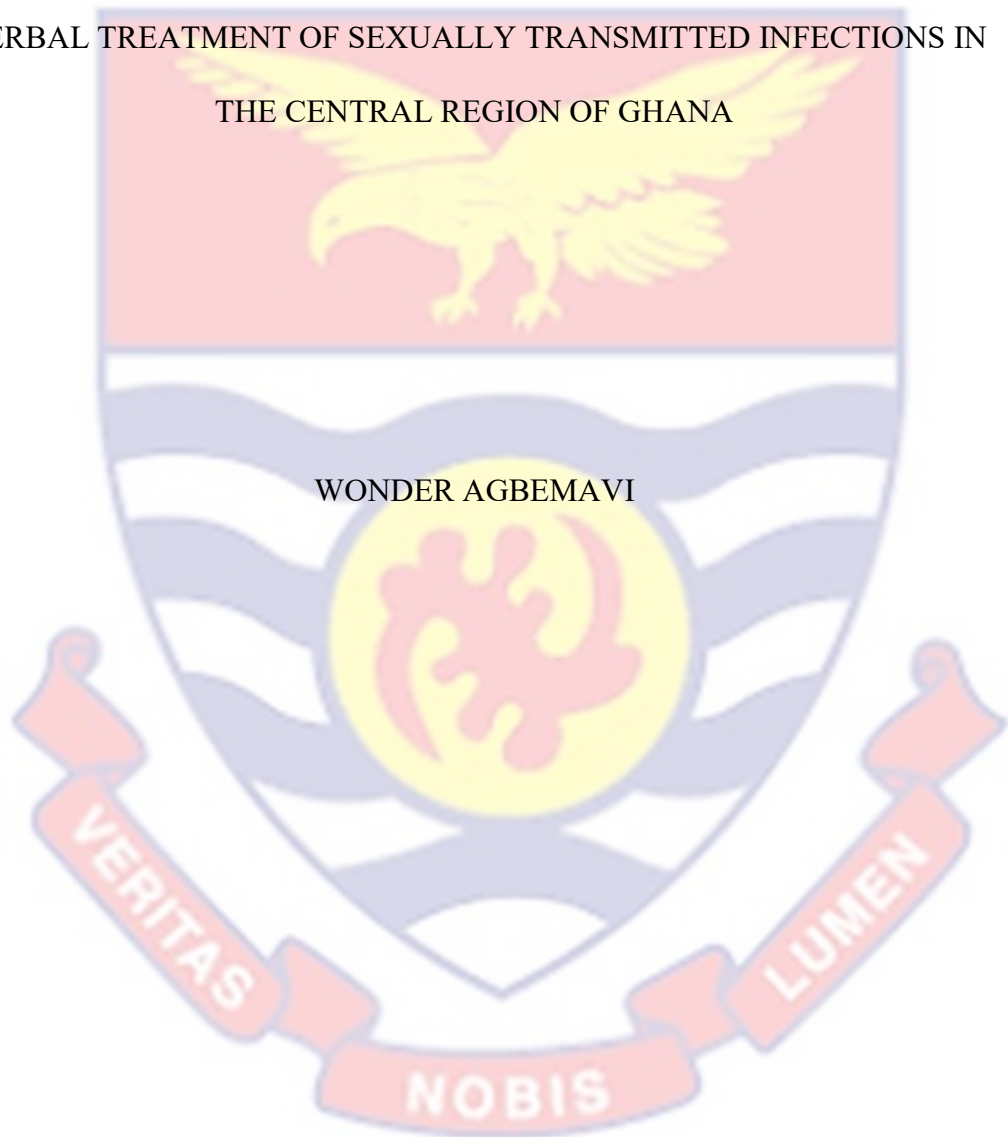
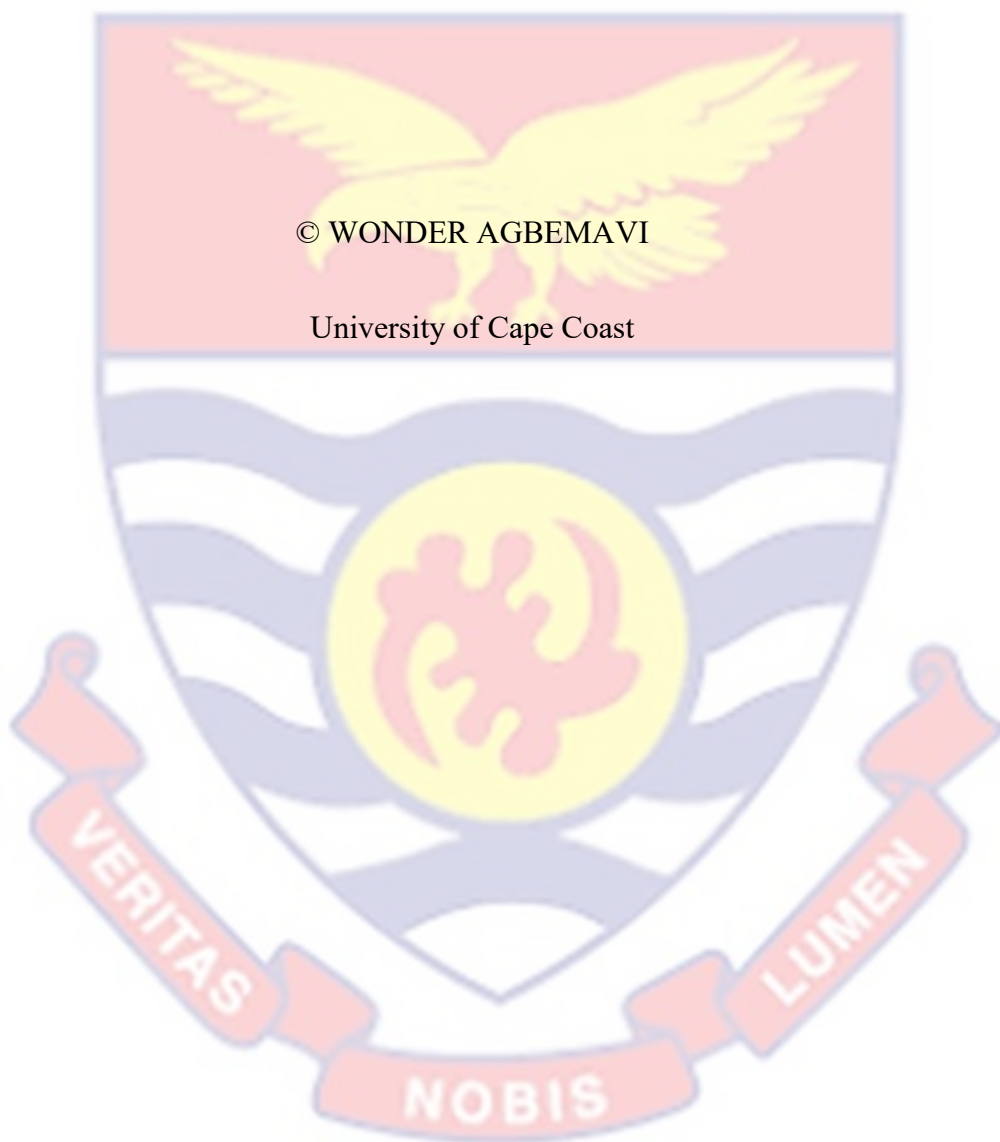


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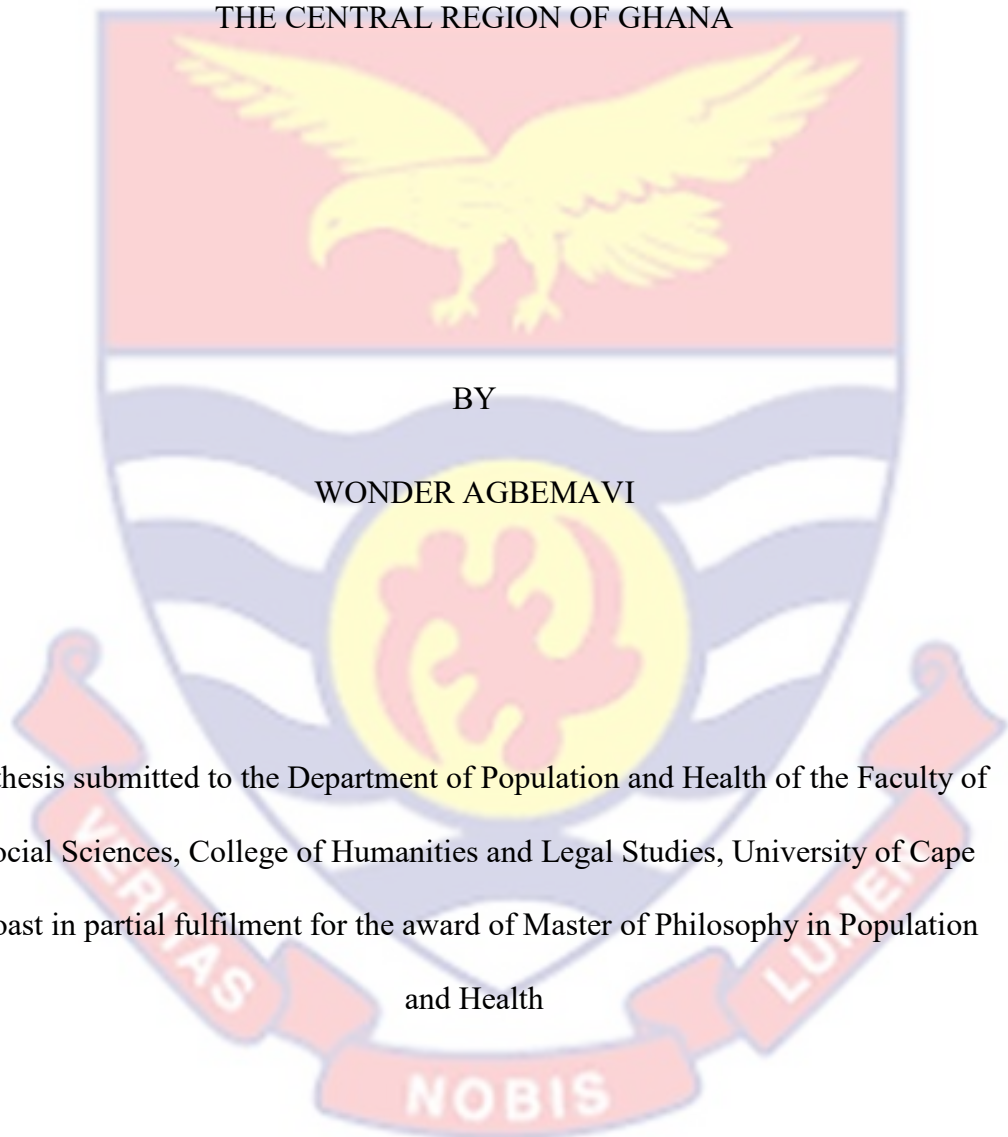


2021



UNIVERSITY OF CAPE COAST

HERBAL TREATMENT OF SEXUALLY TRANSMITTED INFECTIONS IN  
THE CENTRAL REGION OF GHANA



BY

WONDER AGBEMAVI

A thesis submitted to the Department of Population and Health of the Faculty of Social Sciences, College of Humanities and Legal Studies, University of Cape Coast in partial fulfilment for the award of Master of Philosophy in Population and Health

DECEMBER 2021



## DECLARATION

### Candidate's Declaration

I hereby declare that this thesis is the result of my original research and that no part of it has been presented for another degree in this university or elsewhere.

Candidate's Signature: ..... Date: .....

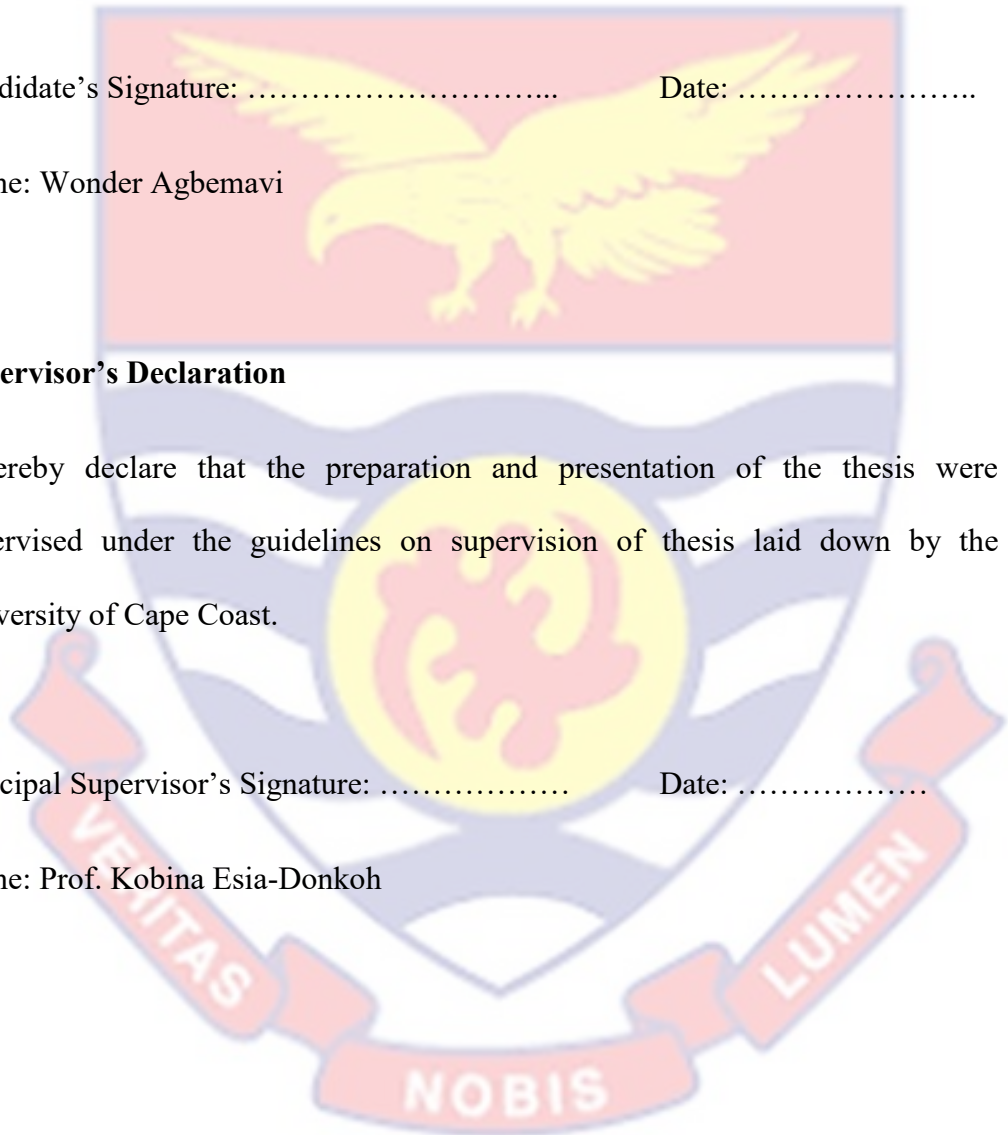
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### Supervisor's Declaration

I hereby declare that the preparation and presentation of the thesis were supervised under the guidelines on supervision of thesis laid down by the University of Cape Coast.

