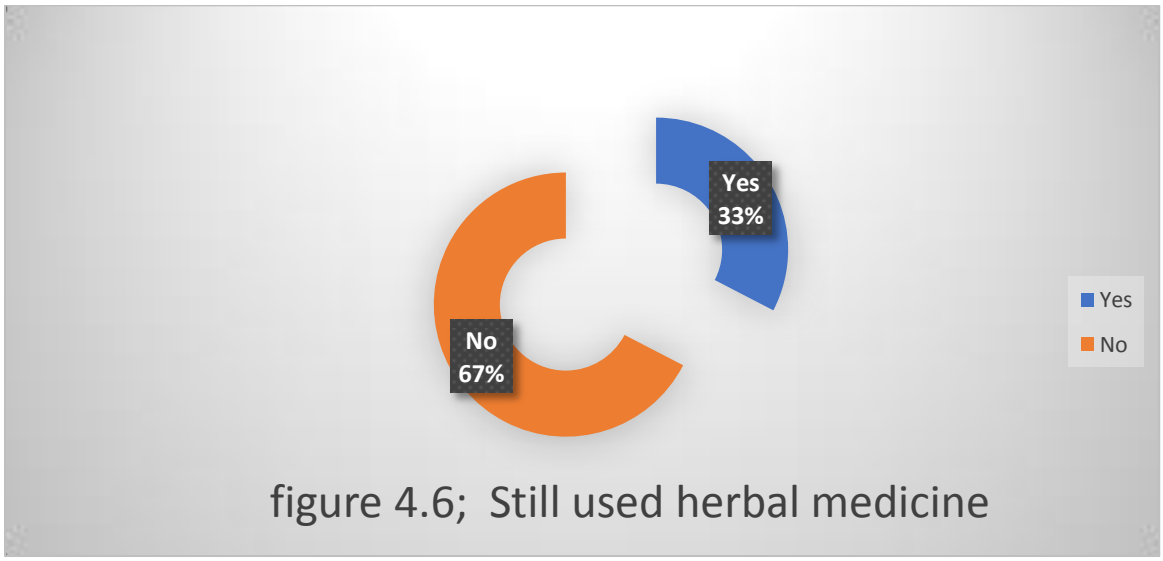


Figure 4.5; still uses herbal medicine

Field survey, 2020

Reasons ascribe to the usage according to the study are; closeness to me/accessibility (23.4%), 35.9% cited affordability as a reason for using herbal medicine, for 35.9% of the respondents, they used herbal medicine because the felt herbal medicine was more efficacious and about 13.3% said they used herbal medicine because they felt herbal medicine was in line with their religion (figure 4.6).

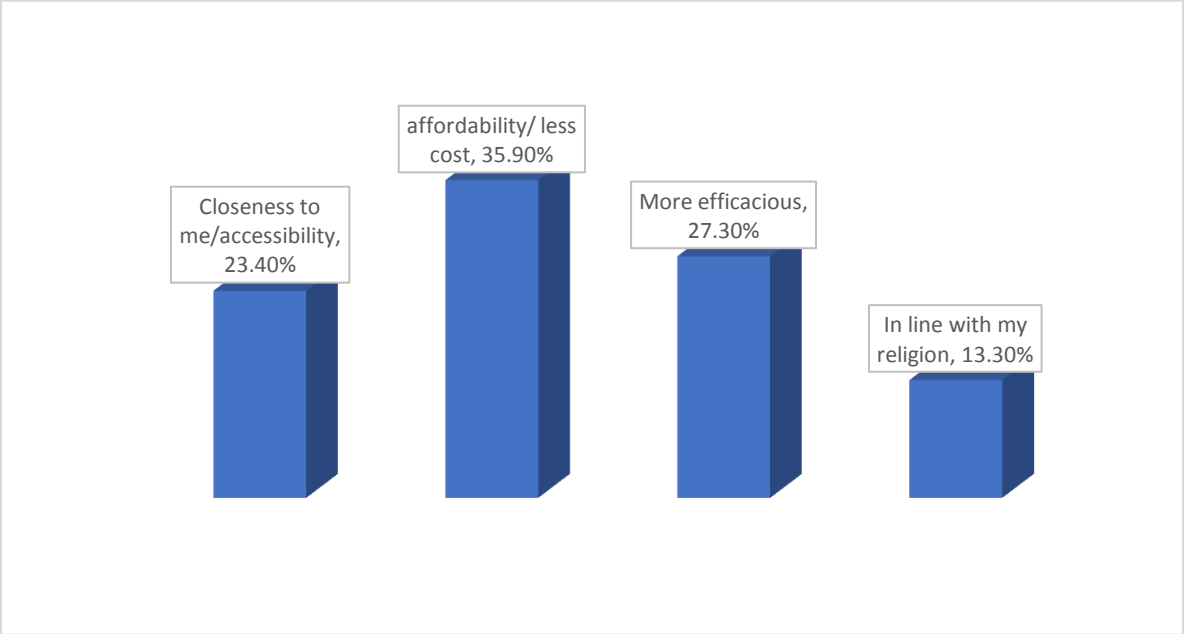


Figure 4.6; reasons for using herbal medicine

Field survey, 2020

Most of the respondents (39.4%) used herbal medicine once in a while, 34.2% of the respondents used herbal medicine sometimes, 20.6% rarely or never used herbal medicine and 5.8% said they used herbal medicine anytime they get sick (figure 4.7).

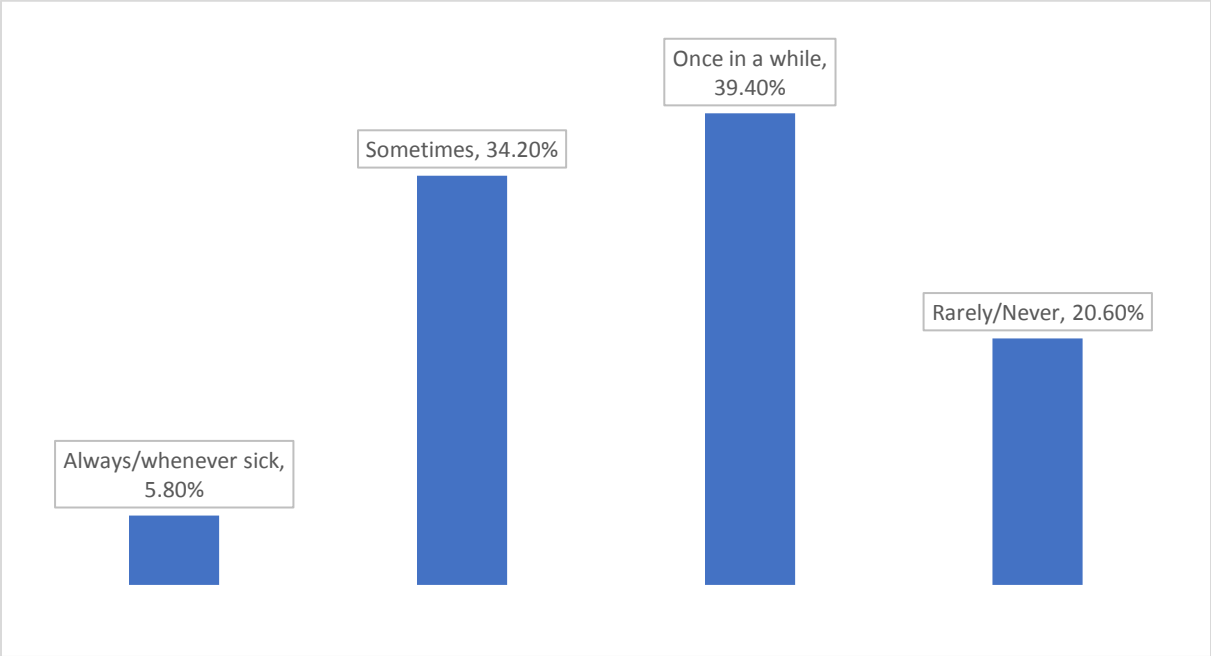


Figure 4.7; how often you use herbal medicine

4.4.1 Association between socio-demographics and usage of herbal medicine

Within the age brackets, majority (74.6%, 75.5%, 50.0% and 77.8%) of the study participants within the ages 21 to 30 years, 31 to 40 years, 41 to 50 years and 51 years and above respectively have ever used herbal medicine compared to 25.4%, 24.5%, 50.0% and 22.2% of the study participants within the ages 21 to 30 years, 31 to 40 years, 41 to 50 years and 51 years and above respectively have never used herbal medicine. The study revealed a significant statistical association between age and usage of herbal medicine (X2=12.64, P=0.048)

Majority (80.8% and 74.6%) of the respondents in urban and rural respectively have ever used herbal medicine as compared to 19.2% and 25.4% of the respondents who resided in the urban and rural respectively have never taken or used herbal medicine. The study

further revealed a significant association between place of residence and ever used herbal medicine (X2=43.17, P=0.002).

On the average monthly income, majority (65.2%, 78.4%, 77.2%, 64.3% and 80.0%) of the respondents who earned less than two hundred (200) Ghana cedis, between two hundred (200) and four hundred and ninety-nine (499) Ghana cedis, five hundred (500) to seven hundred and ninety-nine (799) Ghana cedis, eight hundred (800) to a thousand (1000) Ghana cedis and those who earned above a thousand Ghana cedis (1,00) have ever used herbal medicine as compared to 34.8%, 21.7%, 22.8%, 35.7% and 20.0% of the respondents who earned less than two hundred (200) Ghana cedis, between two hundred (200) and four hundred and ninety-nine (499) Ghana cedis, five hundred (500) to seven hundred and ninety-nine (799) Ghana cedis, eight hundred (800) to a thousand (1000) Ghana cedis and those who earned above a thousand Ghana cedis (1,00) have never used herbal medicine. The study revealed a significant association between average monthly income and usage of traditional medicine (X2=12.91, P=0.037).

On the educational status, majority (66.7%, 78.6%, 79.3%, 75.0%, 71.0% and all 100.00%) of the study participants who had no form of education, primary education, Junior High School (JHS), senior high school (SHS), tertiary education and non-formal education respectively have ever taken or used herbal medicine before comparing to 33.3%, 21.4%, 20.7%, 25.0%, 29.0% of the study participants who had no form of education, primary education, Junior High School (JHS), senior high school (SHS), and tertiary education respectively have never taken herbal medicine in their life. There was a significant association between educational status and usage of herbal medicine (X2=31.76, P= 0.011).

On occupation, majority (75.0%, 77.4%, 69.0%, 80.0%, 78.9% and 78.9%) of the participants who are farmers, small trade business, formal sector, housewife, students and other forms of job respectively have used herbal medicine before compare to 25.0%, 22.6%, 31.0%, 20.0%, 21.1% and 21.1% of the participants who are farmers, small trade business, formal sector, housewife, students and other forms of job respectively have never used herbal medicine. The study revealed a significant association between occupation and usage of herbal medicine (X2=8.38, P= 0.049).