Principal Supervisor's Signature: ..... Date: .....

Name: Prof. Kobina Esia-Donkoh



## ABSTRACT

In Ghana, like in many African countries, sexually transmitted Infections (STIs) are a major public health problem. Guided by the African indigenous knowledge, this study used the interpretivist paradigm to explore the herbal treatment of sexually transmitted infections in the Central region of Ghana. The study recruited 20 participants using the purposive sampling technique. Data collected were analysed using thematic analysis. The findings of the study indicated that traditional practitioners' beliefs in the use of herbs were due to spiritual, socio-economic and natural composition of herbs. A total of twenty-four (26) species of herbs were identified to be effective in treating sexually transmitted infections. Eleven (11) of the herbs were named as effective for treating gonorrhoea, ten (10) for syphilis, and five (5) were named to have been used to treat HIV and AIDS. *Grewia carpinifolia*, *Cardiospermum grandifolia* and *Aspilla Africana* were the most commonly used herbs among practitioners while Zingiberaceae, Sapindaceae and Apocynaceae were the most popular families used to treat STIs. The processes involved in the treatment of gonorrhoea, syphilis and HIV and AIDS are revelation about client, diagnosis, establishing the causes of STIs, application of treatment therapy, review, confirmation of treatment and thanksgiving. Destiny plays an important role in the treatment of STIs. Practitioners perceived that herbal treatment has therapeutic and adverse effects. The Ghana Health Service in collaboration with the Ghana Federation of Traditional Medicine Practitioners Associations (GHAFTRAM) may organize training workshops to build the capacity of traditional healers in areas of medicine dosage, hygiene and record-keeping.



**KEY WORDS**

Sexually transmitted infections

Herbal medicines

Indigenous traditional medicine

Traditional medicine

Treatment

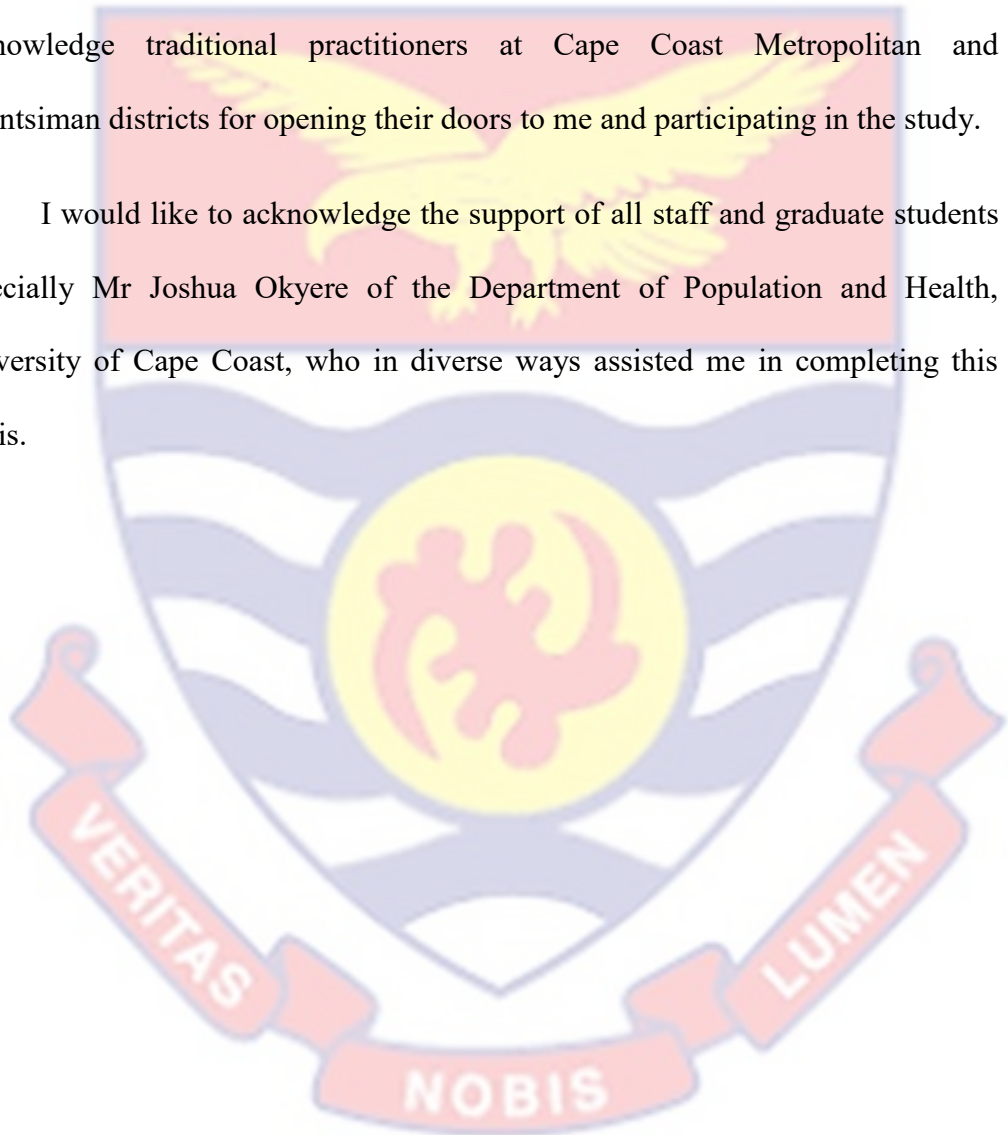
Herbal treatment



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## DEDICATION

To my family and friends



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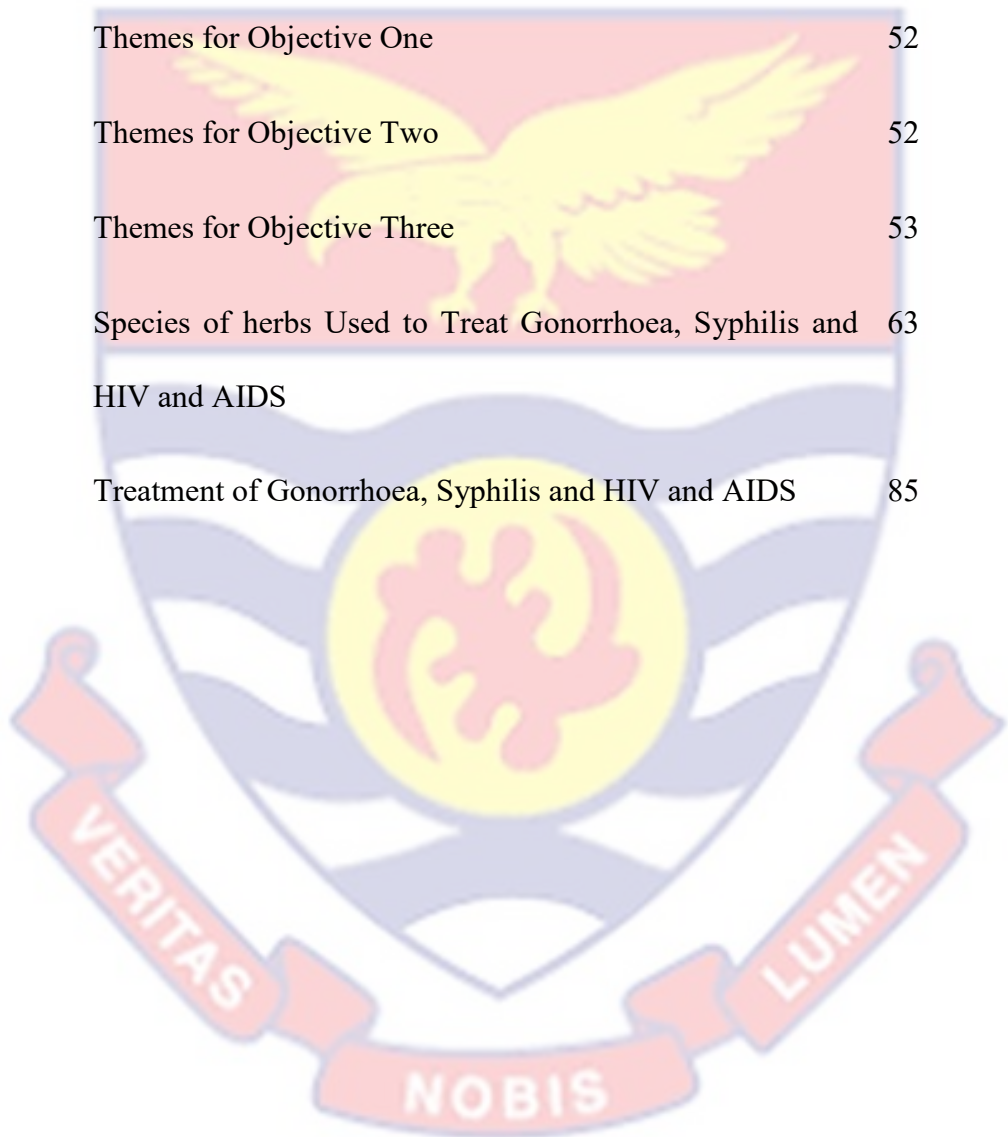
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## LIST OF ABBREVIATIONS

AIDS	Acquired Immunodeficiency Syndrome
AHM	African Herbal Medicine
CDC	Centre for Disease Control
GHAFTRAM	Ghana Federation of Traditional Medicine Practitioners Associations
GMT	Greenwich Meridian Time
HPV	Human papillomavirus
HIV	Human Immunodeficiency Virus
ICT	Indigenous Contagion Theory
IKS	Indigenous Knowledge System
ICT	Indigenous Contagion Theory
IKS	Indigenous Knowledge System
IDI	In-depth Interview
PHC	Population and Housing Census
STIs	Sexually Transmitted Infections
TMH	Traditional Medicine and Healing
UNAIDS	Joint United Nations Programme on HIV/AIDS
WHO	World Health Organisation

## CHAPTER ONE

### INTRODUCTION

#### Background to the Study

Since time immemorial, several communities have resorted to spirits and plants as sources of healing therapies. This could be attributed to the belief that man (or woman) consists of both spiritual and biological components, and that, to achieve healing or well-being, therapy must relate to these components (Sykes, 2016; Sulmasy, 2002; Puchalski, 2004). Available literature shows that two-thirds of the world's population rely purely on herbal medication as the first point of medication usually administered by traditional health practitioners (Marks, 2006; Nukpe, 2011; Rajandeeep, Sman, & Sharma, 2019).

The application of herbal medicines and associated medicinal plants is widespread but highly diverse due to floristic and cultural diversity, application of traditional medicine and spiritual orientations in healing (Boadu & Asase, 2017). Some have argued that the use of, and the reliance on herbs and spiritual therapies relate to the concept of health and illness (Ajima & Ubana, 2018; Fokunang et al., 2011). Thus, the World Health Organisation's definition of health "as a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (WHO, 1948, p. 100) suggests that ill-health goes beyond physical display of its signs and symptoms. Before this definition, local and indigenous communities worldwide have conceptualised health within three main domains: the natural/physical/biological, social, and spiritual (Ajima & Ubana, 2018; Ozioma & Chinwe, 2019; White, 2015).



The traditional medical theory views disease in the light of spiritual and social causation (Opoku, Manu, & Antwi, 2018). In this context, diseases do not affect only individuals but, in a broad sense, they also affect their relationship with their cosmos, and more strictly, their relationship with their immediate family, relatives, as well as the people of the village (Opoku, Manu, & Antwi, 2018). Similarly, the bio-psychological theory also explains the components of human health as encompassing the biological, psychological and social elements (Bolton and Gillett, 2019; Zittel, Shawn, and Wodarski, 2008). By extension, the psychological and social elements could also be interpreted as spiritual components of human well-being (Sulmasy, 2002). This has broadened the understanding and conceptualisation of health and ill-health across different societies and perspectives. Within the African indigenous knowledge system, ill-health is understood to be an imbalance between the social, physical and spiritual makeup of an individual (Davis, 2012), hence, traditional health practitioners who use herbs and spirits or herbs only touch on the biological, social and spiritual makeup of the human, unlike the orthodox healing therapies, hence, many local communities rely on them (Van Onselen, 2011; Kahissay, Fenta & Boon, 2017; Workneh, Emirie, Kaba, Mekonnen, & Kloos, 2018).

In Africa, at least, 80 per cent of people continue to rely on traditional medicinal plants for their health care needs (Boadu & Asase, 2017). This is because medicinal remedies are easier to access, affordable, and due to the perception that the treatment is harmless and is guaranteed to bring favourable results, psychological comfort, and its acceptability in most communities (Aniah, 2015; Barimah, 2016; Gyasi, Krah, de Kruijf, & Ragno, 2018; Gyasi, Siaw, & Mensah, 2015; Tabi et al., 2006).



Herbal treatment has been identified as one of the traditional healing therapies that play an important role in restoring imbalance (illness) to the human body (Welz, Emberger-Klein, & Menrad, 2018). For example, available literature has shown that many herbal healing therapies touch on the biological, social and spiritual aspects of diseases (Van Onselen, 2011; Kahissay, Fenta & Boon, 2017; Workneh, Emirie, Kaba, Mekonnen, & Kloos, 2018). Some diseases that are treated by traditional health practitioners using herbs and spirits or herbs only include cancer, stroke, malaria, fever (Ampomah, Yankson, Akotoye, & Ameyaw, 2017; Bussmann & Sharon, 2006; O'Brien et al., 2012; Gyasi, Mensah, Adjei, & Agyemang, 2011). It is also documented in the literature that traditional health practitioners use indigenous knowledge in the form of herbalism to treat sexually transmitted infections such as gonorrhoea, syphilis, HIV/AIDS, chlamydia, genital herpes, human papillomavirus (HPV) (Amoah, Sandjo, Bazzo, Leite, & Biavatti, 2014; Azu, Richter, & Aniteye, 2018; Wilmot, Ameyaw, Amoako-Sakyi, Boampong, & Quashie, 2017).

In sub-Saharan Africa, ethnobotanical studies done on STIs revealed that gonorrhoea, syphilis, HIV/AIDS, urinary tract infections, candida infections are the most commonly treated infections (De Wet et al., 2012; Alexio & Precious, 2014; Islam & Moreau, 2009; Gyasi, Tagoe-Darko, & Mensah, 2013; Mbambala & Tshisikhawe, 2016; Kamanja et al., 2015; Nazer et al., 2019; Ndubani & Höjer, 1999; Ndulo, Faxelid, & Krantz, 2001; Njoroge & Bussmann, 2009).

In Ghana, like in many African countries, sexually transmitted infections (STIs) are a major public health problem. The most common STIs are gonorrhoea, syphilis, Chlamydia, HIV and genital herpes (Ghana AIDS Commission [GAC], 2010). Guided by the African indigenous knowledge, this

study investigates the herbal treatment of sexually transmitted infections in the Central region of Ghana.

### **Problem statement**

Traditional medicine and healing (TMH) has been a historical and dynamic knowledge and practice among many cultures and societies to meet their primary health care services (Abukari, 2016). Although TMH provides healthcare services to over 80 per cent of the population, efforts to develop the traditional medicine system have, however, been targeted only at developing herbal medicine through researches and clinical examinations conducted by research centres but not so much into the improvement of the traditional medicine and healing to which herbal medicine is a part (Abukari, 2016). Twumasi (1975:129) argued that any endeavour to use the services of traditional healers should be preceded by research. A similar call was made by Ofosu-Amaah (2005:197) when he asserted that, more information and understanding is desirable about traditional medical practices and that “research will be needed to clarify many issues about the whole system and the effectiveness of Traditional Medicine”.

Obtaining information on STIs and the methods of their prevention and treatment is one of the most important issues that everyone should be aware of. Fortunately, today, with the developments in technology and the promotion of human knowledge and science, many people around the world have become aware of these infections, or at least they have become familiar with the methods of their prevention and treatment in modern medicine; however, much has not been done on therapeutic methods of traditional medicine to treat common sexually transmitted infections such as gonorrhoea, syphilis and HIV/AIDS

(Nazer et al., 2019). Studies have been conducted on herbal medicine for illness treatment in some parts of Ghana. Notable among them are Traditional Herbalists and Cancer Management in Kumasi, Ghana (O'Brien et al., 2012); Ghanaian Men Living with Sexual Transmitted Infections: Knowledge and Impact on Treatment Seeking Behaviour: A Qualitative Study (Azu, Richter, & Aniteye, 2018); In vivo efficacy of top five surveyed Ghanaian herbal anti-malarial products (Wilmot et al., 2017); Herbalists, traditional healers and pharmacists: A view of tuberculosis in Ghana (Amoah et al., 2014); Ethnomedicinal Survey of Plants Used for the Management of Hypertension Sold in the Makola Market, Accra, Ghana (Bekoe et al., 2017); Documentation of herbal medicines used for the treatment and management of human diseases by some communities in southern Ghana (Boadu & Asase, 2017).

Despite these studies, there is relatively little evidence on traditional medicine and the treatment of sexually transmitted infections. This study, therefore, identifies that there is a gap in the literature and hence, this study seeks to fill this gap.

### **Objectives of the study**

The general objective of the study was to explore the herbal treatment of sexually transmitted infections in the Central Region. Specifically, the study sought to:

1. Explore the beliefs associated with the use of herbs.
2. Identify the various species of herbs used to treat STIs (gonorrhoea, syphilis and HIV and AIDS).

3. Examine the processes involved in the herbal treatment of STIs such as gonorrhoea, syphilis and HIV and AIDS.

### **Research Questions**

1. What are the beliefs that are associated with herbs?
2. What are the various species of herbs used to treat gonorrhoea, syphilis and HIV/AIDS?
3. How do traditional practitioners use herbs to treat persons with gonorrhoea, syphilis and HIV/AIDS?

### **Significance of the study**

The findings of the study will bring to fore the importance of the traditional health care system and expand knowledge on the current debates on the safety and the perceived treatment of gonorrhoea, syphilis and HIV/AIDS. In addition, it will add to the existing literature and also serve as reference material to students, researchers and traditional practitioners. The findings of the study may be relevant to Ghana Health Service and other stakeholders such as scientists who are keen on finding new drugs for the treatment of STIs. The study will also provide the various species of plants in the region that are contributing to the treatment of Sexually Transmitted Infections in Ghana. This may contribute to the knowledge of such plant species, and their possible conservation.

### **Definition of Terms**

#### **Sexually Transmitted Infections (STIs)**

Sexually transmitted infections (STIs) are infections that are passed from one person to another through sexual contact. The causes of STIs are bacteria,



parasites, and viruses. There are more than 20 types of STIs, but, the commonest are Gonorrhoea, HIV/AIDS, Syphilis, Genital herpes, Chlamydia, Human papillomavirus (HPV). The study will, therefore, consider three of these common types (Gonorrhoea, Syphilis and HIV and AIDS).

### **Herbal medicines**

Herbal medicines as defined by World Health Organization (WHO) refers “to herbs, herbal materials, herbal preparations, and finished herbal products that contain whole plants, parts of plants, or other plant materials, including leaves, bark, berries, flowers, and roots, and/or their extracts as active ingredients intended for human therapeutic use or other benefits in humans and sometimes animals” (WHO, 2019). According to this definition, there are three kinds of herbal medicines: raw plant materials, processed plant materials and medicinal herbal products. For this study, raw plant materials and processed plant materials will be considered.

### **Indigenous traditional medicine**

Indigenous traditional medicine is defined as “the total of knowledge and practices, whether explicable or not, used in diagnosing, preventing or eliminating physical, mental and social diseases. This knowledge or practice may rely exclusively on experience and observation handed down orally or in writing from generation to generation. These practices are native to the country in which they are practised. The majority of indigenous traditional medicine has been practised at the primary health care level” (World Health Organization, 2019).

## **Traditional medicine**

Traditional medicine has a long history. It is the sum total of the knowledge, skill 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, 2019).

## **Treatment**

It is defined as the act or manner or an instance of treating someone or something. It is also the application of medicines, surgery, psychotherapy, etc, to a patient or a disease or symptom (WHO, 2019).

## **Herbal treatment**

The World Health Organisation defined herbal treatment as the use of herbal medicine, including dosage, indication, and administration route (WHO, 2019).

## **The organisation of the Study**

The study is organised into seven chapters. Chapter One entails an introduction to the study. It comprises the background to the study, statement of the problem. The general and specific objectives of the study, the research questions, the significance of the study, the definition of key terms and the organisation of the study are all highlighted in Chapter One. Chapter Two covers conceptual and theoretical perspectives on indigenous knowledge and health. Specifically, concepts such as knowledge, life, man, health and ill-health, healing and destiny were presented. Theoretical frameworks on health such as the bio-psychosocial model, indigenous contagion theory (ICT) of disease and theories of



illness were presented. A conceptual framework was developed based on the reviewed theories and concepts to guide the study. The Chapter Three of the study reviews empirical literature on indigenous knowledge and herbal treatment of sexually transmitted infections. It comprises indigenous knowledge; an overview of sexually transmitted infections; indigenous knowledge, sexually transmitted infections and treatment; species of herbs used to treat sexually transmitted infections; beliefs about herbal treatment and; side-effects of herbal treatments. Chapter Four then discusses methods of data collection and analysis. In that chapter, issues of research philosophy and study design, data collection procedures, Covid-19 preventive measures during data collection, challenges encountered on the field, data processing and analysis, ethical considerations. Chapter Five covers results and discussions for objectives one and two. This includes the beliefs associated with herbal treatment and the various species of herbs used to treat sexually transmitted infections such as gonorrhoea, syphilis and HIV and AIDS. Chapter Six presents the results and discussions of objectives three and four. That is, the processes involved in the herbal treatment of sexually transmitted infections and the challenges associated with the treatment of sexually transmitted infections. The final chapter, Chapter Seven, presents the summary, conclusions and recommendations based on the findings of the study. In addition to these main chapters, there are appendixes made up of sample interview guides, ethical clearance forms, introductory letter and other documents.

## CHAPTER TWO

### CONCEPTUAL AND THEORETICAL PERSPECTIVES ON INDIGENOUS KNOWLEDGE AND HEALTH

#### Introduction

Conceptual and theoretical perspectives underpin every discourse and are critical to understanding the ontological, epistemological and axiological bases of a subject or an issue (Berryman, 2019; Punch, 2005). Within the context of this study, these perspectives have been classified as oral literature. This chapter discusses these perspectives that relate to the conceptual issues about knowledge, life, health, healing and destiny; the theoretical frameworks including the biopsychosocial model, indigenous contagion theory (ICT) of disease and Murdock's ill-health theoretical model; and the conceptual framework for the study.

#### Conceptual Issues

The way individuals perceive and conceptualise things reflect how they think and act. Many scholars, especially from the post-modernism era, have argued that there is no single or best way to conceptualise issues except by the people who intend to make meaning of the concept (DeCarlo, 2018). The focus of this section is to discuss the concept of knowledge, life, health, healing and destiny.

### *Concept of Knowledge*

Knowledge can be seen as empirical or intuitive. Intuitive knowledge stems from beliefs and faith while empirical knowledge is related to anything that can be objectively described and proven. Knowledge from the interpretivism perspective is concerned with specific, contextualised reality and knowledge that are not objective but influenced by people within a specified environment. In other words, interpretive knowledge is subjective rather than objective (O’Gorman & MacIntosh, 2015).

Similarly, indigenous knowledge, a branch of Indigenous Knowledge System (IKS) is unique, local, relative, subjective, multicultural and contextual knowledge. Knowledge production is based on empirical, spiritual, and pragmatic reality (Zinyeka, 2016). This knowledge system conceptualises knowledge as a revelation that is received from the spiritual world and passed on from one generation to another in a specific environment (Kaene, 2004). For example, the philosophy of African indigenous knowledge among the tribe of Zarma, Niger “Baray, i si a day, i si a kumna, zumandi no” which translates into English “Knowledge is given from above and cannot be bought nor gathered, one does not buy it, one does not gather it, it is a gift from the sky” (Kaene, 2004). This suggests that Spirits such as the Supreme God, ancestors, lesser gods etc. are the givers of knowledge.

### *Concept of Life*

Life is both animate and inanimate. Animate means simply alive. It also means spirited or brought to life. Animate objects that have life include human beings, plants, rivers, lands among others. From the biocentric point of view,

everything in the ecosystem has an intrinsic/inherent value and must be considered important (Steg and de Groot, 2012). This perspective is similar to the African philosophy about life (everything has life). Thus, from the ontology and epistemology of indigenous knowledge, all resources have their perfect functions to contribute to the natural order. Thus, every resource, human or non-human such as herbs, living or non-living has a role to play in the life of nature. Thus, everything is alive and has life (Omonzejele, 2008).

Man in this context, a male and female, is part of the ecosystem and is considered as a living thing. Largely from the African perspective, man is a living thing that is made up of three components; the body, soul and spirit (Gyekye, 1987). This can be referred to as the tri-dimensionality of man. Popper, for instance, conceptualises it as a subject that concurrently exists in three distinct worlds; the physical world of nature, the internal world of ideas, thoughts, and emotions, and the social world of intersubjectivity (Popper, 1972). The understanding of the concept of man is key because it helps the healer to better understand the composition of man and it aids him or her to consider all the three components in the healing process. Thus, the treatment of an ill person involves not only healing his or her physical being but may also involve the spiritual, moral, and social components as well.

#### *Concept of Health and Ill-Health*

Health and ill-health are phenomena of universal and perennial human interest. However, people of different cultures view these concepts differently (Ajima & Ubana, 2018). The African concept of health is embracing; in other words, it cannot be taken in isolation. To the traditional African, health is not just



about the proper functioning of bodily organs. Rather, it primarily consists of the physical/natural/biological, social and spiritual stability of a person, a group or a community (Abukari, 2016). This concept is similar to the WHO's description of health which also focuses on the biological and psychosocial dimensions (WHO, 2019). The physical or natural or biological health, as explained by Kahissay, Fenta and Boon (2017), for instance, is associated with favourable conditions in the environment including the life-supporting resources from the ecosystem, and biological conditions related to genetics. As such, any disturbances or instability in any aspect of the environment or genetic formation could result in ill-health. Hence, the belief is that certain illnesses occur due to infections from specific natural agents such as worms, insects and animals; pollution and changes in climate; food-poisoning and unbalanced diet; and malfunctioning of specific organs as a result of heredity (Kahissay, Fenta, & Boon, 2017; Westerlund, 2006; Workneh et al., 2018). This explains the direct link between nature and genetics and health.

The social dimension of health relates to the relationships that exist between individuals and groups (horizontal), and the deities (vertical). Indicators include good interpersonal interactions, treating everyone especially the aged, vulnerable and children with love, providing for the needs of people and community, and most importantly, cordial relationship with God, gods, the ancestors and divine carriers (Workneh et al., 2018). Whenever there is a distortion in any of the dimensions (vertical or horizontal) there could be ill-health. By extension, social health often transcends into mental and psychological health (Keyes, 2014).



Spiritual health is also a component of health. This dimension is usually perceived and conceived by persons or groups whose knowledge orientation is inclined towards the indigenous knowledge system (Ohajunwa & Mji, 2019). The belief is that health comes from the spirit world. That is, the natural and social dimensions of life are regulated by spirit beings. This explains the need to relate with the spirit world for fortunes in health and subsequently, good life. So, whenever there is a break in the relationship, there could be consequences; either the spirit deities would bring punishments in the form of ill-health, or they allow bad spirits to cause ill-health to the individual(s) or group concerned (Ezeanya-Esiobu, 2019; van Onselen, 2011).