On the ethicality, majority (74.6%, 56.5%, 93.3%, 83.3% and 85.7%) of the respondents who belong to the ethnic group Mamprusi, Kassena, Frafra, Kantoosi and other (other minor tribes such as Dagomba, Gonja, Chokosis etc.) respectively have used herbal medicine before as compare to 25.4%, 22.6%, 31.0%, 20.0%, 21.1% and 21.1% of the respondents who belong to the ethnic group Mamprusi, Kassena, Frafra, Kantoosi and other (other minor tribes such as Dagomba, Gonja, Chokosis etc.) respectively who have never used herbal medicine. The study further revealed a significant association between ethnicity and usage of herbal medicine (X2=10.03, P=0.049).

The study could not reveal any significant statistical association between usage of herbal medicine and religion (X2=1.53, P=0.47), the number of children (X2=1.71, P=0.64), marital status (X2=0.735, P=0.87) and sex (X2=0.735, P=0.71) (See table 4.6 for details).

Table 4.6; Association between socio-demographics and usage of herbal medicine

Variables	Categories	Ever used herbal medicine	
		Yes	No
Age	21 to 30 years	47(74.6%)	16(25.4%)
	31 to 40 years	148(75.5%)	48(24.5%)
	41 to 50 years	1(50.0%)	1(50.0%)
	51 years and above	7(77.8%)	2(22.2%)
Sex	Male	157(75.1%)	52(24.9%)
	Female	46(75.4%)	15(24.6%)
Marital Status	Single	47(74.6%)	16(25.4%)
	Married	148(75.5%)	48(24.5%)
	Divorced/widowed	8(72.7%)	3(27.3%)
Number of children			
	no child	37(69.8%)	16(30.2%)
	1 to 3 children	106(74.6%)	36(25.4%)
	4 to 6 children	45(80.4%)	11(19.6%)
	greater than 6	14(77.8%)	4(22.2%)
Place of residence	Urban	21(80.8%)	5(19.2%)
	Rural	182(74.6%)	62(25.4%)
Average monthly income			
	Less than 200	30(65.2%)	16(34.8%)
	200 to 499	94(78.4%)	26(21.7%)

	500 to 799	61(77.2%)	18(22.8%)
	800-1000	9(64.3%)	5(35.7%)
	greater than 1,000	8(80.0%)	2(20.0%)
Religion	African Tradition Religion (ATR)	20(71.4%)	8(28.6%)
	Christianity	37(82.2%)	8(17.8%)
	Islam	146(74.1%)	51(25.9%)
Highest level of education			
	No formal education	18(66.7%)	9(33.3%)
	Primary education	33(78.6%)	9(21.4%)
	JHS	23(79.3%)	6(20.7%)
	SHS	102(75.0%)	34(25.0%)
	Tertiary education	22(71.0%)	9(29.0%)
	Non formal education	5(100.00%)	0(0.0%)
Occupation	Farming	102(75.0%)	34(25.0%)
	Small trade business	41(77.4%)	12(22.6%)
	formal Sector occupation	29(69.0%)	13(31.0%)
	Housewife	8(80.0%)	2(20.0%)
	Students	15(78.9%)	4(21.1%)
	Others	15(78.9%)	4(21.1%)
Ethnicity	Mamprusi	153(74.6%)	52(25.4%)

	Kassena	13(56.5%)	10(43.5%)
	Frafra	14(93.3%)	1(6.7%)
	Kantoosi	5(83.3%)	1(16.7%)
	Others	18(85.7%)	3(14.3%)

Field survey, 2020

4.5 Challenges of traditional medicine in health care delivery

Majority of the participants (70.4%) recognized some challenges associated with the usage of herbal medicine whilst 29.6% stated they have never had any challenge with regards to using herbal medicine (see figure 4.8).

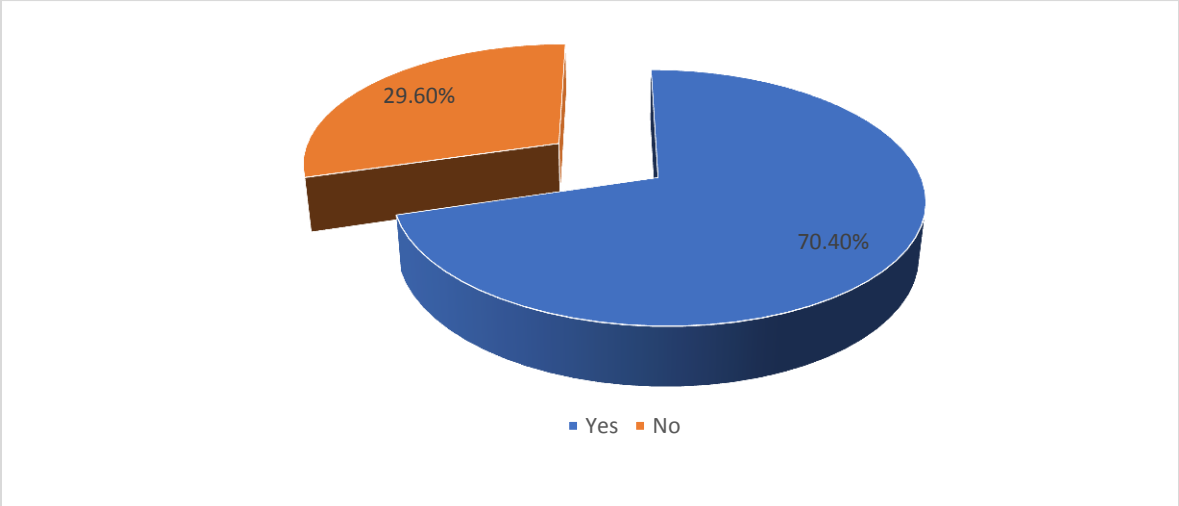


Figure 4.8; challenges in using traditional medicine

Field survey, 2020

Majority of the study participant (65.6%) have never experience the side effect of using any herbal medications whilst 34.4% experienced side effects with the use of traditional medicines.

On the challenges these participants faced in using herbal medications majority (64.1%) of the study participants were of the view that the preparatory process of herbal medications was not hygienically processed, followed by 63.0% of the respondents who opined that most herbal medications are prepared without any test, 55.6% stated that the inability to standardize the dosage of herbal medication posed a challenge for them, 44.4% of the study participants were of the view that most of the herbal practitioner have no form of education which to them posed a huge challenge, 40.4% of the study participants opined that; some of the herbal practitioners do not get proper training before they start to practice, 44.1% stated subjective diagnosing process as a huge challenge to the patronage of herbal medicine and 40.0% of the study participants were of the view that some of the herbal practitioners is not licensed to practice.

The interviews conducted revealed some challenges that the traditional medical practitioner faced in the conduct of their activities. These challenges were further categorized into three (3) themes. They include the following; (1) declining interest of the public, (2) dosage of herbal drugs, and (3) registering a business.

(1) the declining interest of the public

> *"…errrhm recently the patronage of our services has been very low. Even those who come here just want money oooh. …"* (A 57-year-old traditional medical practitioner)

> *"…the community people do not come often like they use to do; I am not even sure what is the cause. I feel is because of the eruption of these clinics and drug stores…"* (A 53-year-old traditional medical practitioner)

"...errrhrn oooh, please it been a long time I have gone there to seek their services. They have been a clinic here and so we go there when we fall sick..." (A 47-year-old woman, FGD)

(2) dosage of herbal drugs

"...we hear people say that, our drugs do not have dosage like the orthodox medicine. So, they have begun to have some doubts in our powers. So, they still come here but mostly they do not patronize the herbs, they complain they are not comfortable with the herbs..." (A 61-year-old man traditional medical practitioner)

*"...I was using the herbs, but one time I took some for my eyes and I had to run Aaaaahhh. So, I had to go the hospital and I was told is because of the herb. I have since not taken any herbs because of the inaccurate or no dosages..." (*A 41-year-old woman, FGD)

(3) Registering business

"...hmmm, they say we have to register our business to practice but it's a difficult process. These are what our fathers passed on to us, I do not understand why they prevent us from practising our culture. We are even better, those in the cities are even intimidated by arresting them, those in the cities cannot even do advertisement for people to know about the services..." (A 45-year-old traditional medical practitioner)

"... some of us here know of a man who was arrested at Walewale some years ago by the police on account that, the man was not having proper licensed to operate. That incident has truly kept a lot of fear in most of us and I am sure some of the practitioners here would not want to even practice..." (A 48-year-old woman, FGD)

Of those who have ever patronage the services of an herbal practitioner, Majority (72.1%) of the participants were satisfied with the treatment whilst 27.9% of the respondents stated they were dissatisfied with the treatment of herbal practitioners.

Majority of the study subjects (63.7%) could not tell whether or not the traditional medical practitioners (TMP) had a license, 22.2% were sure that traditional medical practitioners (TMP) had no license and 14.1% agree that traditional medical practitioners (TMP) had the license.

The study subject was asked to mention ways they wish to see traditional medicine improved, 45.9% of the subject believed that attaching traditional medical practitioners (TMP) to the orthodox medical facility could improve the services, 52.2% were for the integration of traditional and orthodox medicine to provide quality health services as a way of improving the services of the herbal medicine, 50.7% were of the view that supporting traditional medical practitioners (TMP) with resources to aid their services delivery could also help improve the services of the herbal medicines, for 57.4% of the study subjects believe herbal medicine could be improved if the dosage could be standardized, 55.6% believed improving diagnosing process could help with the overall improvement in herbal medicine and 51.1% believe giving the training to improve the capacity traditional medical practitioners (TMP) to deliver quality service.

In the same vein, a solution was proffer to improve tradition medicine (TM), 14.1% believed registering traditional medical practitioners (TMP) is a solution to challenges of traditional medicine, 63.0% mention scientific research into the safety and efficacy of herbal medicine (HM), 54.4% stated that sustainable utilization of medicinal plants, 52.20% also stated providing a license for traditional medical practitioners (TMP) and 62.6% believed that clinical testing of herbal medicine before use could be a solution to the challenges faced by herbal medicines.

Majority of the participants (62.1%) support the training of traditional medical practitioners (TMP) to improve their practice, whilst 37.9% did not support the aforementioned.