#### *Concept of Healing*

The concept of healing could be traced to its etymological meaning. According to Quinn, 1997, healing from the old English term 'haelen', means "wholeness". The concept is relevant in a wide range of disciplines, including medicine, nursing, psychology, public health, education, religion, and spirituality, as well as in diverse knowledge systems. Healing, therefore, occurs in multiple dimensions, and in indigenous knowledge, for instance, it encompasses physical or natural or biological, social, environmental and spiritual components of health (Firth, Smith, Sakallaris, Bellanti, Crawford & Avant, 2015). Thus, the concept transcends treatment, which is an aspect of healing (Omonzejele, 2008).

#### *Concept of Destiny*

Destiny is an age-old concept. In ancient European thinking, destiny carried the idea of fate. That is, it connotes an event, behaviour or incident that is

bound to happen to a person; it might even be called fortune or luck (Asante & Chai, 2013). Thus, destiny is perceived as an event that is predestined by the spirit world to occur (Dopamu, 2008; Madrimov, 2019; Majeed, 2015). On the other hand, the concept is perceived as a process, but although predetermined, could be altered for a positive outcome or negatively result by good spirits or bad spirits respectively (Dopamu, 2008; Offiong 1999).

### **Theoretical Frameworks on Health**

Theoretical frameworks serve as the building blocks upon which research works are situated and provide understanding to the linkages of variables to be studied (Kivunja, 2018). This section presents a discussion on three of these models which provide a pathway for this study. They are the bio-psychosocial model, indigenous contagion theory (ICT) of disease and theories of illness were presented.

#### *Biopsychosocial Model of Health and Illness*

The biopsychosocial model was first conceptualised by George Engel in 1977. Since then, other theorists and researchers have applied the model in many fields including clinical psychology, social science, medical and nursing (Miles, 2013). The model explains that to understand a person's medical condition and offer treatment, three main interrelated factors need to be considered and studied. These are the biological, psychological and social factors (Gatchel, Peng, Peters, Fuchs & Turk, 2007; Bolton & Gillett, 2019; Zittel, Shawn & Wodarski, 2008) (Figure 1).

In the model, the biological factors comprise the genetic material, function and structure of the physiology, age and sex of a person, as well as the composition of the immune system response (Bolton & Gillett, 2019). Psychological factors related to behavioural issues such as coping skills, lifestyle choices, decision-making, beliefs and motivation determine the health status of an individual (Gatchel et al., 2007). Engel argues that for effective diagnosis, knowledge about these psychosocial factors is critical for treatment. These factors include cultural influences, family relationships, and social support (Havelka, Despot, & Lu, 2015).

The tenets of the bio-psychosocial model are consistent, to a large extent, with other knowledge systems on health including indigenous knowledge systems. The only departure has to do with the component of spirituality, which forms the basis of the conception of health and being in indigenous knowledge (White, 2015a). This notwithstanding, the model is relevant to this study as long as the psychosocial component could be extended to incorporate other external factors that influence the social, psychological and mental health of individuals (Davids et al., 2014).

Biological factors

Psychological factors

Health

Social factors

*Figure 1: The Biopsychosocial model of health and diseases (Levy-Storms, Chen, & Loukaitou-Sideris, 2018).*

#### *Indigenous Theories of Contagion Disease*

According to Green (1999) diseases such as AIDS and other sexually transmitted infections are usually understood within a framework or a body of health knowledge that is called indigenous contagion theory (ICT). The ICT is nonsupernaturalist in character in that it explains that one becomes ill because of exposure to infectious agents but not because of an avenging spirit or an ill-intended person's charm or misfortune in the form of sickness. The theory comprises four interrelated types of infections. These are the naturalistic infection, mystical contagion and environmental dangers (Green, 1999; Green, 2018; Murdock, 1980).

Naturalistic infection has been defined as an "invasion of the victim's body by harmful microorganisms, with particular but not exclusive references to



the germ theory of disease” (Murdock, 1980). According to Green, major (contagious) diseases are naturalistic (Green, 1999). These diseases are caused by disease-causing agents or organisms such as viruses, bacteria, fungi, protozoa and others.

Mystical contagion from the anthropological sense denotes a belief that people will become ill as a result of contact with a substance considered dangerous because it is impure. Africans considered impure are isolated from others until a ritual is performed. For instance, one source of pollution that may appear mystical is unfaithful behaviour on the part of a partner: if a partner commits adultery, he or she acquires a contaminating substance (infection) that could make his or her partner infected through sexual intercourse (Green, 1999).

The third component of the contagion theory is environmental dangers. It is based on the belief that elements in the physical environment can cause or spread illness. One expression of this is the idea that contagious illness can be carried in the air or be on the surface of material things such as sharp objects (blades, needles, syringes etc.) in the physical environment.

This theory has been critiqued in that it does not emphasise the importance of spirituality as one of the causes of ill-health. Thus, the theory emphasised natural, environmental and human behaviour as the causes of diseases. Despite this critique, the theory is still relevant to the present study since diseases and in particular, STIs can be acquired through natural means and behavioural means.

*Murdock's Ill-Health Theoretical Model*



The theory was propounded by George Peter Murdock in 1978. The theory describes how diseases are caused by two major factors; natural and supernatural causation (Murdock, 1978).

Natural causation deals with any theory, scientific or popular, which accounts for the impairment of health as a physiological consequence of some experience of the victim in a manner that would not seem unreasonable to modern medical science (Murdock, Wilson, & Frederick, 1978). These diseases are contracted as a result of infections (any invasion of the victim's body by harmful micro-organisms).

Unlike natural causation, supernatural causes ascribe disease aetiology to superhuman forces, such as evil spirits, ancestral spirits, witches, sorcerers, or the evil eye. Murdock further expanded this theory into three sub causations: mystical; animistic and magical. Mystical causation may be defined as any theory which accounts for the impairment of health as the automatic consequence of some act or experience of the victim mediated by some supposed impersonal causal relationship rather than by the intervention of a human or supernatural being. Fate (the ascription of illness to astrological influences, individual predestination, or personified ill-luck); contagion (coming into contact with some purportedly polluting object, substance, or person); and mystical retribution (acts in violation of some taboo of moral injunction when conceived as causing illness directly rather than through the mediation of an offended or supernatural being) are examples of mystical causation of illness. Magical causation may be defined as any theory which ascribes illness to the covert action of an envious, affronted or malicious human being who employs magical means to injure his victim. Two distinct categories of illness causation meet this definition. Finally, animistic

causation may be defined as any theory which ascribes the impairment of health to the behaviour of some personal agent; a soul, ghost, spirit or god.

This theory is relevant to the present study because it would guide the researcher to unveil how the study area conceptualises the causes of illness. From the African philosophy of medicine, spirituality plays a major role in disease causation and treatment (Omonzejele, 2008; Puchalski, 2004). Within the context of traditional knowledge, Africans believe that everything is interconnected: the natural, social and spiritual. Thus, the disease can be caused by a spiritual agent which will then physically manifest on the body of the individual. Many societies rely upon multiple causes of illness or disease and sticking to only one theory would be inefficient. This theory will, therefore, guide the study to understand how diseases are treated by the participants based on their perceived causes. Again, this theory was used by the study because it complements the other theories. For instance, the biopsychosocial model centres on the individual (client) and not the disease. Although the ICT centred on diseases causation, it failed to recognise spirituality as a means of disease causation. Hence, the use of the theories of illness by Murdock was necessary to complement the other two theories.

### **Conceptual Framework for the Study**

A conceptual framework embodies a philosophical perspective or a particular way of viewing knowledge that the researcher uses to inform a study (Clark & Ivankova, 2016). They are connected to the aims of the research. In conjunction with the use of theories, the study used a conceptual framework drawn from literature to strengthen the quality and rigour of the research. Thus, in

using a conceptual framework, the researcher gets a clear idea about how the study is being approached (Clark & Creswell, 2014). The conceptual framework of the study was drawn from the various literature that has been reviewed. Figure 2 is the conceptual framework of the study. It describes the treatment of gonorrhoea, syphilis and HIV and AIDS.

In many cases, the diagnosis of a disease is the first step in the treatment process (Ozioma & Chinwe, 2019). It talks about how the healer confirms the particular type of STIs the client is suffering from. This is done through divination: where the healer consults the spirit world (ancestors, lesser gods etc.) using cowry shells, throwing of bones, seeds, bones dice etc. (Adu-gyamfi, 2015; Chinsebu, 2016); an oral interview is conducted with the client (Mathibela, Potgieter, & Tshikalange, 2019). This is done to collect information on the various symptoms that the client may have exhibited or to generally describe how he or she feels (UNAIDS, 2006); medical reports of the client from hospitals, clinics etc. are sometimes also used as a means of diagnosis (Aniah, 2015; Davids et al., 2014). This mostly happens when the client has already gone to the hospital for screening but prefers traditional healing (Gyasi et al., 2013) and; the healer sometimes also depends on his or her experiential knowledge to diagnosis the illness (Bheenaveni, 2016). This is because the healer may have dealt with similar cases and has become familiar with these illnesses based on the symptoms that are exhibited by the client.

The cause of the disease is then established. This is done through consultation. The healer gets information from the spirit world to ascertain whether the disease is by a natural, spiritual or social cause. The natural cause could be as a result of unprotected sexual intercourse with an infected person,

sharing of infected sharp objects etc. This information is taken from the client through an interview (White, 2015b); it could be as a result of spiritual explanations such as witchcraft, sorcery, magic etc. (Addy, 2006) and; the social cause could be an attraction of punishment as a result of a violation of social norms, taboos, moral principles etc. (White, 2015).

After the cause of the disease has been established, the healer is guided by the spirit world or existing knowledge to administer the treatment to the client. The disease is treated based on its cause. If the disease is a result of a spiritual cause, then it is expected that the healer treats it from a spiritual perspective (Obinna, 2012). Similarly, when it is a result of natural and social causes, then it is treated accordingly. The treatment is given based on the biological characteristics such as gender, physical symptoms, immune function etc.; psychological factors include attitudes and beliefs of the individual, behaviour, coping skills etc.; and within the social context such as social support, cultural traditions, family background etc. (Gatchel, Peng, Peters, Fuchs, & Turk, 2007). The healer prescribes either a particular or a combination of herbs that would be used for the treatment. These prescriptions come with some specific instructions such as; how to prepare the herb (either through extraction, infusion, ashing or decoction); the dose and timeframe and; the method of administration (oral, rectal, nasal or smoking) depending on the type of disease or symptoms that are exhibited by the client (Davids et al., 2014). The instruction is given from the spirit world and sometimes based on previous knowledge (White, 2015).

The outcome of the treatment is confirmed by the disappearance of symptoms and thorough medical diagnosis (Aniah, 2015; Chinsembu, 2016; Stanifer et al., 2015; White, 2015). During and after treatment, clients react to the

medicines that they consume. The effects could be either favourable or unfavourable. When the result of the treatment is favourable, then it is perceived that there are therapeutic effects. On the other hand, if the result is not favourable, then it is concluded that there are adverse effects of the treatment (Yeboah, 2000).

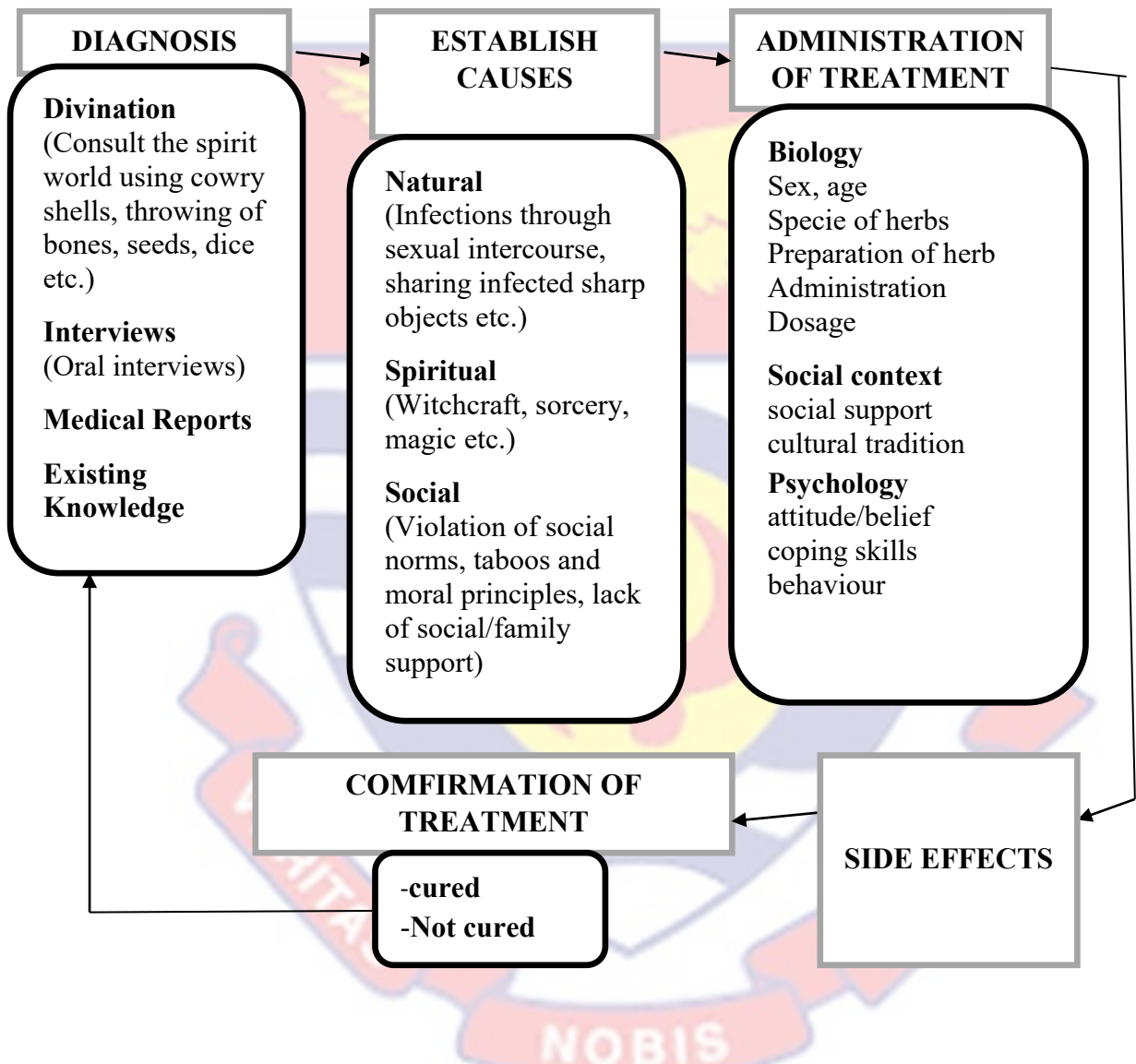


Figure 2: The Treatment of STIs (based on Ozioma & Chinwe, 2019; White, 2015; Engel, 1977; Green, 1999; Murdock, 1978)

CHAPTER THREE



## INDIGENOUS KNOWLEDGE AND HERBAL TREATMENT OF SEXUALLY TRANSMITTED INFECTIONS

### Introduction

This chapter reviews empirical literature on perceived herbal treatment of sexually transmitted infections. It focuses mainly on indigenous knowledge, general overview of sexually transmitted infection (STIs), indigenous knowledge and STIs treatment, the various species of herbs used to treat STIs, the beliefs about the herbal treatment of STIs, and the side effects of herbal treatment of STIs.

### Indigenous Knowledge

Indigenous Knowledge (IK) as defined by Kinggundu (2007) is also known as local knowledge which exists as a result of interactions with the ecosystem by identified members of a community in a geographical setting. It includes all fields of human endeavours such as health, trade, economic, political systems, environment, and agriculture but not limited to these fields. It is a knowledge system based on communal understanding and embedded and conditioned by the culture of the locality in consideration (Brush & Stabinsky 199; Ezeanya-Esiobu, 2019).

According to Greiner (1998), indigenous knowledge is a unique traditional knowledge that exists within and developed around particular conditions of indigenous men and women in a particular cultural setting which is acquired through daily experience. The knowledge is acquired and transmitted from the older generation to the younger generations through daily interactions

and community activities including social, cultural and religious endeavours (Tsobou, Mapongmetsem, & Van Damme, 2016).

Indigenous knowledge originates in the local setting and it is specifically adapted to the requirements of local people and conditions (Langill, 1999). It is considered to be cultural knowledge in its broadest sense, including all of the social, political, economic and spiritual aspects of a local way of life. It is used in resource management and the tools, techniques, practices and rules related to pastoralism, agriculture, agroforestry, water management and the gathering of wild food; classification systems for plants, animals, soils, water and weather; empirical knowledge about flora, fauna and inanimate resources and their practical uses; and the worldview or way the local group perceives its relationship to the natural world (Emery, 1996).

Indigenous Knowledge is integrated and driven from multiple sources such as traditional teachings, empirical observations and revelations handed down from generation to generation (Cajete, 2000). Similarly, language, symbols and family structure, as well as elements in the ecosystem, are interrelated. For example, the First Nation had a well-structured society in which everyone's role and the place was well defined (Ball, 2004). Also, the Aboriginal worldviews assume that all life forms are interconnected, that the survival of each life form is dependent on the survival of all others (Battiste, 2005; Smith, 2020).

One of the major challenges of indigenous knowledge is that, is it usually transferred to a person orally, and has been passed on for generations: from (grand) mother to daughter, from (grand) father to son. This oral tradition of knowledge is unfortunately not often written down and ends when a person dies. This means that in a situation where no one is interested to acquire such

knowledge, it becomes difficult to ensure its transferability (Van Onselen, 2011; Tsobou et al., 2016). Again, it has been described as primitive which has led to its neglect in many communities around the world, hence, contributing to the decline of indigenous knowledge systems, through lack of use and application (Makhubele, 2011). However, the knowledge system has been used to sustain the environment, and in specifics, life-supporting elements in the ecosystem including forest vegetation, water-bodies and land fertility (Esia-Donkoh, 2017).

### **Overview of Sexually Transmitted Infections**

Annually, millions of people are exposed to and possibly infected by a variety of STIs such as chlamydia, gonorrhoea, HIV/AIDS, herpes simplex virus and syphilis (Semenya & Potgieter, 2013). These infections can have a detrimental effect on the sexual health status of the individual if left untreated. Fortunately, some of them are curable; with the more prominent curable ones including amongst others gonorrhoea, syphilis, chlamydia and herpes simplex virus (Semenya & Potgieter, 2013).

It is estimated that more than 340 million new cases of curable STIs occur every year throughout the world among adults aged 15-49 years, with the second-largest proportion in sub-Saharan Africa (Sylverken et al., 2016). In most developing countries, STIs and their complications are among the top five diseases for which sexually active adults seek health care (WHO, 2001). In Ghana, like in many African countries, sexually transmitted infections (STIs) are a major public health problem. The most common STIs in Ghana are gonorrhoea, syphilis, Chlamydia, HIV, and genital herpes.

### **Indigenous Knowledge, Sexually Transmitted Infection and Treatment**

One of the philosophical tenets of indigenous knowledge is that nothing happens without a cause (Stewart-Harawira, 2005). As a result, there is a cause to every (specific) disease including sexually transmitted infections (STIs). This explains that there are causes of STIs too. In concept, since health relates to the tri-dimensional logic, so the causes of infections including STIs. That is, the cause of STIs can be discussed at the natural, social and spiritual dimensions, or within the constellations of these (Kusimba et al, 2003; Van Onselen, 2011). So, the cause could be as a result of pathogenic infection, behavioural practices and/or spiritual effects (Ozioma & Chinwe, 2019).

Treatment of infections and diseases based on indigenous knowledge is equally related to the dimensions of health or ill-health. Thus, the treatment of STIs follows the pathways of the casual factors (Ozioma & Chinwe, 2019; Van Onselen, 2011). Characteristically, the treatment of STIs, like any infections, is usually organo-spiritual; that is, the combination of organic substances such as herbs, and spiritual elements. This explains the reliance and dependence on the natural environment for medicinal plants for treatment (Van Onselen, 2011).

Despite the availability of Western medicine in treating sexually transmitted infections, practitioners of indigenous knowledge rely on the environment for the treatment of STIs (Ajibesin, Bala, & Umoh, 2011; Kamanja et al., 2015; Nazer et al., 2019; Tsobou et al., 2016). Available literature indicates that (combination of) herbal properties have been used to treat several STIs. These include gonorrhoea, syphilis and HIV and AIDS (Alexio & Precious, 2014; Chinsebu, 2016; Davids et al., 2014; Kamanja et al., 2015; Mathibela, Potgieter, & Tshikalange, 2019; Mbambala & Tshisikhawe, 2016; Nazer et al., 2019).



Critical to the treatment of STIs are the sources of knowledge about the treatment of diseases. The evidence available in the literature suggests that there are four main sources of knowledge generation and practice. These are ancestorised sources through dreams, visions and intuitive processes; divine impartation from the spirit world or a knowledgeable person to a non-practitioner; experiential sources owing to continuous practice and successful outcomes; and apprenticeship (De Wet et al., 2012; Gyasi et al., 2015, Welz, Emberger-Klein, & Menrad, 2018; Woodley, 2004). These inform the diagnosis, therapy administration and monitoring. For instance, according to Ozioma & Chinwe (2019), herbalists use medical reports and responses from clients through an interview to diagnose the type of disease that needs to be treated and the cause of the disease then needs to be ascertained to understand how to treat it. On the other hand, findings from the study of Van Onselen (2011) indicate that ascertaining the cause of the disease, usually, goes beyond the physical or behavioural, and could be traced spiritually. Lastly, Ozioma and Chinwe (2019) admit that after the cause of the disease is identified through the help of the ancestors or other spiritual objects, therapy is administered. The administration of herbs is one of the commonest traditional therapies as far as treatment of STIs is concerned (Mahomoodally, 2013).

### **Species of Herbs Used to Treat Sexually Transmitted Infections**

Extracts of herbal plants have been a source of therapy against sexually transmitted pathogens in some localities and contexts. For instance, active agents in Capparaceae have been used to treat STIs in India (Rajandeeep, Sman, & Sharma, 2013). Literature shows that several species of plants have been screened



for activity against STIs based on ethnopharmacological data and some of these screening programs have yielded potential results (Chinsembu, 2016; De Wet, Nzama, & Van Vuuren, 2012; Kamanja et al., 2015; Kambizi & Afolayan, 2001; Nazer et al., 2019; Novotna et al., 2020; Rajandeeep, Sman, & Sharma, 2013).

The use of medicinal plants for the treatment of STIs dates back at least to 1574 when ‘sarsaparilla’ (*Smilax officinalis*, family Liliaceae) was first introduced for the treatment of syphilis. According to some authors, the sarsaparilla was a better alternative to mercury, the standard medical treatment for syphilis during that period. Thus, in clinical studies, sarsaparilla was observed to be effective in about 90% of cases of acute syphilis and 50% chronic cases (Rajandeeep, Sman, & Sharma, 2013). Unfortunately, much scientific evidence in traditional systems of medicine for the treatment of STIs is inadequate in the available literature (Nazer et al., 2019).

**Table 1:** Species of medicinal herbs used to treat sexually transmitted infections

No.	Scientific Name	Family	Common Name(s)	Part of Plant
1.	<i>Biden pilosa</i>	Asteraceae	Black-jack	Leaf
2.	<i>Carica papaya</i>	Caricaceae	Papaya	Leaf, Root
3.	<i>Vachellia karroo</i>	Fabaceae	Sweet thorn	Root
4.	<i>Hypericum aethiopicum</i>	Hypericaceae	Saint John’s wort root	Root
5.	<i>Ximenia caffra</i>	Olacaceae	Mtundakula	Root
6.	<i>Trichilia degeana</i>	Meliaceae	Forest natal- mahogany	Whole plant

*Table 1 continued*

7.	<i>Sarcophyton</i>	Orchidaceae	Sarcophyton	Stem
	<i>Orchidaceae</i>			
8.	<i>Achyranthes aspera</i>	Amaranthaceae	Devil's horsewhip	Whole plant
9.	<i>Afzelia africana</i>	Fabaceae	African mahogany	Root
10.	<i>Alchornea laxiflora</i>	Euphorbiaceae	Lowveld bead-string	Stem
11.	<i>Allium sativum</i>	Liliaceae	Garlic	Stem
12.	<i>Aloe barbadensis</i>	Liliaceae	Gwarpatha	Leaves
13.	<i>Aloe ferox</i>	Asphodelaceae	Bitter aloe	Leaves
14.	<i>Alternanthera sessilis</i>	Amaranthaceae	Sessile joy weed	Leaves
15.	<i>Amaranthus spinosus</i>	Amaranthaceae	Spiny amaranth	Leaves, Stem
16.	<i>Amomum subulatum</i>	Zingiberaceae	Greater cardamom	Leaves, Seed
17.	<i>Bligha sapida</i>	Sapindaceae	Akee apple	Stem, bark
18.	<i>Boerhaavia diffusa</i>	Nyctaginaceae	Red spider ling	Leaf, Root
19.	<i>Bombax ceiba</i>	Bombaceae	Cotton tree	Leaf, Root
20.	<i>Callophyllum inophyllum</i>	Caricaceae	Beauty Leaf	Nuts, Leaves
21.	<i>Cassine transvaalensis</i>	Celasteraceae	Burt Davy	Roots
22.	<i>Centella asiatica</i>	Umbelliferae	Spade leaf	Leaves

*Table 1 continued*

23.	<i>Citrus aurantifolia</i>	Rutaceae	Lime	Root
24.	<i>Clerodendrum vuscosum</i>	Verbenaceae	Glory tree	Root
25.	<i>Crataeva religiosa</i>	Capparaceae	Spider tree	Bark
26.	<i>Curculigo recurvata</i>	Hypoxidaceae	Palm grass	Root
27.	<i>Dracaena arborea</i>	Agavaceae	Corn plant	Bark
28.	<i>Eupatorium odoratum</i>	Asteraceae	Jack in the bush	Leaves
29.	<i>Ficus asperfolia</i>	Moraceae	Sand paper tree	Stem, Leaves
30.	<i>Ficus exasperata</i>	Moraceae	Forest sandpaper	Leaves, roots
31.	<i>Foeniculum vulgare</i>	Apiaceae	Sweet fennel	Leaves, Seeds
32.	<i>Gloriosa superba</i>	Cochicaceae	Flame lily	Leaves
33.	<i>Heliotropicum indicum</i>	Boraginaceae	Indian heliotrope	Root
34.	<i>Hibiscus tiliaceus</i>	Malvaceae	Wild cotton tree	Bark
35.	<i>Hippeastrum breviflorum</i>	Amaryllidacea e	Naked lady	Bulbs
36.	<i>Ipomoea aquatica</i>	Convolvulacea e	Water spinach	Leaves
37.	<i>Jatropha curcas</i>	Euphorbaceae	Barbados nut	Leaves

*Table 1 continued*

38.	<i>Kagelia africana</i>	Bignoniaceae	Sausage tree	Leaves, RootStem
39.	<i>Landolphia owariensis</i>	Apocynaceae	Vine rubber	Leaves, stem
40.	<i>Manihot esculenta</i>	Euphorbiaceae	Cassava	Leaves
41.	<i>Maranthocloa cuspidata</i>	Marantaceae	Ablayo	Leaves
42.	<i>Mucuna pruriens</i>	Fabaceae	Monkey tamarind	Seeds
43.	<i>Musa sapentum</i>	Musaceae	Banana	Tuber
44.	<i>Nuclea latifolia</i>	Rubiaceae	African Peach	Roots
45.	<i>Ocimum basilicum</i>	Labiatae	French basil	Whole plant
46.	<i>Ocimum sanctum</i>	Labiatae	Holy basil	Leaves
47.	<i>Opuntia dillenii</i>	Cactaceae	Erect prickly pear	Stem, root
48.	<i>Palisota hirsute</i>	Commelinacea	Palisota hirsute	Leaves
49.	<i>Piper capense</i>	Piperaceae	Wild pepper	Bark
50.	<i>Pistia straliotes</i>	Aracaceae	Nile cabbage	Leaves
51.	<i>Plumeria acutifolia</i>	Apocynaceae	Frangipani	Leaves
52.	<i>Polianthus tuberosa</i>	Aloaceae	Tuberose	Flowers, Tuber
53.	<i>Rauwolfia vomitoria</i>	Apocynaceae	Poison devil's- pepper	Leaves, Bark
54.	<i>Sapindus mukorossi</i>	Sapindaceae	Soapberry	Leaves