On the type of training to be meted out for traditional medical practitioners, 49.6% propose classroom educational training, 58.5% propose practical training by experienced herbalist, 26.3% propose university level training/education and 38.5% propose training abroad (see table 4.7 for details)

Table 4.7; Challenges of traditional medicine in health care delivery

Variables	Categories	Frequency	Percentage
Experience side effects in the use of Traditional medicine			
	Yes	93	34.40%
	No	177	65.60%
Recognized any challenges in using Traditional medicine			
	Yes	190	70.40%
	No	80	29.60%
Challenges in the patronage of traditional medicine			
	No standardization of dosage of a drug	150	55.60%
	Herbs prepared without test	170	63.00%
	Subjective diagnosing process	119	44.10%
	Some are not licensed	108	40.00%
	many are not educated	120	44.40%
	Not properly trained	109	40.40%
	The preparatory process is not hygienically processed	173	64.10%
Are you satisfied with the treatment			
	Yes	142	72.10%
	No	55	27.90%

Are the traditional medicine practitioners registered		
Yes	38	14.10%
No	60	22.20%
Don't know	172	63.70%
What improvement would you wish to see in traditional medicine		
Attach TMP to an orthodox medical facility	124	45.90%
Integrated traditional and orthodox medicine to provide quality health services	141	52.20%
Support TMP with resources to aid their services delivery	137	50.70%
Standardize the dosage	155	57.40%
Improve the diagnosing process	150	55.60%
Give the training to improve the capacity of TMP to deliver quality service	138	51.10%
The solution recommended for improvement of TM		
TMP should be registered	38	14.10%
Scientific research into the safety and efficacy of HM	170	63.00%
Sustainable utilization of medicinal plants	147	54.40%
provision of a license to TMP	141	52.20%
Clinical testing of herbal medicine before use		
Do you support the training of TMP to improve their practice		
Yes	157	62.10%

No	96	37.90%
What type of training do you support		
Classroom educational training	134	49.60%
Practical training by an experienced herbalist	158	58.50%
University-level training/education	71	26.30%
Training abroad	104	38.50%

Field survey, 2020

4.5.1 Association between socio-demographics and the challenges in patronizing herbal medicine.

Within age brackets, majority (68.3%, 71.9%, and 100.0%) of the study participants within the ages 21 to 30 years, 31 to 40 years, and 41 to 50 years respectively have faced a challenge in using herbal medicine as compared to 31.7%, 28.1% and 0.0% of the study participants within the ages 21 to 30 years, 31 to 40 years and 41 to 50 years respectively have never had a challenge in patronizing traditional medicine. On the contrary, majority (55.6%) of those who are 51 years and above have never experienced any challenge in using herbal medicine as compared to 44.4% of the same group who have experienced challenges in patronising traditional medicine. The study revealed a significant statistical association between age and challenges of patronizing herbal medicine (X2=24.11, P=0,025).

On the number of children, majority (66.0%, 74.6%, 60.7%, 60.7% and 83.3%) of the study participants who had no child, between one (1) to three (3) children, between four

(4) to six (6) children and those who had more than six (6) children respectively have had challenges in patronizing herbal treatment compared to 34.0%, 25.4%, 39.3%, 39.3% and 16.7% of the study participants who had no child, between one (1) to three (3) children, between four (4) to six (6) children and those who had more than six (6) children respectively who have never experienced any challenges in patronizing herbal treatment. The study revealed a significant statistical association between the number of children and the challenges in patronising traditional medicine (X2=10.06, P=0.047).

Majority (76.9% and 69.7%) of the respondents who reside in urban and rural areas respectively have ever experienced a challenge in an attempt to seek herbal treatment compared with 23.1% and 30.3% of the respondents in urban and rural respectively who have never witnessed any challenges in patronizing herbal treatment. The study established a significant association between place of residence and challenges in the used of herbal treatment (X2=9.74, P=0.036).

Majority (64.3%, 86.7% and 67.5%) of the study subject who belongs to the African Traditional Religion (ATR), Christianity and Islam have encountered a challenge in patronizing the herbal medicine as compared with 35.7%, 13.3% and 32.5% of the study subject who belongs to the African Traditional Religion (ATR), Christianity and Islam stated that they have never encountered any form of challenge in securing herbal medicine. The study further revealed a significant association between religion and the challenges of using herbal medicine (X2=7.00, P=0.03).

On the educational, majority (66.7%, 57.1%, 55.2%, 79.4%, and 71.0%) of the participants who are farmers, small trade business, formal sector, housewife, and students

have ever had some challenges in using herbal medicine as compared to 33.3%, 42.9%, 44.8%, 20.6% and 29.0% of the participants who are farmers, small trade business, formal sector, housewife, students have never been challenged in an attempt to use herbal medicine. Contrary, among those who had non-formal education, majority (60.0%) of them have never had any challenge in using herbal medicine whiles 40.0% have had some challenges in using herbal medicine. The study further revealed a significant association between the level of education and the challenges in using traditional medicines (X2=14.46, P=0.013).

Majority (78.7%, 67.9%, 57.1%, 70.0%, 60.0% and 52.6%) of the participants who are farmers, small trade business, formal sector, housewife, students and other forms of job respectively have encountered a challenge in seeking herbal treatment compare to 21.3%, 32.1%, 42.9%, 30.0%, 40.0% and 47.4% of the participants who are farmers, small trade business, formal sector, housewife, students and other forms of job respectively have bever encountered any challenge in seeking herbal treatment. The established significant association between occupation and challenges of occurring herbal medicine (X2=11.56, P= 0.041).

However, the study could not establish any significant between challenges in patronizing the herbal medicine and sex (X2=0.001, P= 0.98), marital status (X2=4.11, P=0.25), average monthly income (X2=5.79, P=0.215) and ethnicity (X2=6.98, P=0.137) (Table 4.8).

Table 4.8; Association between socio-demographics and the challenges in patronizing herbal medicine.

Variables	Categories	Challenge in patronizing TM		Statistical test
		Yes	No	
Age	21 to 30 years	43(68.3%)	20(31.7%)	X2=24.11
	31 to 40 years	141(71.9%)	55(28.1%)	P=0.025
	41 to 50 years	2(100.0%)	0(0.0%)	
	51 years and above	4(44.4%)	5(55.6%)	
Sex	Male	147(70.3%)	62(29.7%)	X2=0.001
	Female	43(70.5%)	18(29.5%)	P=0.98
Marital Status	Single	43(68.3%)	20(31.7%)	X2=4.11
	Married	141(71.9%)	55(28.1%)	P=0.25
	Divorced/widowed	6(54.5%)	5(45.5%)	
Number of children		35(66.0%)	18(34.0%)	X2=10.06
	no child	106(74.6%)	36(25.4%)	P=0.047
	1 to 3 children	34(60.7%)	22(39.3%)	

	4 to 6 children	34(60.7%)	22(39.3%)	
	greater than 6	15(83.3%)	3(16.7%)	
Place of residence	Urban	20(76.9%)	6(23.1%)	X2=9.74
	Rural	170(69.7%)	74(30.3%)	P=0.036
Average monthly income				
	Less than 200	27(58.7%)	19(41.3%)	X2=5.79
	200 to 499	90(75.0%)	30(25.0%)	P=0.215
	500 to 799	58(73.4%)	21(26.6%)	
	800-1000	8(57.1%)	6(42.9%)	
	greater than 1,000	7(70.0%)	3(30.0%)	
Religion	ATR	18(64.3%)	10(35.7%)	X2=7.00
	Christianity	39(86.7%)	6(13.3%)	P=0.03
	Islam	133(67.5%)	64(32.5%)	
Highest level of education				
	No formal education	18(66.7%)	9(33.3%)	X2=14.46
	Primary education	24(57.1%)	18(42.9%)	P=0.013

	JHS	16(55.2%)	13(44.8%)	
	SHS	108(79.4%)	28(20.6%)	
	Tertiary education	22(71.0%)	9(29.0%)	
	Non formal education	2(40.0%)	3(60.0%)	
Occupation	Farming	107(78.7%)	29(21.3%)	X2=11.56
	Small trade business	36(67.9%)	17(32.1%)	P=0.041
	formal Sector occupation	24(57.1%)	18(42.9%)	
	Housewife	7(70.0%)	3(30.0%)	
	Students	6(60.0%)	4(40.0%)	
	Others	10(52.6%)	9(47.4%)	
Ethnicity	Mamprusi	138(67.3%)	67(32.7%)	X2=6.98
	Kassena	19(82.6%)	4(17.4%)	P=0.137
	Frafra	14(93.3%)	1(6.7%)	
	Kantoosi	5(83.3%)	1(16.7%)	
	Others	14(66.7%)	7(33.3%)	

Field survey, 2020

CHAPTER FIVE

DISCUSSION

5.0 Introduction

Traditional medicine and hence, herbal medicine have been used alongside modern medicine for decades. Despite the increasing use of orthodox medicine in Ghana, many continue to rely on herbal medicine for their healthcare needs. This study was conducted to investigate the contributions and challenges of traditional medicine in the health care delivery system in Ghana taken the West Mamprusi Municipality as a case study.

These discussions have been presented according to the objectives of the study. Major findings were discussed, comparisons made with other studies and insights presented on some of the findings.

5.1 Contributions of traditional medicine in the health care delivery

Some participants in this study believed the contribution of herbal medicine to the health care system is immense. Traditional medicine was noted to be beneficial in the treatment of ailments with many participants reporting they have been able to experience relief after treating with herbal medicines and were able to return to and carried out their work effectively. On the contribution of herbal medicine to the health care system, participants mentioned the accessibility and availability of herbal medicine as a plus to Ghana's health system. Some were of the assertion that herbal medicine has contributed greatly to reducing deaths that are associated with bad roads leading to the health centres. Further, compared to orthodox medicine, herbal medicine allows clients to spend very less on health expenditure. The health care systems in Ghana has seen many calls to enhance efforts in researching traditional health system as a channel to bridging the gap between

health care demand and supply (MOH, 2017; WHO, 2011). Traditional medicine has been referred to as complementary alternative medicine (CAM) (Shaikh and Hatcher, 2005). Complementary in the sense that it exists outside modern health care and serves to provide health care services. In Ghana, traditional medicine is used side by side with orthodox medicine but has not been fully incorporated into a modern health care system. There have been numerous calls for the integration of traditional medical practices into modern health care services (Adjei, 2013). Indeed, the integration between modern and traditional medicine presents a conduit to bridging the gap of poor healthcare availability in developing countries. Traditional medicine solves the problem of affordability and availability while modern medicine provides evidence-based practice and speciality diseases herbal medicine cannot treat. This suggests the need to understand the understanding of the strengths and weaknesses of each and encourage the provision of the best therapeutic option for patients.