*Table 1 continued*

55.	<i>Securidaca longepedunculata</i>	Polygalaceae	Violet tree	Root
56.	<i>Sida rhombifolia</i>	Malvaceae	Goose weed	Leaf
57.	<i>Solanum aculeastrum</i>	Solanaceae	Bitter-apple	Fruit
58.	<i>Solanum nigrum</i>	Solanaceae	Blackberry	Leaves
59.	<i>Solanum surattense</i>	Solanaceae	Wild Eggplant	Whole plant
60.	<i>Sonchus oleraceus</i>	Asteraceae	Sow thistle	Roots
61.	<i>Sporobolus pyramidalis</i>	Poaceae	Rat's tail grass	Roots
62.	<i>Swertia chirata</i>	Gentianaceae	Bitter Stick	Seeds
63.	<i>Syzygium cumine</i>	Myrtaceae	Java plum	Fruit, Leaves
64.	<i>Carissa edulis</i>	Apocynaceae	Climbing Numnum	Shrub root, fruit
65.	<i>Acacia tortilis</i> (Forssk)	Capparidaceae	Umbrella thorn	Shrub root, leaves
66.	<i>Psiadia arabica</i>	Compositae	Vatke	Roots
67.	<i>Sansevieria enhribergii</i>	Agavaceae	Blue Snake Plant	Roots, shoots
68.	<i>Rhamnus staddo</i>	Rhamnaceae	Staddo	Shrub, roots
69.	<i>Euclea divinorum</i>	Ebenaceae	Magic guarri	Roots
70.	<i>Capparis spinosa</i>	Capparidaceae	Caper bush	Shrub



*Table 1 continued*

71.	<i>Rhus natalensis</i> <i>Bernh.ex</i>	Anarcadiaceae	Natal rhus	Herb, roots, leaves
72.	<i>Acacia</i> <i>drepanolobium</i>	Fabaceae	Whistling thorn	Tree, bark
73.	<i>Grewia simi</i>	Tiliaceae	Falsa tree	Roots
74.	<i>Euphorbia</i> <i>candelabrum</i>	Euphorbiaceae	Ghost Euphorbia	Tree, branches
75.	<i>Harrisonia</i> <i>abyssinica</i>	Rutaceae	Baingou	Roots
76.	<i>Prunus africana</i>	Rosaceae	Cherry	Bark
77.	<i>Bridelia micrantha</i>	Euphorbiaceae	Coast Gold leaf	Bark
78.	<i>Sporobolus</i> <i>pyramidalis P.</i> <i>Beauv</i>	Poaceae	Rat's tail grass	Roots
79.	<i>Asparagus Setaceus</i>	Asparagaceae	Asparagus fern	Root
80.	<i>Sonchus oleraceus</i>	Asteraceae	Sow thistle	Roots
81.	<i>Aloe secundifolia</i>	Asphodelaceae	Aloe vera	Leaves
82.	<i>Clerodendrum</i> <i>myricoides</i>	Lamiaceae	Butterfly bush	Shoot
83.	<i>Bersama abyssinica</i>	Francoaceae	Winged bersama	Roots
84.	<i>Crassocephalum</i> <i>mannii</i>	Asteraceae	Crassocephalum	Root
85.	<i>Maerua triphylla</i>	Capparaceae	Small bead-bean	Shoot

*Table 1 continued*

86.	<i>Dalbergia lactea</i> <i>Vatke</i>	Leguminosae	Large-leaveclimbing	Roots
87.	<i>Olinia rochetiana</i>	Oliniaceae	Beye	Leaves, bark
88.	<i>Psiadia punctulata</i>	Asteraceae	Sticky Psiadia	Roots
89.	<i>Senna didymobotrya</i>	Fabaceae	Popcorn senna	Leaves, stem
90.	<i>Dichrostachys</i> <i>cinerea</i>	Fabaceae	Chinese lantern tree	Leaves, roots
91.	<i>Acacia</i>	Fabaceae	Arabic gumtree	Leaves
92.	<i>Adansonia digitata</i>	Malvaceae	Baobab	Roots, leaves
93.	<i>Ziziphus mauritiana</i>	Buckthorns	Chinese date	Leaves
94.	<i>Ficus sycomorus</i>	Mulberry family	Sycamore Fig	Stem
95.	<i>Moringa oleifera</i>	Moringaceae	Moringa	Leaves
96.	<i>Euclea divinorum</i>	Ebenaceae	Magic guarri	Roots, leave
97.	<i>Hypoxis</i> <i>hemerocallidea</i>	Hypoxidaceae	Yellow stars	Leave
98.	<i>Opuntia stricta</i> Haw.	Cactaceae	Prickly pear	Stem
99.	<i>Ozoroa engleri</i>	Anacardiaceae	Drooping Resin Tree	Leaves, root
100.	<i>Ranunculus</i> <i>multifidus</i>	Ranunculaceae	African buttercup	Whole plant

*Table 1 continued*

101.	<i>Sclerocarya birrea</i>	Anacardiaceae	Marula	Leaves, bark
102.	<i>Senecio serratuloides</i>	Asteraceae	Life root	Whole plant
103.	<i>Trichilia dregeana</i>	Meliaceae	Forest mahogany	Leaves
104.	<i>Ximenia caffra</i>	Olacaceae	Large sourplum	Root

Source: Nazer et al., 2019; Rajandeep et al., 2013

### **Beliefs About Herbal Treatment**

A belief is a firm thought that something is true, often based on revelation, and cardinal principle in indigenous knowledge. Belief is different from scientific knowledge that can be tested and verifiable only within the dimensions of life that align to the senses. Different people have diverse beliefs about the use of herbal plants for the treatment of STIs. These beliefs are influenced by personal, cultural, environmental and spiritual factors (Ngarivhume, Van'T Klooster, De Jong, & Van Der Westhuizen, 2015; White, 2015). According to Kusimba et al. (2003), many STD patients and healers have belief in the efficacy, safeness and the effectiveness of herbal medicines largely because they are revealed by the ancestors, and also, there are purely organic. For example, Mathibela et al. (2019) reported that herbal remedies used for the treatment of STIs by traditional health practitioners in the Blouberg, in South Africa, typically consists of decoctions from leaves and roots of various medicinal plants, administered as teas. Both clients and healers believe that because these healing therapies are given based on

the instructions of a celestial entity, they are safe and efficacious. Other studies confirm that the belief in herbal plants for such therapeutic purposes stems from the fact that they are gathered from natural forests (Novotna et al., 2020). In Africa, the belief that herbal properties are safe, effective and divine has been documented extensively (Busmann & Sharon, 2006; Okatch, Andrae-Marobela, Monyatsi, Ngwenya, & Muzila, 2013; Okello & Ssegawa, 2007; Ngarivhume, Van'T Klooster, De Jong, & Van Der Westhuizen, 2015; Simbo, 2010). For instance, Kambizi and Afolayan (2001) report that generally, the people of Guruve District of Zimbabwe still have a strong belief in the efficacy and success of herbal medicine. This is the result of the broad spectrum-antibacterial activity of some of the plants used for the treatment of STIs in the district.

#### **Side-Effects of Herbal Treatments.**

Any substance with a healing effect can generate unwanted or adverse side reactions. An adverse side effect of a treatment can be a harmful or troublesome reaction, due to intervention related to the use of a healing substance, which envisages risk from future administration and requires prevention or explicit treatment, or alteration of dose and method of administration, or withdrawal of the medical substance (Ozioma & Chinwe, 2019). Despite the widespread use of herbal medicines globally and their reported benefits, they are not completely harmless. In as much as medicinal herbs have established therapeutic effects, they may also have the potential to induce adverse effects if used incorrectly or in overdose (Fatima & Nayeem, 2016; Mensah, Komlaga, Forkuo, Firemong, Anning & Dickson, 2019).



According to Kamsu-Foguem & Foguem (2014), these adverse side effects from plants can harm the major systems of the human body such as the cardiovascular system, the digestive system, the endocrine system, the urinary system, the immune system, the muscular system, the nervous system, the reproductive system, and the respiratory system. However, the World Health Organisation (WHO) (2019) has earlier reported that many of these side effects of herbal medicines are often due to the lack of understanding of their preparation, appropriate use, and especially when used concurrently with orthodox or conventional medicines (see also Yeboah, 2000).

The other challenge with herbal therapies relates to the verification of the active ingredients and the proposed STIs they treat. It is not uncommon to see or hear herbalists announcing that a plant therapy could cure more than one infection without any bases. Studies have shown that though about three thousand herbal formulations have been documented as being efficacious for the treatment of specific conditions in Ghana out of which over six hundred are circulating as herbal medicine products, only a little above sixty have undergone preliminary phytochemical analysis and safety test at the Centre for Scientific Research into Plant Medicine at Mampong, the institution mandated by the government to undertake research and development of plant medicine, assess and approve the efficacy and long-term safety, and clinical monitoring of herbal medicine products in Ghana (Darko, 2009; Abbiw et al, 2002).



## CHAPTER FOUR

### METHODS OF DATA COLLECTION AND ANALYSIS

#### Introduction

The methods of data collection and analysis components are critical to research work. They highlight the underpinning research epistemology and design and provide the bases and rationale for the collection of the data, the appropriate tools for analysis and presentation of results (Kabir, 2016; Sönmez, 2013). This chapter presents the research philosophy and study design as well as the methods that were employed to collect the data for this study. It comprises the sources of data, study area, population, sampling procedure, data collection tool and data collection procedures. Data processing and analysis and ethical considerations were also presented in this chapter.

#### Research Philosophy and Study Design

The study was guided by the interpretivism research philosophy which forms the basis of qualitative research (Khan, 2012; Merriam, 2009). The study adopted this philosophy to reveal the multiple realities and varied contextual experiences which are best studied in the natural settings of participants (Pham, 2018; Sönmez, 2013). The focus of the design, guided by the phenomenological enquiry was also to enable the study to explore the socio-cultural realities of the participants (traditional health practitioners) about traditional health care delivery in general, and the treatment of STIs in particular (Creswell, 2013; Kumar, 2011; Maxwell, 2013; Smith, Flowers, & Larkin, 2009; Sönmez, 2013).

## Study Area

The Central region of Ghana was chosen for this study. The study setting comprises twenty (20) Metropolitan, Municipal and District Assemblies (MMDAs) that comprise one (1) Metropolitan, seven (7) Municipals and twelve (12) ordinary Districts (Ghana Statistical Service, 2010). Out of these MMDAs, two study areas were chosen. These are the Cape Coast Metropolis and the Mfantseman Municipal Assembly. The descriptions of the study area cover the geographic location and population size, climate and vegetation, economic activities and health-care delivery and utilisation.

### *Geographical Location and Population Size*

The Cape Coast Metropolis lies within latitudes  $5^{\circ}07'$  North and  $5^{\circ}20'$  North of the Equator and between longitudes  $1^{\circ}11'$  West and  $1^{\circ}41'$  West of the Greenwich Meridian. The Metropolis is bounded to the West by the Komenda-Edina-Eguarfo-Abrem Municipality, to the East by the Abura-Asebu-Kwamankese District, to the North by the Twifu/Hemang/Lower Denkyira District and to the South by the Gulf of Guinea. There are 84 communities in the Metropolis which covers an area of 122 square Kilometers (Cape Coast Metropolitan Assembly [CCMA], 2014). The population of the Cape Coast Metropolis is 169,894 representing 7.7 per cent of the region's total population. Males constitute 48.7 per cent and females represent 51.3 per cent (Ghana Statistical Service, 2014).

The Mfantseman Municipal lies within latitudes  $5^{\circ}$  to  $5^{\circ}20'$  north of the equator and longitudes  $0^{\circ}44'$  to  $1^{\circ}11'$  west of the Greenwich Meridian. It covers

an area of 612 square kilometres. The Municipal is bounded to the West and Northwest by Abura-Asebu-Kwamankese District, to the East by Ekumfi District and to the South by the Atlantic Ocean. The population of the Mfantseman Municipality is 144,332 which constitute 6.6 per cent of the population of the Central Region. Females consist of 55 per cent while males formed 45 per cent (Ghana Statistical Service, 2014).

**Table 2:** Distribution of Population by Districts and Sex

District/Municipal	Male Population	Female Population	Total Population
Cape Coast Metropolis	82,810	87,084	169,894
Mfantseman Municipal	89,025	107,538	196,563

**Source:** 2010 Population and Housing Census (PHC)

#### *Climate and Vegetation*

Mfantseman has an average temperature of 24<sup>0</sup>C and relative humidity of about 70 per cent, with double maximum rainfall with peaks in May-June and October. Annual total rainfall ranges between 90cm and 110cm in the coastal savannah areas and between 110cm and 160cm in the interior close to the margin of the forest zone (Ghana Statistical Service, 2014). Dry seasons usually occur from December to February and from July to September. The Cape Coast Metropolis experiences high temperatures throughout the year. The hottest months are February and March, just before the main rainy season, while the coolest months are June, July and August. The variability in climate in the

Metropolis is influenced more by rainfall than temperature. The Metropolis has a double maximal rainfall, with an annual rainfall total between 750 and 1,000mm (Ghana Statistical Service, 2014). The present vegetation of the Metropolis consists of shrubs of about 1.5 metres high, grasses and a few scattered trees. The original vegetation of dense scrub, which the rainfall supported, has been replaced by secondary vegetation as a result of clearing for farming, charcoal burning, bush fires and other human activities. Presently, trees are less dense in the area compared with the interior forest areas. The northern parts of the Metropolis are an exception to what has been described above. In these areas, secondary forests can be found and have survived mainly due to lower population densities and relatively little disturbance of the ecosystem.