5.2 Perception of the effectiveness of traditional medicine

Traditional medicine forms part of the culture and many have put its longevity and persistence on its availability, effectiveness and cultural acceptability (Twumasi, 2005). The continual patronage of herbal medicine banks on it being effective in the treatment of illnesses. In this study, most of the respondents believed herbal medicine was effective in the treatment of diseases. This finding has been reported in many other studies including Adjei, (2013) and Gyasi (2014) in Ghana and Clement et al., (2007) in Trinidad. The sustained use and increasing popularity of herbs are based on the belief that they are efficacious (Clement et al., 2007). Compared to orthodox medicine, majority of the participants believed herbal medicine was not as effective. This assertion differed from a

study conducted in the Wassa Amenfi District, Ghana where vice versa was true (Adjei, 2013). In the qualitative data, however, most of the herbal practitioners asserted that herbal medicine was more effective. The practitioners of course believed in their trade and would not have said otherwise. However, the users of both types of medicines were in the right position to make such judgement.

Some of the conditions typically treated with traditional medicines were mentioned to include bone fractures, stroke or hypertension, malaria or fever or typhoid, chronic skin infection, epilepsy or mental disorders, infertility or sexual dysfunction and sexually transmitted diseases in that order. With traditional medicine practice, just like with orthodox practice, there are specialities in both systems. There are traditional bone-setters whose primary expertise lay in the treatment of bone fractures and other practitioners specialize in treating stroke. Others treat a variety of ailments. People go for these specialist practitioners where they believe orthodox medicine is not effective. This could explain why bone fracture and stroke were selected by majority of respondents in this study as the conditions mostly treated by traditional healers.

Regarding the side effects of traditional medicines, as high as 29.6% had experienced adverse effects. This percentage was high compared to the 8.8% prevalence of adverse effects reported in another study (Adjei, 2013). Side effects mentioned during in-depth interviews included excessive diarrhoea, odour, headaches. Unlike, orthodox medicines where standardization exists, most herbal medicines are unregulated and prescriptions do not go with standard dosage, route and expected side effects. Additionally, adulteration, inappropriate formulation, or lack of understanding of plant and drug interactions exists (Lucas, 2010). A herbal practitioner commented that "some of the herbal drugs are not

supposed to be ingested touched by the mouth, if by mistake it touches your mouth, it has a dire effect." In some cases, users were made to prepare herbs at home. These situations may lead to adverse reactions that are sometimes life-threatening or lethal. This suggests the need to place better regulations on herbal medicine practices where practitioners are made to standardize doses and present expected side effects on patients. Despite the high percentage of adverse effects recorded in this study, majority of participants disagreed that herbal medicine was dangerous. This finding was consistent with the finding of Adjei (2013) where majority of participants rated herbal medicine as safe. Herbal medications are naturally occurring with minimal or no industrial processing and hence are mostly perceived to be safe (Tilburt & Kaptchuk, 2008). Also, most of the herbs used have been passed down generationally and there is an argument that if herbal medicine were unsafe then our great grandfathers who had no other form of medicine would not have stayed stronger and longer on earth than us.

5.3 Use of traditional medicine

Before assessing the usage of traditional medicine, the respondents were quizzed on their health status. It emerged that majority of the respondents had an ailment over that past year that demanded seeking treatment. The health-seeking behaviour and pattern of use of the available medicines therefore needed to be understood. In this study, majority of the participants usually sought medical care from orthodox medicine when sick. This finding was consistent with another study conducted in Ghana (Ameade et al., 2018). This was further evidenced by the results that showed that unlike orthodox medications, the usage of herbal medication was not a regular feature among the study participants. The patronage of herbal medicine was low unlike other studies conducted in Ghana

where patronage of herbal medicine was reported to be high (Adjei, 2013; Gyasi, 2014). This current study was conducted in an urban setting where there is more exposure to orthodox medicine (WHO, 2002). There exist many health centres with numerous over-the-counter drug stores. This could influence the health-seeking behaviour of the respondents. Further results showed that some of the respondents used herbal medicine as complementary to orthodox medicine. This practice may have dire consequences on the health of the user. Herbal medicines may interact with prescription medications and over-the-counter drugs (Adjei, 2013; Gyasi, 2014). This calls for an improved, effective and more open communication between health care providers and patients. Health care professionals must fully be informed about the use of herbal medications during history taking at the health facilities. Patients must be educated to avoid using both forms of medicines concurrently. Most herbal medicines are under-researched and drug interactions may be unknown to not just herbal practitioners but also orthodox prescribers. Open communication and adequate education could serve to avoid adverse effects and negative interactions between traditional and orthodox medicine used.

The common sources of herbal medicine for participants in this study were from relatives. This finding correlated with another study conducted in Ghana (Adjei, 2013). Other sources included over the counter herbal remedies, herbal practitioners and health professionals. Herbal medicines have mostly been obtained from various sources including relatives, hospitals or clinics, herbal practitioners, farm or backyard, and pharmacy or drug stores. Herbal medicines from relatives possibly may be from the other sources mentioned. Herbs from farms and backyards are usually well-known medicinal plants in the community that people cut for the treatment of their ailments. Other sources

such as herbal practitioner clinic, hospitals, pharmacies and drugstores typically are well established and sell already-prepared herbal drugs in bottles and packs. These outlets present the best possible points for regulation. It is recommended that regulators target these establishments to monitor and check herbal medications to ensure they meet the required standards.

The main constituent of herbal medicine includes active parts of plants – leaves, flowers, stems, roots, seeds, and berries (Woolf, 2003). Herbal medicine usually come in a variety of forms such as pills or powders, dissolved into tinctures or syrups, or brewed in teas and concoctions or boiled for vapour inhalation. In this study, the participants reported having used plant seeds, berries, roots, roots, leaves, bark or flower for medicinal purpose. In some instances, animal parts are added to make the medicine palatable and nutrient-dense.

Even though patronage of herbal medicine was found to be low in this study, some participants ascribed reasons for their usage of these medicines. Affordability, accessibility, efficacy and religion were the main reasons attributed to the usage. Similar reasons were presented in other studies (Adjei, 2013; Gyasi, 2014). Availability and affordability have been reported as the most common reasons for the widespread use of traditional medicine in Africa (Twumasi, 2005; Darko, 2009; WHO, 2014). The WHO estimates that the ratio of traditional healers to a population in Africa is 1:500 whereas the ratio of medical doctors to population is 1:40 000 (WHO, 2014). In some settings especially rural communities, traditional medicines may be the only available health care system that is affordable to the poor (Darko, 2009). The affordability of traditional medicine stems from the fact that herbal practitioners are more willing to engage in

negotiations, accepts delayed payments and in some cases accepts payment in kinds such as fowls, goats, sugar, palm wine and salt (Okigbo & Mmeka, 2006; Darko, 2009).

5.3.1 Association between socio-demographics and usage of traditional medicine

Inferential analyses revealed statistically significant associations between age and usage of herbal medicine. This association was also true in a study conducted in the Wassa Amenfi West District (Adjei, 2013). It could be observed from the data in this current study that the highest percentage of participants that used traditional medicines were 51 years and above. This category of people can be said to have been born and raised in an era where orthodox medicine was still finding its feet in Ghana. Most of these old folks would have been used to the usage of herbal medications in the treatment of ailments. Also, the study further revealed a significant association between place of residence and usage of herbal medicine. This was also consistent with the finding of Adjei, (2013). In Ghanaian society, especially in rural areas, herbal medicine is more culturally acceptable than orthodox medicine (Davies, 1994; Mensah 2008). Herbal medicine is often used in rural areas than urban areas (Buor, 1993). This may be due to the unavailability and relatively expensive nature of orthodox medicines (Brown, 1992).

On the educational status, there was a significant association between educational status and usage of herbal medicine. This result corroborated the finding of Adjei (2013). Buor (1993), commented that people with little or no formal education patronise traditional herbal medicine more than those with higher education. However, as seen in this study, some highly educated people patronized traditional medicine. This result does not deviate much from the results of other studies in Ghana (GSS, 2012; Adjei, 2013). Regarding average monthly income, the study revealed a significant association between average

monthly income and usage of traditional medicine. It could be observed from the data that, participants of a lower level of income were more likely to use traditional medicine. In a study conducted in Kumasi Metropolis, results showed that traditional medicine users were more likely to have a lower level of income (Gyasi, 2014). This all boils down to the affordability of herbal medications. The study further revealed a significant association between occupation and usage of herbal medicine. Majority of participants were farmers, small traders and housewives. These people typically have lower incomes and this could explain the associations.

5.4 Challenges of traditional medicine in health care delivery

There are many challenges associated with the usage of herbal medicine. Most of the participants recognized side effects as a challenge. The side effects of herbal medicine are usually not documented and users are not aware of the possible side effects of herbal medicines used. These drugs where packaged have not gone through standardized trials and hence possible side effects are not known. Known side effects are usually people experiences with such medicines. This buttresses the need to regulate packaged herbal medication in the country. These herbal drugs must pass standardized trials before they are put on shelves. It must be noted that most herbal practitioners do not have pre-processed and package herbs for treatment. They search for herbs on-demand and often give out instructions for the preparation of the herbs at home. This practice forms part of another challenge recognized by participants in this study. Some of the other challenges recognized by participants included unhygienic preparation processes, untried medicines and the inability to standardize the dosage of herbal medication. These noted challenges speak to the poor regulation of herbal medicine practice in the country.

Most herbal practitioners are uneducated, not formally trained and hence not licensed to practice. Granted that older herbal practitioners are usually uneducated, they can still be organized into associations and educated on the hygienic preparation and packaging of drugs for testing. The Government of Ghana has set-up the Centre for Scientific Research into Plant Medicine (CSRPM) to conduct a test on herbal medications. It has become important that several research institutes be opened the various regions of the country to ensure proper testing is done on herbal drugs. Also, other universities in Ghana must emulate the Department of Herbal Medicine of the Kwame Nkrumah University of Science and Technology to enhance the education of herbal practitioners. This can form the bases of licensing. Few recognized private herbal health posts exist and these practitioners often have licenses. The majority of practitioners however who practice at home have no formal license. This assertion was evidenced by a result in this study where majority of the participants could not tell whether or not the traditional medical practitioners (TMP) had the license.

The practise of traditional medicine has more room for improvement. Participants in this study noted that to improve TMP, there is a need for the integration of traditional and orthodox medicine to provide quality health services. Some demand the support of traditional medical practitioners to aid their services delivery by enhancing dosage standardization and improving their diagnosis processes. As things stand, there is a wide divide between both systems of health care. Orthodox medical practice does not interfere with traditional practice and both do not refer patients to each other. Both systems of health care must be encouraged to complement each other and there must be an avenue for a dialogue between traditional and modern doctors that allows for cross-referrals

(Adjei, 2013). It must be noted that orthodox medicine practitioners have gone through years of education and training and are formally licensed. However, most TMPs have no formal education and this could be a major hurdle. Participants in this study commented on the need to give the training to improve the capacity of traditional medical practitioners (TMP) to deliver quality service. The opinion was split on the type of training to give to TMPs with practical training by experienced herbalist and classroom educational training high among the responses. Most traditional healers have a poor educational background, which makes it difficult for them to understand modern practices and explanations (Baidoo, 2009). Practical training may be the best way to go. These practitioners can be trained in packaging and labelling to ensure their products can be regulated. The faculty of herbal medicine at KNUST is the right step in classroom education training for literate people interested in herbal medicine and all Universities must be encouraged to follow suit. Fully trained practitioners from these institutions can then be registered and licensed. The Centre for Scientific Research into Plant Medicine (CSRPM) is the government-approved institution mandated to undertake research and development of plant medicine, assess and approve the efficacy and long-term safety, and clinical monitoring of herbal medicine products in Ghana (Darko, 2009; Abbiw et al, 2002). Studies have shown that have been documented as efficacious in Ghana but just a few have undergone preliminary phytochemical analysis and safety test at the Centre for Scientific Research into Plant Medicine (Darko, 2009). Participants in this study called for more scientific research into the safety and efficacy of herbal medicine (HM) and also clinical testing of herbal medicine before use could be a solution to the challenges faced by herbal medicines. There is a need to support the research institute with adequate funds

to conduct this research and testing. More such institutions must be set-up in other parts of the country to enforce the testing and approval of herbal medicines.

CHAPTER SIX

SUMMARY, CONCLUSION AND RECOMMENDATIONS

6.1 Summary and Conclusion

In this study, most of the respondents believed herbal medicine was effective in the treatment of diseases. However, compared to orthodox medicine, majority of the participants believed herbal medicine was not as effective. The main conditions noted to be typically treated with traditional medicines were bone fractures and stroke or hypertension. A high percentage of participants experienced side effects of herbal medicines and some of these were excessive diarrhoea, odour, headaches. The health-seeking behaviour of participants was mainly jeered towards orthodox medicine. The usage of herbal medication was not a regular feature among the study participants. Patronage of herbal medicine in this study was low. It was noted that some respondents use traditional medicine as complementary to orthodox medicine.

The common sources of traditional medicine for participants in this study were from relatives. Other sources included over the counter herbal remedies, herbal practitioners and health professionals. Affordability, accessibility and efficacy were the main reasons attributed to the usage of traditional medicine. Inferential analyses revealed statistically significant associations between age, place of residence, educational status, average monthly income, occupation and usage of herbal medicine. Challenges associated with the usage of herbal medicine included side effects, uneducated and untrained herbal practitioners and unlicensed or unregistered practitioners. Some participants in this study believed the contribution of herbal medicine to the health care system is immense.

Traditional medicine solves the problem of affordability and availability while modern medicine provides evidence-based practice and speciality diseases herbal medicine cannot treat. This suggests the need to understand the understanding of the strengths and weaknesses of each and encourage the provision of the best therapeutic option for patients.

6.2 Recommendations

i. The Government of Ghana must look to decentralize the Centre for Scientific Research into Plant Medicine (CSRPM) in all region of the country to ensure proper research and development of plant medicine and clinical monitoring of herbal medicine products in Ghana.

ii. The Government must also see the integration of traditional medicine with an orthodox practice in healthcare service delivery. Traditional medicine solves the problem of affordability and availability while modern medicine provides evidence-based practice and speciality diseases herbal medicine cannot treat.

iii. Centre for Scientific Research into Plant Medicine (CSRPM) and the Food and Drugs Authority (FDA) must see to the standardization of dosage, efficacy and safety of all herbal products before they hit the shelves.

iv. Universities in Ghana must emulate the Department of Herbal Medicine of the Kwame Nkrumah University of Science and Technology to enhance the education of herbal practitioners.

v. Stakeholders engaged in traditional medicine must look into the proper regulation and licensing of traditional medical practitioners in the country.

vi. All health professionals including those in herbal clinics should be interested in the drug history of their clients. Health care professionals must fully be informed about the use of herbal medications during history taking at the health facilities. Open communication and adequate education could serve to avoid adverse effects and negative interactions between traditional and orthodox medicine used.

vii. Herbal drugs outlets including pharmacies and drugstores must be monitored to ensure they sell only approved and registered herbal medicines.

viii. Both systems of health care must be encouraged to complement each other and there must be an avenue for a dialogue between traditional and modern doctors that allows for cross-referrals.

REFERENCES

Abbiw, D., Agbovie, T., Akuetteh, B., Amponsah, K., Dennis, F., Ekpeh, P., Gillet, H., Ofosuhene-Djan, W., and Owusu-Afriyie, G. (2002). Conservation and Sustainable Use of Medicinal Plants in Ghana: Conservation Report. (Accessed from http//www.unepwcmc.org/species/plants/ghana/pdfs/)

Abdullahi, A. A., (2011), Trends and Challenges of Traditional Medicine in Africa, Afr J Tradit Complement Altern Med. (2011) 8(S):115-123.

Adejumo, A., Faluyi, M. and Adejuwon, A. (2013). Role of Socio-Psychological Factors in Perceived Quality of Care Rendered by Traditional Medical Practitioners in Ibadan, Nigeria. Global Journal of Health Science; Vol. 5, No. 6. doi:10.5539/gjhs.v5n6p186

Adjei, B., (2013), Utilization of Traditional Herbal Medicine and Its Role in Health Care Delivery In Ghana: The Case Of Wassa Amenfi West District, Masters Dissertation, Kwame Nkrumah University of Science and Technology.

Adu-Gyamfi, S. A. M. U. E. L., & Bing, J. O. S. E. P. H. I. N. E. (2016). Traditional healing narratives from a community in Ghana: An empirical study. *Journal of Basic and Applied Research International*, *17*(2), 125-135.

Agyei-Baffour, P., Kudolo, A., Quansah, D. Y., & Boateng, D., (2017), Integrating herbal medicine into mainstream healthcare in Ghana: clients' acceptability, perceptions and disclosure of use, BMC Complementary and Alternative Medicine (2017) 17:513 DOI 10.1186/s12906-017-2025-4

Ahenkan, A., Opoku-Mensah Abrampa, F., & Boon, K. E. (2019). Integrating traditional and orthodox medical practices in health care delivery in developing countries: Lessons from Ghana. *Int. J. Herb. Med*, *7*, 23-30.

Ahmad, M., Khan, M. A., Rashid, U., Zafar, M., Arshad, M., & Sultana, S. (2009). Quality assurance of herbal drug valerian by chemotaxonomic markers. *African Journal of Biotechnology*, *8*(6).

Al-Azzawi, A. M., Mehdi, N., Al-Juboori, A. J., Ejaz, A., Ali, H., & Sarheed, O., (2019), Herbal Medicines Questionnaire and Evaluation Of Attitude, Perceptions And Self-Use Among Health Care Professionals In Rak, Uae: Pilot Study, International Journal of Pharmacy and Pharmaceutical Sciences, Vol 11, Issue 3, 2019

AlRawi, S. N., Khidir, A., Elnashar, M. S., Abdelrahim, H. A., Killawi, A. K., Hammoud, M. M., & Fetters, M. D. (2017). Traditional Arabic & Islamic medicine: validation and empirical assessment of a conceptual model in Qatar. *BMC complementary and alternative medicine*, *17*(1), 157.

Amangbey, E., (2014), A Comparative Study Of Modern And Traditional Health Services In The Bolgatanga Municipal Area, Masters Thesis, Kwame Nkrumah University of Science and Technology Kumasi,Ghana.

Ameade, E. P. K., Amalba, A., Helegbe, G. K., & Mohammed, B. S., (2015), Herbal medicine: a survey on the knowledge and attitude of medical students in Tamale, Ghana, Peak Journal of Medicinal Plant Research Vol. 3 (1), pp. 1-8,

Amoah, S. K., Sandjo, L. P., Bazzo, M. L., Leite, S. N., & Biavatti, M. W. (2014). Herbalists, traditional healers and pharmacists: a view of the tuberculosis in Ghana. *Revista Brasileira de Farmacognosia*, *24*(1), 89-95

Antwi, S. K., & Hamza, K. (2015). Qualitative and quantitative research paradigms in business research: A philosophical reflection. *European journal of business and management*, *7*(3), 217-225.

Appiah, B., Amponsah, I. K., Poudyal, A., & Mensah, M. L. K. (2018). Identifying strengths and weaknesses of the integration of biomedical and herbal medicine units in Ghana using the WHO Health Systems Framework: a qualitative study. *BMC complementary and alternative medicine*, *18*(1), 1-8.

Asamoah-Gyadu JK. Therapeutic strategies in African religion: Health, herbal medicinal and indigenous Christian spirituality. 2014;20(11):83

Asare, B. E., (2015), Developments made in herbal medicine practice in Ghana. Modern Ghana. 2015; Available from: https://www.modernghana.com/news/594410/ developments-made-in-herbal-medicine-practice-in-ghana.html

Asase, A., Akwetey, G. A., & Achel, D. G. (2010). Ethnopharmacological use of herbal remedies for the treatment of malaria in the Dangme West District of Ghana. *Journal of ethnopharmacology*, *129*(3), 367-376.

Aschwanden, C. (2001). Herbs for health, but how safe are they?. *Bulletin of the World Health Organization*, *79*, 691-692.

Axinn, W. G., & Pearce, L. D. (2006). *Mixed method data collection strategies*. Cambridge University Press.

Enioutina, E. Y., Salis, E. R., Job, K. M., Gubarev, M. I., Krepkova, L. V., & Sherwin, C. M. (2017). Herbal Medicines: challenges in the modern world. Part 5. status and current directions of complementary and alternative herbal medicine worldwide. *Expert review of clinical pharmacology*, *10*(3), 327-338.

Zhou, X., Li, C. G., Chang, D., & Bensoussan, A. (2019). Current status and major challenges to the safety and efficacy presented by Chinese herbal medicine. *Medicines*, *6*(1), 14.

Bhardwaj, S., Verma, R., & Gupta, J. (2018). Challenges and future prospects of herbal medicine. *International Research in Medical and Health Science*, *1*(1), 12-15.

Karbwang, J., Crawley, F. P., Na-Bangchang, K., & Maramba-Lazarte, C. (2019). Herbal Medicine Development: Methodologies, Challenges, and Issues. *Evidence-Based Complementary and Alternative Medicine*, *2019*.

Guo, D. A., & Liu, C. X. (2019). After a decade of persistent endeavor, Chinese Herbal Medicine is on the rise.

Li, F. S., & Weng, J. K. (2017). Demystifying traditional herbal medicine with modern approach. *Nature plants*, *3*(8), 1-7.

Agyei-Baffour, P., Kudolo, A., Quansah, D. Y., & Boateng, D. (2017). Integrating herbal medicine into mainstream healthcare in Ghana: clients' acceptability, perceptions and disclosure of use. *BMC complementary and alternative medicine*, *17*(1), 513.