#### *Economic Activities*

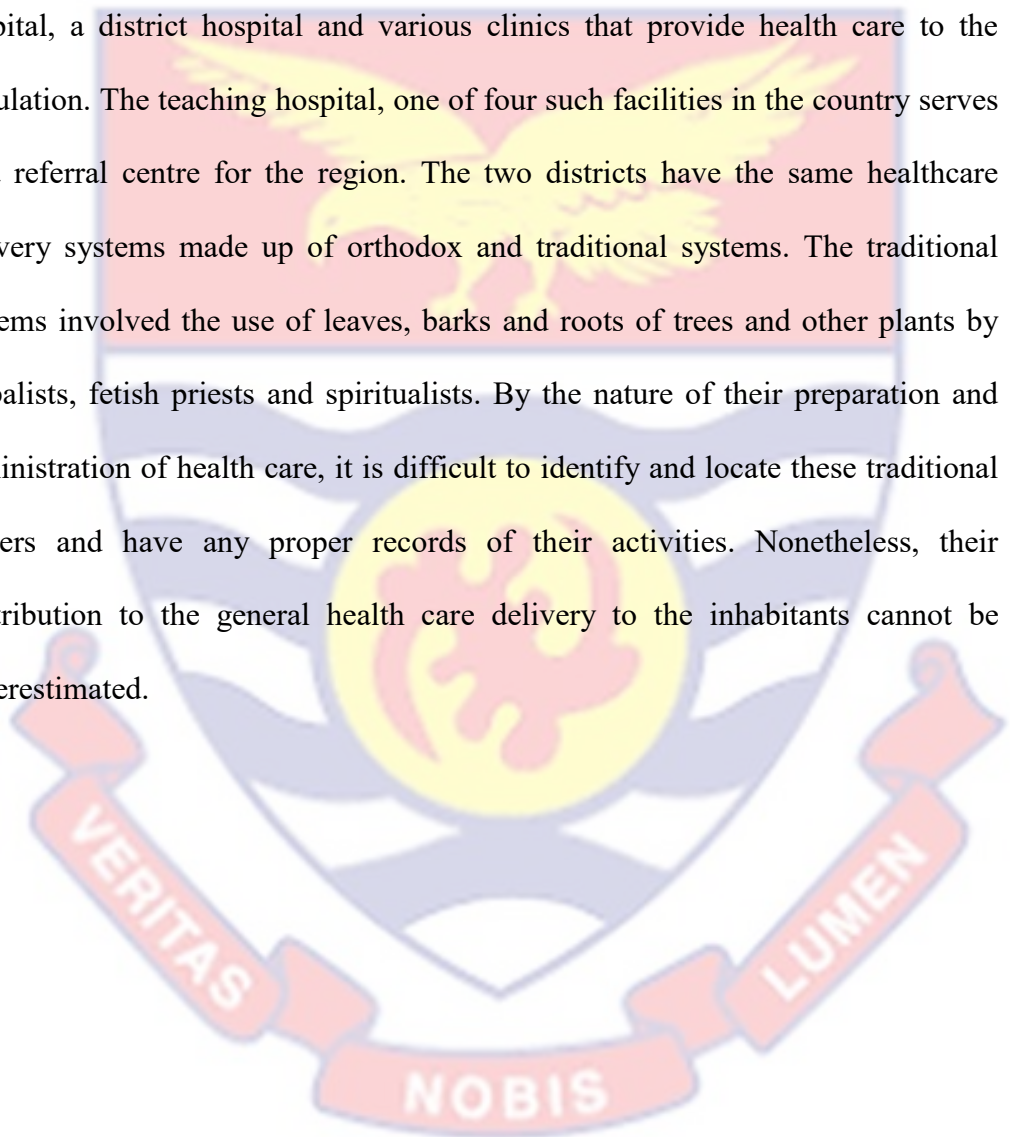
The Cape Coast Metropolis is principally a fishing community, with farming, trade and commerce, as well as tourism, being important activities. Of the employed population, about 32.5 per cent are engaged as service and sales workers, craft and related trades workers 23.6 per cent, professionals 13.2 per cent, skilled agricultural forestry and fishery workers 6.8 per cent.

The Mfantseman is also known for its fishing, farming and trading activities. Among the employed population, only 26.6 per cent are engaged as skilled agricultural, forestry and fishery workers, 27.3 per cent in service and sales, 22.9 per cent in craft and related trade, and 9.8 per cent are engaged as managers, professionals, and technicians.

#### *Healthcare Delivery and Utilisation*



The Mfantseman Municipality has a public hospital, public health facilities, community clinics, and several Community Health Planning and Services (CHPS) Compounds. In addition to the public health facilities, there are some private health facilities including hospitals, clinics and maternity homes. On the other hand, Cape Coast Metropolis is endowed with a teaching and regional hospital, a district hospital and various clinics that provide health care to the population. The teaching hospital, one of four such facilities in the country serves as a referral centre for the region. The two districts have the same healthcare delivery systems made up of orthodox and traditional systems. The traditional systems involved the use of leaves, barks and roots of trees and other plants by herbalists, fetish priests and spiritualists. By the nature of their preparation and administration of health care, it is difficult to identify and locate these traditional healers and have any proper records of their activities. Nonetheless, their contribution to the general health care delivery to the inhabitants cannot be underestimated.





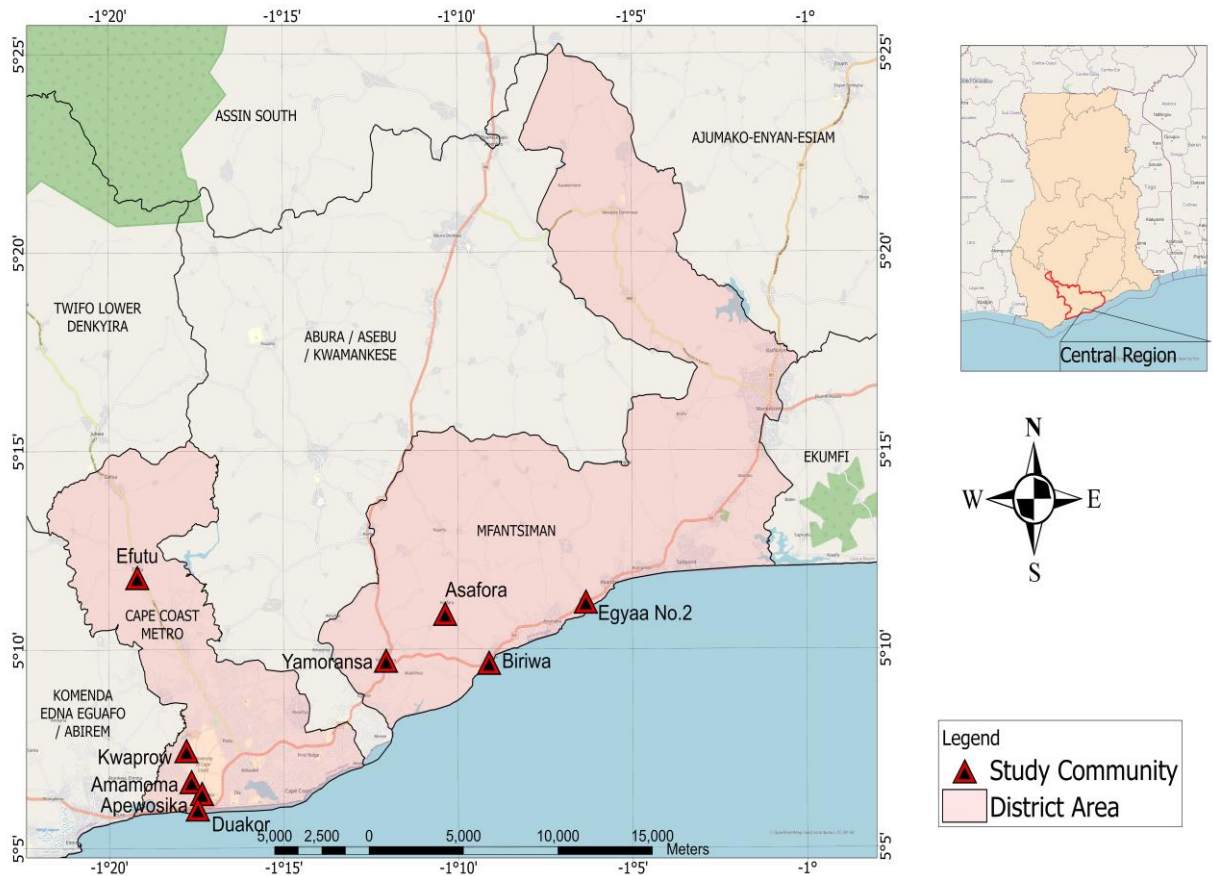


Figure 3: Map of the Study Area

Source: Department of Geography and Regional Planning, UCC (2021)

### Target Population

The population for this study was all recognised and accredited healthcare practitioners who operate traditional health facilities in the Central Region of Ghana. These comprise spiritual healers (combine herbs and spirits such as gods/ancestors) to treat common diseases and healers (use herbs only) to treat diseases.

### **Sources of Data**

The main source of data for the study was primary data. The data was collected from traditional healthcare practitioners. Other relevant literature relating to the topic of the research were used to complement the primary data collected. In addition, the camera and digital audio recorders were used to capture the data.

### **Selection Procedures**

Traditional health facilities are dotted along the coast and inland of the region. Efforts were made to select facilities from these two vegetation contexts. This was to ensure that participants from each vegetation are represented in the study. At the time of the data collection, the effects of the Covid-19 pandemic limited the movement of individuals globally and in particular, Ghana. Therefore, to reduce the potential risk of getting infected with Covid-19, the Cape Coast Metropolis and Mfantseman Municipality were selected. Despite AAK was considered, practitioners in the area did not meet the inclusion criteria. The main inclusion criterion was that the participant should operate a healthcare facility that is known to the community, accredited by the GHAFTRAM, and treats STIs including gonorrhoea, syphilis and HIV and AIDS. Dependent on the inclusion criteria, twenty (20) practitioners were selected comprising 10 in Cape Coast Metropolis and 10 in Mfantseman Municipal.

### **Data Collection Instrument**

The data were collected with an in-depth interview (IDI) guide. The study used the IDI guide because it sought to extract more detailed information or a

broad understanding of the subject (Showkat & Parveen, 2017). The guide was developed based on the research questions and the specific objectives of the study as well as the theories that underpinned the study. The instrument was also developed based on existing empirical literature.

The interview guide is divided into five sections. The first section focused on the socio-demographic characteristics of the participants. The second and third sections covered questions that relate to beliefs in the use of herbs and species of herbs used to treat STIs respectively. Section four dealt with issues about the processes involved in the herbal treatment of STIs.

### **Data Collection Procedures**

The data collection procedures comprised three different activities. These were training of field assistants who helped in data pre-testing of instruments as well as the main data collection. The second activity was the pretesting of the instrument and the last activity was the main fieldwork which took place at the study areas in the Central region.

#### *Training of Field Assistant*

One field assistant, a graduate student from the Department of Population and Health, University of Cape Coast, was recruited and trained to collect the data. The field assistant was selected because the researcher is not proficient in the local language (fante) of the study areas. He was selected because he has gained fieldwork experience and specifically in conducting interviews. A one-day training was used to train the field assistant so he could familiarise himself with the instrument. During the training, the objectives of the study were thoroughly

discussed under the major themes the instrument was structured. After this, role plays were conducted to further extend the general understanding of the issues in the instrument, and also to increase the correct and accurate translate of the questions from English to the local language (Fante).

#### *Pre-testing of the instrument*

The pre-testing of the instrument was conducted using three traditional healers at Amamoma, Akotokyir and Apewosika which are villages around the University of Cape Coast in five days. These communities were chosen on the assumption that they have features similar to the study area. These communities have traditional healers who perceived to have treated gonorrhoea, syphilis and HIV and AIDS. The communities are also rural in nature which confirms the findings of Van Onselen (2011) and Millar & Haverkort (2006) that people in rural areas are more dependent on the natural environment and use it to fulfil their basic needs such as collecting medicinal plants for health problems.

The purpose of the pretesting was for the field assistant to familiarise himself with the instrument and the local community protocol entry procedures. Through the exercise, mistakes and inappropriate use of words and concepts in the instrument were corrected. The pre-testing also enabled the researcher to prepare for possible challenges during the main fieldwork. For instance, one major challenge that was encountered during the pre-testing was interruptions during interviews. This was because the participants had to attend to clients who presented other conditions that needed immediate attention. This challenge guided the research team to book interviews with participants one week before the main fieldwork. The consent form administration was conducted within the



week before the fieldwork. A third party from the household of each healer, who could read and understand the English Language, explained the content of the consent form to each participant before written consent was given.

### *Fieldwork*

The fieldwork comprised three main activities. These were seeking permission from the gods and healers, interviewing, taking pictures of sample herbs and the traditional health facilities. The first activity was seeking permission from the spirits (gods, ancestors etc.). Approval from the spirits to conduct interviews was an important element of the data collection. In all the health facilities, before an interview was conducted, permission was sought from the gods and the traditional health practitioners. As part of the permission-seeking protocols, the shirt and shoes of the data collector and the healer were taken off, and a white or red cloth was wrapped around the waist before they entered the part of the facility where the gods are. This according to the healers symbolises respect and humility before the gods.

The researcher was then offered a 'kitchen stool' (a stool mostly used in many Ghanaian traditional kitchens) to sit on. Mostly, these stools were covered with either black or red cloth. These colours are used because they are considered sacred (Izuchukwu, 2018). A minimum of GHC 50.00 (about USD 10.00) and a maximum of GHC 100.00 (about USD 20.00) was donated to the gods to appreciate their willingness and consent for the interviews to be conducted. This was preceded by the pouring of libation with a local drink (*akpeteshie*) amidst chants and the singing of praises for about twenty minutes.



After the libation was the throwing the cowries on the floor or specially laid mat/skin of a sheep. The healer then interpreted the formation of the cowries which is believed to contain messages from the spirit world. In some instances (at least at two facilities), voices emanated from the location of the gods and the participants interpreted as the consent of the gods. The healers explained that there was the need to go through all these processes because they work hand-in-hand with the gods and they cannot do anything without the consent of the gods. Again, since their source of knowledge concerning healing and treatment came from the gods, it was important to seek their permission.

After the permission was sought, an in-depth interview (IDI) was conducted. The aim of the study was again explained to the participants. Oral consent was given at each facility. The interviews were conducted in the language with which the participants were comfortable (i.e., Fante and Ewe). Each interview lasted for about 40-45minutes.

The last part of the data collection focused on the taking of pictures of the herbs that are used for the treatment of sexually transmitted infection. The pictures were used to complement the data that was collected through the in-depth interview. Before the pictures were taken, permission was sought from the gods. Some of the healers, however, did not allow the use of the camera at the facility. The reason was that they did not want any third party to see such pictures even in the report (Novotna et al., 2020).

The data collection lasted for four months (August-November, 2020). In addition to the use of the digital audio recorder, handwritten notes were taken during the interview to record responses given by the participants.