Droney, D. (2016). Scientific capacity building and the ontologies of herbal medicine in Ghana. *Canadian Journal of African Studies/Revue canadienne des études africaines*, *50*(3), 437-454.

Baidoo, R. (2009). Toward a Comprehensive Healthcare System in Ghana. A Thesis presented to the Center for International Studies, University of Ohio.

Bent, S., (2008) "Herbal medicine in the United States: review of efcacy, safety, and regulation: grand Rounds at University of California, San Francisco Medical Center," Journal of General Internal Medicine, vol. 23, no. 6, pp. 854–859, 2008.

Berhanu, K. Z., (2013), Students' Perception Towards the use of Traditional Medicine for the Treatment of Mental Disorders: The Case of Arba Minch University, American Scientific

Research Journal for Engineering, Technology, and Sciences (ASRJETS) (2013) Volume 6, No 1, pp 32-52.

Bigdeli, M., Peters, D. H., Wagner, A. K., & World Health Organization. (2014). Medicines in health systems: advancing access, affordability and appropriate use.

Blaikie, C. (2019). Mainstreaming marginality: traditional medicine and primary healthcare in Himalayan India. *Asian Medicine*, *14*(1), 145-172.

Boadu, A. A., & Asase, A. (2017). Documentation of herbal medicines used for the treatment and management of human diseases by some communities in southern Ghana. *Evidence-Based Complementary and Alternative Medicine*, *2017*.

Boakye, M. K., Pietersen, D. W., Kotzé, A., Dalton, D. L., & Jansen, R. (2015). Knowledge and uses of African pangolins as a source of traditional medicine in Ghana. *PLoS One*, *10*(1), e0117199.

Boateng, M. A., Danso-Appiah, A., Turkson, B. K., & Tersbøl, B. P. (2016). Integrating biomedical and herbal medicine in Ghana–experiences from the Kumasi South Hospital: a qualitative study. *BMC complementary and alternative medicine*, *16*(1), 189.

Bodeker, G., & Ong, C. K. (2005). *WHO global atlas of traditional, complementary and alternative medicine* (Vol. 1). World Health Organization.

Brown, K. (1992). Medicinal Plants, Indigenous Medicine and Biodiversity in Ghana. Global Environmental Change Working Paper, 92-36, Centre for Social and Economic Research on the Global Environment, University of East Anglia and University College London.

Buor, D. (1993). „The Impact of Traditional Medicine on Health Delivery Services in Ghana: The Ashanti Situation". Journal of the University of Science and Technology, vol.13, no. 3, pp. 138- 147.

Calixto, J.B. (2000). „Efficacy, Safety, Quality Control, Marketing and Regulatory Guidelines for Herbal Medicines (Phytotherapeutic Agents)". Brazilian Journal of Medical and Biological Research, vol. 33, no. 2, pp. 179-189.

Chen, F. P., Chen, T. J., Kung, Y. Y., Chen, Y. C., Chou, L. F., Chen, F. J. and Hwang, S. J. (2007). Use of frequency of traditional Chinese medicine in Taiwan. BMC Health Serv Res; 7: 26.

Clement, Y.N., Morton-Gitten, J., Basdeo, L., Blades, A., Francis, M., Gomes, N., Janjua, M. and Singh, A. (2007). Perceived Efficacy Of Herbal Remedies by Users Accessing Primary HealthCare In Trinidad. BMC Complementary and Alternative Medicine, vol. 7, no. 4.

Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications.

Darko, I.N. (2009). Ghanaian Indigenous Health Practices: The Use of Herbs. Unpublished MA Thesis presented to Department of Sociology and Equity Studies in Education. Ontario Institute for Studies in Education, University of Toronto.

Davies, M. (1994). „Modern and Traditional Medicine in the Developing World." The McGill Journal for Developing Studies, vol. 14.

Dogor, G. K. F., Nyarko, R. A., Anning, A. K., & Oteng-Yeboah, A. (2018). Medicinal plant use and conservation practices by communities in the Togo Plateau Forest Reserve, Ghana. *Journal of Medicinal Plants Research*, *12*(30), 575-589.

Edet, R., Bello, O. I., & Babajide, J. (2019). Culture and the Development of Traditional Medicine in Africa. *Journal of Advanced Research in Humanities and Social Science*, *6*(3), 22-28.

Ekor M., (2014) The growing use of herbal medicines: issues relating to adverse reactions and challenges in monitoring safety. Front. Pharmacol. 4:177. doi: 10.3389/fphar.2013.00177

Fahmy, S. A., Abdu, S., & Abuelkhair, M., (2010), Pharmacists' attitude, perceptions and knowledge towards the use of herbal products in Abu Dhabi, United Arab Emirates. Pharmacy Practice (Internet) 2010 Apr-Jun;8(2):109-115.

Foo, J. U., Latiff, A., Omar, M. U., & Amir, A. A., (2016), Women's perception on medicinal plants in traditional Tamu, West Coast, Sabah, Malaysia. Malay Nat J. 2016;68(3):95–104.

Ghana Statistical Service (GSS) (2012). Population and Housing Census, 2010 summary of report of final results. Accra, Ghana.

Graneheim, U. H., & Lundman, B. (2004). Qualitative content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness. *Nurse education today*, *24*(2), 105-112.

Gureje, O., Appiah-Poku, J., Bello, T., Kola, L., Araya, R., Chisholm, D., ... & Price, L. (2020). Effect of collaborative care between traditional and faith healers and primary health-care workers on psychosis outcomes in Nigeria and Ghana (COSIMPO): a cluster randomised controlled trial. *The Lancet*, *396*(10251), 612-622.

Gyasi, R. M., (2014), Analysis Of Factors Influencing Traditional Medicines Utilisation In Ghana: Evidence From Kumasi Metropolis And Sekyere South District, Masters Thesis, Kwame Nkrumah University of Science and Technology Kumasi,Ghana.

Gyasi, R. M., Mensah, C. M., Adjei, P. O-W., Agyemang, S., (2011), Public Perceptions of the Role of Traditional Medicine in the Health Care Delivery System in Ghana, Global Journal of Health Science Vol. 3, No. 2; October 2011

Habtom, G. K., (2018) Perceptions and attitudes of modern and traditional medical practitioners about traditional medical practice in Eritrea. Int J Complement Alt Med. 2018;11(1):6–19. DOI: 10.15406/ijcam.2018.11.00340

Hughes, G. D., Aboyade, O. M., Clark, B. L., & Puoane, T. R., (2013), The prevalence of traditional herbal medicine use among hypertensives living in South African communities, Complementary and Alternative Medicine 2013, 13:38 http://www.biomedcentral.com/1472-6882/13/38

Hussen, S., & Malik, F., (2013), Integration of complementary and traditional medicines in public health care systems: Challenges and methodology, Journal of Medicinal Plant Research, Vol. 7(40), pp. 2952-2959, DOI: 10.5897/JMPR12.458

Ihekwoaba, E. C., (2014). "Strategies For Enhancing Information Access To Traditional Medical Practitioners To Aid Health Care Delivery In Nigeria." Library Philosophy and Practice (ejournal). 1179.

Isola, O. I., (2013), The "Relevance" Of The African Traditional Medicine (Alternative Medicine) To Health Care Delivery System In Nigeria, The Journal of Developing Areas, Vol. 47, No. 1 (Spring 2013), pp. 319-338

Jamshidi-Kia, F., Lorigooini, Z., & Amini-Khoei, H. (2018). Medicinal plants: Past history and future perspective. *Journal of herbmed pharmacology*, *7*(1).

Jones, M., & Liyanage, C. (2018). Traditional medicine and primary health care in Sri Lanka: Policy, perceptions, and practice. *Asian Review of World Histories*, *6*(1), 157-184.

Kanchan, R and Ghosh, T. (2012). Spatial Analysis of Accessibility and Utilisation of Primary Health Centers Using Geographical Information System: A Case Study of Nadia District,

West Bengal, India. Global Advanced Research Journal of Geography and Regional Planning; Vol. 1(2) pp. 030—037

Kessy, A. T., & Msalale, G. C. (2020). Understanding forgotten exposures towards achieving Sustainable Development Goal 3: the case of herbal medicine use in Tanzania.

Kidd, M. (2020). *The contribution of family medicine to improving health systems: a guidebook from the World Organization of Family Doctors*. CRC Press.

Krah, E., de Kruijf, J., & Ragno, L., (2018), Integrating Traditional Healers into the Health Care System: Challenges and Opportunities in Rural Northern Ghana, J Community Health (2018) 43:157–163 DOI 10.1007/s10900-017-0398-4.

Kumar, V., & Kumar, V. (2009). An overview of herbal medicine. *Int. J. Ph. Sci*, *1*(1), 1-20.

Kusi, H. (2012). Doing qualitative research: A guide for researchers. *Accra: Emmpong Press. PMid, 22299616*.

Kusi-Bempah, M., (2011), Spatial Analysis Of The Use Of Traditional Medicine In Urban Areas Of Ghana: A Case Study Of Kumasi Metropolis, Masters Thesis, Kwame Nkrumah University of Science and Technology Kumasi,Ghana.

Laelago, T., Yohannes, T., & Lemango, F., (2016), Prevalence of herbal medicine use and associated factors among pregnant women attending antenatal care at public health facilities in Hossana town, southern Ethiopia: facility based cross sectional study. Arch Public Health. 2016;74:1–8

Lincoln, Y. S., & Guba, E. G. (2000). The only generalization is: There is no generalization. *Case Study Method*, 27–44.

Lucas, G.N. (2010). „Herbal Medicine and Children." Sri Lanka Journal of Child Health, vol.39, pp. 76-78.

Mbada, C. E., Adeyemi, T. L., Adedoyin, R. A., Badmus, H. D., Awotidebe, T. O., Arije, O. O., & Omotosho, O. S., (2014), Prevalence and modes of complementary and alternative medicine use among peasant farmers with musculoskeletal pain in a rural community in South-Western Nigeria, BMC Complementary and Alternative Medicine (2015) 15:164 DOI 10.1186/s12906-015-0695-3

McDougall, L. (2016). Discourse, ideas and power in global health policy networks: political attention for maternal and child health in the millennium development goal era. *Globalization and health*, *12*(1), 21.

Melesse, T. G., (2014), Prevalence And Factors Associated With Parental Traditional Medicine Use For Children In Motta Town, Amhara Regional State, Ethiopia, Masters Dissertation, Addis Ababa University.

Mensah, C.M. (2008). Accessibility to and Utilization of Primary Health Care in Ga, Dangme East and Dangme West Districts of the Greater Accra Region. 17th Intra-College Seminar, CASS, KNUST, Great Hall Conference Room, March 19.

Meyers, S. S. (2016). *Changes and perceived sustainability among traditional medicinal practitioners in Ofuman, Brong Ahafo, Ghana* (Doctoral dissertation, College of Charleston).

Ministry of Health (2017), Policy guidelines on Traditional Medicine Development [Internet]. Accra; 2005 [cited 2017 Jul 13]. Available from: http://www.moh. gov.gh/wp-content/uploads/2016/02/TRADITIONAL-MEDICINE-POLICY.pdf.

Mohamad, T. A. S. T., Islahudin, F., Jasamai, M., Jamal, J. A., (2019), Preference, Perception And Predictors Of Herbal Medicine Use Among Malay Women In Malaysia, Patient Preference and Adherence 2019:13 1829–1837.

Mustapha, K. B., Kirim, R. A., Ibrahim, J. A., Onuche, P. O., & Bakare-Odunola, T. M., (2016) Perception of Use of Herbal and Orthodox Medicines in Parts of Abuja: A Pilot Study. J App Pharm Sci, 2016; 6 (09): 128-132.

Nguta, J. M., Appiah-Opong, R., Nyarko, A. K., Yeboah-Manu, D., & Addo, P. G. (2015). Medicinal plants used to treat TB in Ghana. *International Journal of Mycobacteriology*, *4*(2), 116-123.

NZUKI, D. M. (2016). *UTILIZATION OF HERBAL MEDICINE AMONG CHILDREN UNDER 5 YEARS OF AGE IN THARAKA NITHI COUNTY, KENYA* (Doctoral dissertation, KENYATTA UNIVERSITY).

Okanlawon, F. A., Akowuai, G., Siakwa, M., & Druye, A. A. (2011). Nurses' perception on the efficacy and safety of integrating herbal with orthodox medicine in Ghana. *West African Journal of Nursing*, *22*(1).

Okigbo, R.N. and Mmeka, E.C. (2006). „An Appraisal of Phytomedicine in Africa". KMITL Science and Technology Journal, vol. 6, no.2, pp. 83-94.

Olowekere, A. E., & Olajide, O., (2013), Women's perception of safety and utilization of herbal remedies during pregnancy in a local government area in Nigeria. Clin Nurs Stud. 2013;1(4):9–22.

Oluwatuyi, O. (2010). Location Distribution of Rural Medical Services for Effective Development: A case of Ekiti State, Nigeria. Journal of Innovative Research in Management and Humanities 1(1), (pp. 26-32).

Opoku-Mensah, F. A., (2015), Integrating Traditional And Orthodox Medicines In Healthcare Delivery In Ghana: A Study Of Wenchi Municipality, Masters Thesis, University of Ghana.

Otang, W. M., Grierson, D. S., & Ndip, R. N., (2011), Prevalence, perceived benefits and effectiveness of herbal medicine in the management of symptoms of opportunistic fungal infections in HIV/AIDS patients in the Eastern Cape, South Africa, African Journal of Biotechnology Vol. 10(83), pp. 19458-19463. DOI: 10.5897/AJB11.1239

Oyebode, O., Kandala, N-B., Chilton, P. J., & Lilford, R. J., (2016), Use of traditional medicine in middle-income countries: a WHO-SAGE study, Health Policy and Planning, 31, 2016, 984–991 doi: 10.1093/heapol/czw022

Ozioma, E. O. J., & Chinwe, O. A. N. (2019). Herbal medicines in African traditional medicine. *Herbal Medicine*, *10*, 191-214.

Ozioma, E-O. J., & Chinwe, O. A. N., (2019), Herbal Medicines in African Traditional Medicine, Herbal Medicines in African Traditional Medicine http://dx.doi.org/10.5772/intechopen.80348

Park, Y. L., Huang, C. W., Sasaki, Y., Ko, Y., Park, S., & Ko, S. G. (2016). Comparative study on the education system of traditional medicine in China, Japan, Korea, and Taiwan. *Explore*, *12*(5), 375-383.

Peprah, P., Agyemang-Duah, W., Arthur-Holmes, F., Budu, H. I., Abalo, E. M., Okwei, R., & Nyonyo, J. (2019). 'We are nothing without herbs': a story of herbal remedies use during pregnancy in rural Ghana. *BMC complementary and alternative medicine*, *19*(1), 1-12.

Polit, D. F., & Beck, C. T. (2010). Generalization in quantitative and qualitative research: Myths and strategies. *International Journal of Nursing Studies*, *47*(11), 1451–1458.

Profetto-McGrath, J., Polit, D. F., & Beck, C. T. (2010). *Canadian essentials of nursing research*. Lippincott Williams & Wilkins.

Saeed, B. I. I., Abdul-Aziz, A. R. and Zhao, X. (2013). Assessing the Influential Factors on the Use of Health care: Evidence From Ghana. International Journal of Business and Social Science, Vol. 4 No. 1, 12-20.

Sato, A. (2012). Revealing the popularity of traditional medicine in light of multiple recourses and outcome measurements from a user's perspective: a study from two regions in Ghana. Health Policy and Planning. doi:10.1093/heapol/czs010.

Sen, S., & Chakraborty, R. (2017). Revival, modernization and integration of Indian traditional herbal medicine in clinical practice: Importance, challenges and future. *Journal of traditional and complementary medicine*, *7*(2), 234-244.

Sen, T., & Samanta, S. K. (2014). Medicinal plants, human health and biodiversity: a broad review. In *Biotechnological applications of biodiversity* (pp. 59-110). Springer, Berlin, Heidelberg.

Shaikh, B.T. & Hatcher, J. (2005). Complementary and Alternative Medicine in Pakistan: Prospects and Limitations. Oxford: Oxford University Press.

Shenton, A. K. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for information*, *22*(2), 63-75.

Solecki, R. and Shanidar, I. V. (1975). A Neanderthal flower burial in northern Iraq. Science 190:880–881.

Speziale, H. J. S., & Carpenter, D. R. (2007). Action research method. *Qualitative Research in Nursing: Advancing the Humanistic Imperative*, 327–348.

Street, R. A., Smith, M., Moshabela, M., Shezi, B., Webster, C., & Falkenberg, T. (2018). Traditional health practitioners and sustainable development: A case study in South Africa. *Public health*, *165*, 1-5.

Taghizadieh, A., Mohammadinasab, R., Ghazi-Sha'rbaf, J., Michaleas, S. N., Vrachatis, D., & Karamanou, M. (2020). Theriac in the Persian Traditional Medicine. *Erciyes Medical Journal/Erciyes Tip Dergisi*, *42*(2).

Thatte, U. M., & Gogtay, N. J. (2018). Traditional Medicine: A Review of Work in India (2012-2017). *Proceedings of the Indian National Science Academy*, *84*(1), 267-279.

Thoa, N. T. M., Thanh, N. Z., Chuc, N. T. K. and Lindholm, L. (2013). The impact of economic growth on health care utilisation: a longitudinal study in rural Vietnam. International Journal for Equity in Health, 12:19. http://www.equityhealthj.com/content/12/1/19

Tilburt, J. C. and Kaptchuk, T. J. (2008). Herbal medicine research and global health: An ethical analysis. Bulletin of the World Health Organization. 86, 577–656.

Titaley, C. R., Hunter, C. L., Dibley, M. J., & Heywood, P. (2010). Why do some women still prefer traditional birth attendants and home delivery?: a qualitative study on delivery care services in West Java Province, Indonesia. *BMC pregnancy and childbirth*, *10*(1), 43.

Twumasi, P. A. (1979a). A social history of the Ghanaian pluralistic medical system. Soc Sci Med Med Anthropol. 1979 Dec; 13B (4):349-56.

Twumasi, P.A. (2005a). Medical Systems in Ghana: A study in Medical Sociology, Second Edition. Tema: Ghana Publishing Corporation, pp. 1-171.

University of Maryland Medical Centre. (2009).What is Herbal Medicine. http://umm.edu/health/medical/altmed.

Verma, S. and Singh, S.P. (2008). „Current and Future Status of Herbal Medicine.“ Veterinary World, vol. 1, no. 11, pp. 347-350.

Wani, B. A., Hamza, A. K. R., & Mohiddin, F. A. (2011). Saffron: A repository of medicinal properties. *Journal of Medicinal Plants Research*, *5*(11), 2131-2135.

Wassie, S. M., Aragie, L. L., Taye, B. W., & Mekonnen, L. B., (2015), Knowledge, Attitude, and Utilization of Traditional Medicine among the Communities of Merawi Town, Northwest Ethiopia: A Cross-Sectional Study, Hindawi Publishing Corporation Evidence-Based Complementary and Alternative Medicine Volume 2015, Article ID 138073, 7 pages http://dx.doi.org/10.1155/2015/138073

Weaver, C., Shezi, B., Street, R. A., Ranheim, A., & Falkenberg, T. (2020). Balancing the global traditional health agenda and local realities in South Africa: From perspectives to action. *European Journal of Integrative Medicine*, 101123.

WHO (2001). The Legal Status of Traditional Medicine and Complimentary/Alternative Medicine: A worldwide Review. Geneva: World Health Organization Press, pp.16-18. (Accessed from http://whqlibdoc.who.int/hq/2001/WHO_EDM_TRM_2001.2.pdf).

WHO (2002a). Traditional Medicine Strategy 2002-2005. Geneva: World Health Organization Press.

WHO (2003a). Traditional Medicine. World Health Organization Fact Sheet No

WHO (2003b). "Traditional Medicine". Fifty-Sixth World Health Assembly, Provisional agendatem 14.10. Geneva: World Health Organization Press.

WHO (2008). Traditional Medicine. World Health Organization Fact Sheet N o 134, December 2008. (Accessed from http://www.who.int/mediacentre/factsheets/fs134/en/).

WHO (2013). The WHO Traditional Medicine Strategy 2014-2023. WHO Library Cataloguing-in-Publication Data. World Health Organisation, Geneva. ISBN 978 92 4 150609 0

WHO. (2004). WHO Guidelines on Safety Monitoring of Herbal Medicines in Pharmacovigilance Systems. Geneva, Switzerland: World Health Organization.

WHO. (2005). National Policy on Traditional Medicine and Regulation of Herbal Medicines. Report of a World Health Organization Global Survey. Geneva, Switzerland: WHO.

Wilson, S. L., Kratzke, C. and Hoxmeier, J. (2012). Predictors of Access to Health care: What Matters to Rural Appalachians? Global Journal of Health Science, Vol. 4, No. 6.doi:10.5539/gjhs.v4n6p23 URL: http://dx.doi.org/10.5539/gjhs.v4n6p23

Woolf, A.D. (2003). „Herbal remedies and children: Do they work?" Are they harmful?" Pediatrics, vol. 112, no. 1, pp. 240-6.

World Health Organization. (1978). Declaration of Alma Ata. http://www.who.int/hpr/NPH/docs/declaration_almaata.pdf

World Health Organization. (2008). Traditional medicine. Factsheet No 134 http://www.who.int/mediacentre/factsheets/fs134/en/

World Health Organization. (2011). the World Medicines Situation 2011. Geneva: WHO.

World Health Organization. (2014). WHO traditional medicines strategy 2014-2023. Geneva: WHO.

World Health Organization. (2014). WHO traditional medicines strategy 2014-2023. Geneva: WHO.

Xue, C. C., Zhang, A. L., Lin, V., et al., (2010), Contemporary and Alternative Medicine Use in Australia: A National Population-Based Survey. J Altern Complement Med. 2010;13(6):643–650.

Yeboah, T., (2008), Improving the provision of traditional health knowledge for rural communities in Ghana, Health Libraries Review, 17, pp.203–208.

Yesilada, E. (2005). Past and future contributions to traditional medicine in the health care system of the Middle-East. *Journal of Ethnopharmacology*, *100*(1-2), 135-13

Zhou, J., Ouedraogo, M., Qu, F., and Duez, P. (2013). Potential genotoxicity of traditional Chinese medicinal plants and phytochemicals: an overview. Phytother. Res. doi: 10.1002/ptr.4942 [Epub ahead of print].

Zhou, S., Koh, H. L., Gao, Y., Gong, Z. Y., and Lee, E. J. (2004). Herbal bioactivation: the good, the bad and the ugly. Life Sci. 74, 935–968. doi: 10.1016/j.lfs.2003.09.035

Appendix I

QUESTIONNAIRE FOR TADITIONAL MEDICAL PRACTITIONERS

I am a student from University for Development Studies Tamale, conducting a study on Contributions and Challenges of traditional medicine in health care delivery system in Ghana: the case of West Mamprusi Municipality. this part of my master of Public Health degree, hence I will be most graceful if you could assist me by answering the following questions. All information, given will be confidentially treated.

PART A: SOCIO-DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

(Please tick [√] where appropriate)

1. Sex
   (1) Male [ ]
   (2). Female [ ]

2. (a) How old are you?.....

3. Marital status
   (1). Single [ ]
   (2). Married [ ]
   (3). Divorced [ ]
   (4). Widowed [ ]
   (5). Other (please specify)

4. How many children do have?.....

5. Place of residence
   (1) Urban [ ]
   (2). Rural [ ]

6. What is your daily income? …….

7.. Religion:
   (1). Traditional
   (2). Christianity
   (3). Islamic
   (4). Other (please specify)

8. What is your highest Educational level?

(1). No formal education [ ]
(2). Primary education [ ]
(3). Junior Secondary/Middle School [ ]
(4). Senior Secondary/Vocational education [ ]
(5). Tertiary education [ ]
(6). Non formal

9. what is your main occupation?

(Please the work that she spent most of her time on daily.)

(1). Farming
(2). Small trade business
(3). Housewife
(4). Clerk/admin
(5). Professional
(6.) Others (Please specify)

10.Which tribe are you?

PART B: PERCEPTIONS OF THE EFFECTIVENESS OF TRADITIONAL MEDICINE

1. Do you think herbal medicine is effective in the treatment of diseases/illnesses? 1. [ ] Yes 2. [ ] No 3. [ ] they are effective

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

3. Comparing herbal medicine to orthodox medicine, which one do you consider more effective? 1. [ ] Herbal Medicine 2. [ ] Orthodox medicine

4. Generally, how would you rate the efficacy of herbal medicine? 1. [ ] Very effective 2. [ ] Effective 3. [ ] Moderate 4. [ ] Ineffective

5. Generally, how would you rate the safety of herbal medicine? 1. [ ] Very safe 2. [ ] Safe 3. [ ] Somehow safe 4. [ ] Very unsafe

6. Have you ever experienced any adverse side effect(s) with the use of herbal medicine? 1. [ ] Yes 2. [ ] No

7. Have you ever experienced any adverse side effect(s) with the use of orthodox medicine? 1. [ ] Yes 2. [ ] No

8. It is popularly argued that the use of herbal medicine is dangerous to human health. How

far do you agree with this statement? 1. [ ] Strongly agree 2. [ ] Agree 3. [ ] Disagree 4. [ ] Strongly Disagree

9. What is/are the reason(s) for your answer in (40) above? .....

PART C: USE OF TRADITIONAL MEDICINE

1. How do you perceive your health status? 1. [ ] Very good 2. [ ] Good 3. [ ] Average 4. [ ] Poor 5. [ ] Very Poor

2. How often did you fall sick in the last three months? 1. [ ] Very frequently 2. [ ] Frequently 3. [ ] About 2-3 times 4. [ ] only once 5. [ ] Rarely/Never

3. On the average, how often do you fall sick in a year? 1. [ ] Very frequently 2. [ ] Frequently 3. [ ] About 2-3 times 4. [ ] only once 5. [ ] Rarely/Never

4. Which medical care do you usually seek when sick? 1. [ ] Herbal medicine 2. [ ] Orthodox medicine 3. [ ] Spiritual/faith Healing 4. [ ] Other (please specify).....

5. Have you subscribe to any health insurance? 1.[ ] Yes 2. [ ] No

6. Which medical care did you seek the last time you were sick? 1. [ ] Herbal medicine 2. [ ] Orthodox medicine 3. [ ] Spiritual Healing 4. [ ] Traditional birth attendant 5. [ ]Other (please specify).....

7. Have you ever used herbal medicine? By herbal medicine, I mean the use of plant seeds,

berries, roots, leaves, bark, or flowers for medicinal purposes. 1. [ ] Yes 2. [ ] No 3. [ ] Can‟t tell

8. Do you still use herbal medicine? 1. [ ] Yes 2. [ ] No

9. What was the reason for using herbal medicine? 1. [ ] Closeness to me/accessibility 2. [ ] Affordability/less costly 3. [ ] More efficacious 4. [ ] In line with my religion 5. [ ] Other (please specify).....

10. How often do you use herbal medicine? 1. [ ] Always/Whenever sick 2. [ ] Sometimes 3. [ ] Once in a while 4. [ ] Rarely/Never

11. How do you use herbal medicine? 1. [ ] First choice treatment 2. [ ] Alternative to orthodox medicine 3. [ ] Complementary to orthodox medicine 4. [ ] Other (please specify).....

12. In which way(s) do you use herbal medicine? 1. [ ] Prevention of Illness 2. [ ] Treatment of illness 3. [ ] Promotion of health 4. [ ] Other (please specify).....

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

1. [ ] Prescribed by herbal practitioner

2. [ ] Prescribed by orthodox health care professional (e.g., doctor, pharmacist, etc.)

3. [ ] Prescribed by a relative

4. [ ] Over the counter herbal remedies

5. [ ] Collected from garden/farm/backyard

6. [ ] Other (please specify).....

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

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

15. How many times have you used orthodox medicine in the last three months? 1. [ ] Very frequently 2. [ ] Frequently 3. [ ] About 2-3 times 4. [ ] Only once 5. [ ] Rarely/Never

PART D: CONTRIBUTION OF TRADITIONAL MEDICINE IN HEALTH CARE DELIVERY

1. How long have you been using traditional medicine?
(1) Not long
(2) Quite sometime
(3) Very long time
(4) Since I was born

2. So what will you say is the benefit using traditional medicine?
(1) Satisfaction for getting treatment for me and my family
(2) Able to carry on my day to day's work
(3) The health of me and my family
(4) Able to work and feed my family
(5) Able to work and make money
(6) My children are healthy to go to school

3. Do you think traditional medicine is playing a role to improve the health of the people in this community?
(1) Yes [ ]
(2). No [ ]

4. If yes to Q26, what do you think is the contribution of traditional health in maintaining quality health? Multiple response
(1) The community members do not have to travelling far to access health care [ ]
(2) The community members do spend so much to access health care. [ ]
(3) They appreciate and accept the processes for healing them [ ]
(4) Community member could access health and pay later [ ]
(5) The cost to travel long distance to access health facility [ ]
(6) The risk of losing patients due to the poor nature of road network [ ]
(7) Attend to both medical and spiritual healing [ ]
(8) Have attention for your total health not specific disease [ ]

5. if No to Q26, explain your answer ……

PART E: CHALLENGES OF TRADITIONAL MEDICINE IN HEALTH CARE DELIVERY.

1. Have you ever experienced any adverse side effect(s) with the use of traditional medicine?
(1). Yes [ ]

(2). No [ ]

2. There are some people who think that traditional medicine is dangerous for human health, how far do you agree with this statement?

(1). Strongly agree [ ]
(2). Agree [ ]
(3). Disagree [ ]
(4). Strongly Disagree [ ]

3. What is/are the reason(s) for your answer in (38) above?.....

4. In your use of traditional medicine, have you recognized any challenges?

(1). Yes [ ]
(2). No [ ]

5. If yes, what do you think is/are the challenge in the patronage of traditional medicine? Multiple response

(1) No standardization in the measure of the dosage [ ]
(2). How the herb are prepared without test [ ]
(3). The subjective diagnosing process [ ]
(4). Some are not licensed [ ]
(5) Many are not educated [ ]
(6) Some are not properly trained [ ]
(7). The preparatory process is not hygienically processed [ ]
(8.) others (specify)

6. What improvement will you want to see in traditional medicine? Multiple response

(1). attach TMP to orthodox medical facility [ ]
(2). Give training to improve the capacity TMP to deliver quality service [ ]
(3). Integrated traditional and orthodox medicine to provide quality services [ ]
(4). support traditional medical practitioners with resources to aid their service delivery (5). standardize the dosage [ ]
(6). improve the diagnosing process [ ]

7 .When you go to the Traditional Medical practitioner, are you satisfied with the treatment?

(1). Yes [ ]
(2). No [ ]

8.What makes you satisfied or not? (Explain……)

9. Are the traditional medical Practitioners registered?

(1). Yes [ ]
(2). No [ ]
(3). Don't know [ ]

10 .Which solution/s do you recommend for the improvement of traditional medicine? Multiple response

(1). Scientific research into the safety and efficacy of herbal medicines [ ]
(2). Sustainable utilization of medicinal plants [ ]
(3). Provision of license to herbal practitioners [ ]
(4). Clinical testing of herbal medicines before use [ ]
(5). Other (please specify)

11. Do you support the formal training of herbal practitioners for the improvement of their practices? 1. [ ] Yes 2. [ ] No

12. What type of training do you support?

1. [ ] Classroom educational training

2. [ ] Practical training by experienced herbalists

3. [ ] University level training/education

4. [ ] Training abroad

5. [ ] Other (please specify).....