## Data Processing and Analysis

The data processing and analysis took place in two parts. The first part of the data processing focused on the IDI data collected through interviews with the participants. Every audio recording was transcribed by the field assistant within a period of two days after each interview. This was to ensure easy remembrance of issues discussed with participants (Creswell, 2012; Sarantakos, 2005). After the transcription, there was proofreading to ensure there are no grammatical errors. After this, the transcript was sent to the traditional health practitioner for validation. To minimise errors, transcribed interviews were compared with notes taken during interviews and proofread while listening to the audio recordings. Interviews that were not conducted in English were transcribed into English. To ensure easy navigation during the reading and analysis, each interview was formatted with unique headings. For instance, the first practitioner that was interviewed in a community was labelled 'COMMUNITY-A PRACTITIONER 1'.

After data processing was data analysis. The transcribed data were then prepared for analysis by combining all the transcripts into one Microsoft word file. The data were then analysed using thematic analysis (Braun & Clarke, 2019). With this, the transcriptions were read and re-read to ensure familiarity with the data. First, a codebook was created. With this, preliminary codes were identified with corresponding occurrences from the responses of the participants. Codes were then collated and sorted based on their shared patterns to form subthemes and subsequently, main themes. Where needed, themes were combined, separated, or discarded to define a pattern of shared meaning projected by a central idea (Braun & Clarke, 2019). After this, the themes were refined and

defined by providing names and clear working definitions capturing the essence of each theme. Finally, descriptive narratives of the themes together with analytic narratives and data extracts were used to contextualise the analyses based on existing literature. Statements of the respondents were presented as quotes to substantiate responses given to questions posed during the interviews. A frequency table was, however, used to present the socio-demographic characteristics of the study participants as well as the species of herbs used to treat sexually transmitted infections.

For the analysis of species of herbs used to treat gonorrhoea, syphilis and HIV and AIDS, sample pictures and local names of herbs were collected sent to the Department of Crop Sciences, the University of Cape Coast to ascertain their local and scientific names. This was done to ensure that the study captured the correct local names and scientific names of the herbs were captured. The study used the Kew's plant list to further verify the scientific and family names of herbs "<http://www.theplantlist.org/>". The various parts of the herbs that were used for the treatment of STIs were also captured. The study also documented the mode of preparation and administration of each herbal plant that was identified as a potential remedy for gonorrhoea, syphilis and HIV and AIDS.

**Table 3:** Themes for Objective One: Beliefs about herbs

Major themes	Sub-themes
Spiritual	<ol style="list-style-type: none"> <li>1. Carriers of divinity</li> <li>2. Supernatural direction</li> </ol>
Natural	<ol style="list-style-type: none"> <li>1. Easy assimilation by human body</li> <li>2. Natural properties</li> </ol>
Socio-economic	<ol style="list-style-type: none"> <li>1. Readily available</li> <li>2. Commonly known</li> <li>3. Cultural acceptability</li> <li>4. Affordable and easily accessible</li> </ol>

**Source:** Fieldwork (2020)

**Table 4:** Themes for Objective Two: Species of herbs and how they are collected

Main theme	Sub-theme
How herbs are selected	<ol style="list-style-type: none"> <li>1. Entry protocol</li> <li>2. Ritual performance/selection</li> <li>3. Exist protocol</li> </ol>
Time for selecting herbs	<ol style="list-style-type: none"> <li>1. Early morning (before 5am)</li> <li>2. Anytime in the day</li> </ol>
Location for the selection	<ol style="list-style-type: none"> <li>1. Forest</li> <li>2. Backyard gardens</li> <li>3. Surrounding bushes</li> </ol>

**Source:** Fieldwork (2020)



**Table 5:** Themes for Objective three: treatment processes of STIs

Major themes	Sub-themes
Physical Processes	<ol style="list-style-type: none"> <li>1. Diagnosis                             <ul style="list-style-type: none"> <li>Oral interview</li> <li>Medical reports</li> <li>Experiential knowledge</li> </ul> </li> <li>2. Application of treatment                             <ul style="list-style-type: none"> <li>Type of herb</li> <li>Preparation method</li> <li>Application mode</li> <li>Dosage</li> <li>Timeframe</li> </ul> </li> <li>3. Review                             <ul style="list-style-type: none"> <li>Disappearance of symptoms</li> <li>Medical examination</li> </ul> </li> <li>4. Thanksgiving                             <ul style="list-style-type: none"> <li>In-cash (Unspecified)</li> <li>Kind (goat, fowl, sheep etc.)</li> </ul> </li> </ol>
Spiritual Processes	<ol style="list-style-type: none"> <li>1. Revelation about clients                             <ul style="list-style-type: none"> <li>Dreams, vision</li> </ul> </li> <li>2. Consulting the spirit world (divination)                             <ul style="list-style-type: none"> <li>Confirm cause of STIs</li> <li>For healing therapy</li> </ul> </li> <li>3. Rituals/sacrifices</li> </ol>

Source: Fieldwork, (2020)

### Ethical Considerations

Ethical clearance was obtained from the University of Cape Coast Institutional Review Board (Appendix B). An introductory letter was also taken from the Department of Population and Health, University of Cape Coast to introduce the research team to the communities where the data were collected.



Informed consent was obtained from participants before including them in the study. This was achieved by administering the informed consent process a week before the fieldwork. Again, before each interview was conducted, the informed consent process was repeated for the participants to indicate their willingness to participate in the study. They were made aware that they have the right to discontinue the interview process should they feel so, and not to react to questions or statements that will infringe upon their rights including that of privacy.

Steps were also taken to ensure that data collected from the participants were kept confidential (Jones & Bamford, 2004). For instance, data that were obtained during the data collection process was hidden from unauthorised access, and hence, ensuring confidentiality and privacy. Also, voice recordings were locked with a password-protected computer programme called 'LockApp'. Participants were informed that notes taken will be typed and the soft copies will be equally locked in 'LockApp'. The hard copies were, however, hidden from sight by locking them in a box. All authors whose works were used in this study were also duly cited to avoid plagiarism. To ensure anonymity, pseudonyms were used to represent participants identities instead of the real names of the participants and other characteristics that personally identify them.

Adherence to the Covid-19 preventive measures was ensured during the training of field assistants, the pretesting and fieldwork. During the training of the research assistant, the chairs were two meters apart from each other, the field assistant and the researcher were in face masks and hand sanitisers were frequently used. These were done to prevent a possible spread of the virus.

During the pretesting and the data collection, the researcher and field assistant put on their face masks and sanitized their hands. Every participant was

given a surgical face mask to wear and sanitized the hands using an alcohol-based hand sanitiser before the start of the interview. Since this study adopted one-on-one interviews which were recorded, social distancing was difficult, hence, wearing of face mask by both the interviewer and the interviewee was encouraged. In a situation where the interviewee did not agree to wear the mask for reasons such as he or she experienced difficulty in breathing, the interviewer was allowed to wear his own. The audio recorders and the camera were also sanitized after every interview to prevent any possible transmission through the touching of these devices

### **Challenges Encountered on the Field**

Three challenges were encountered during data collection. First and foremost, the study entailed extensive travelling across the study area. This was expensive in terms of money and time. This challenge was addressed by booking interviews dates with participants to avoid unnecessary travelling to save time and money.

Despite numerous calls to commit participants to appointments, some could not be found at the agreed time for interviews to be conducted. This led to the rescheduling of some appointments. This challenge was also addressed by the rescheduling of appointments to meet the demands of participants.

Some of the practitioners were unwilling to provide the names of the herbs they use to treat the diseases of interest and how the medicines were prepared. Some were of the view that the research team was coming to rob them of their knowledge, and others too said the preparation of the herbs involved some secrecy. Thus, when they provide the names of the species of herbs they

were using, it will be made available to the public and people will not visit their health facilities anymore. Although efforts were made by the researcher to make them understand that the study was only for academic purposes, some of them refused to provide the manes of the herbs. Due to ethical issues which give the right to the participant not to answer any question that he or she does not want to, the researcher proceeded with the interview.

### **Trustworthiness**

Ensuring the quality of qualitative research is hinged largely on the trustworthiness of the study (Korstjens & Moser, 2018). Trustworthiness, according to Korstjens and Moser (2018) entails credibility, transferability, dependability, and confirmability.

Credibility is concerned with the aspect of truth-value and it is measured with strategies including triangulation. In the current study, data triangulation was the main type of triangulation adopted. With this, findings from the various traditional health facilities were realized as communicating similar issues. They were, thus, presented homogenously without comparisons between the various sites.

Transferability has to do with a thick description. This involves the description of not just the experiences and behaviours of study participants, but also a detailed account given on the context in which the study was conducted. This ensures that the experiences and behaviours become meaningful to an outsider (Korstjens & Moser, 2018). In the current research, transferability was ensured by describing the study setting, providing the sample size and sampling procedure used, and describing the socio-demographics of the study participants.

Transferability was also ensured in the present study by providing the coding frames and the fact that samples of the interview guides used in collecting data from the participants have been provided as appendix.

Dependability and confirmability focus on audit trail (Korstjens & Moser, 2018). The audit trail is about transparency in the description of the research processes from the beginning of a study to the development and reporting of the results. In the current study, the audit trail was ensured by documenting the entire research process from the background to the conclusion section. Regarding analyses, coding frames have been provided. The interpretations of the data were also derived from the data collected and not based on the researcher's own preferences and viewpoints.

### **Limitations**

Data were collected qualitatively through in-depth interviews at the respective health facilities. There could have, therefore, been response bias on the part of the participants.

Purposive sampling procedure was adopted in selecting participants for the study. This sampling procedure introduced the possibility of selection bias on the part of the researcher and field assistant.

The results of the study were based on verbal reports given by the participants about events which occurred in the past. There was, therefore, the possibility of recall bias introduced in the data. This bias was, however, largely reduced by ensuring that probes were made on virtually all responses given by the participants for in-depth explanations to be given.



## CHAPTER FIVE

### RESULTS AND DISCUSSIONS

#### BELIEFS ASSOCIATED WITH HERBS AND SPECIES OF HERBS USED TO TREAT SEXUALLY TRANSMITTED INFECTIONS

##### **Introduction**

Herbal treatment by traditional health practitioners is usually connected to their beliefs. The beliefs encompass the tri-dimensionality of health, namely, the natural, social and spiritual dimensions. This chapter presents the results and discussion on beliefs associated with herbs and the species of herbs used to treat gonorrhoea, syphilis, and HIV and AIDS. The results are based on the interviews that were conducted with the traditional practitioners at the various traditional health facilities in the Central region.

##### **Results**

This section presents the results on the socio-demographic characteristics of participants, beliefs such as spiritual, economical and natural beliefs in the use of herbs. The various species of herbs that are used to treat sexually transmitted infections and how they (herbs) are selected are also presented.

##### **Socio-demographic characteristics of participants**

The study interviewed twenty married male traditional health practitioners. Most (11) of them were aged 50 years or above. Two of them were less than 40 years of age. Regarding their educational background, half of them had completed Junior High School while five each have had primary education



and no education. Again, more than half (11) indicated that they were Traditionalists while the rests were Christians (6) and Muslims (3).

Concerning their practice, it was found that half of the participants received training through apprenticeship while five inherited the practice from their fathers. There were, however, six of them who received the knowledge and skill to practice directly from the gods. Among the participants, most of them (15) used both herbs and spirits to treat sexually transmitted infections, while five used herbs only to treat such infections. All of them were registered members of the Ghana Federation of Traditional Medicine Practitioners Associations.

### **Belief in the use of herbs**

The participants presented three main reasons underpinning their belief in the use of herbs. The first reason is related to spiritual connotations. They explained that herbs are carriers of divinity for healing and other related purposes including human wellbeing and welfare. This view was expressed by all the participants irrespective of their mode of training or religious inclination. Some of them said:

*It is the almighty God who created them [herbs]. Do you even know that these herbs are spirits? They are spirits and very powerful. I prefer to use them because God directed us to use them to treat all diseases. [Healer, 45 years, Inland].*

*I believe that our ancestors used herbs in the olden days. When they died, they left such knowledge with us. When I was young, my father used herbs for almost everything because his ancestors told him to use them. He was a healer too and when*

*he died, I took over from him.* [Spiritual healer, 57 years, coastal]

The second underpinning reason was linked to the natural composition of herbs. Here, the participants indicated that herbs are natural, organic and easy to be assimilated by the human body which is equally natural and organic. Thus, according to them, the natural properties of herbs are easy to connect to the natural properties of the human body for consumption and healing. These were some of the explanations they gave:

*I have a strong belief that the herbs are safe because they are rich in natural ingredients compared to the hospital drugs which are made of synthetic chemicals that are not safe for our health.* [Healer, 40 years, inland]

*These herbs that you see [shows herbs to researcher] are natural. When you use them, there will be no side effects because they have no poisonous chemicals in them.* [Spiritual healer, 62 years]

The third reason that was mentioned is socio-economic related. Almost all of them believed that herbs are always available, communally known, easily accessible and affordable as well. They indicated that herbs are communally acceptable because the members of the community are aware and could attest to their use in the community.

*Herbs are not expensive at all. The only thing you need to do is to ask permission from the spirits before selecting them. There*

*are bushes and forests all over where you can easily go and pick these herbs.* [Healer, 56 years, inland, inland]

*We have been using herbs for many years now. This is not new to those who use it. Because they [clients] know these herbs work, when we give to them, they accept and use them.*

[Spiritual healer, 37 years]

The above results, generally, identify with the understanding of the basic belief in ontology, epistemology and the way of learning of indigenous knowledge, and the philosophy that drives the knowledge.

Three main perspectives could be drawn from the findings. The first relates to the nature of knowledge of herbs. It was evident that the knowledge of herbs is from the spirit world and handed unto those trained or called to use them for healing. This view is consistent with that of other authors (Darko, 2009; Davids et al., 2014; Seed, 2001; White, 2015a). For instance, in their study, Davids et al, (2014) and Darko (2009) underscored that among traditional healers in South Africa and Ghana respectively, herbs are life, and the life in herbs is from the spirit world which was the basis for their belief in the use of the herbs for healing. Thus, because herbs are spirits, there is an interconnection between them which makes it possible for herbs to serve as healing objects.

The conviction among practitioners that herbs are spirits and have life also agrees with the African philosophy. According to this philosophy, everything has life, is alive and is related to a source of energy. Thus, all resources have their perfect functions to contribute to the natural order (Simonelli, 2008).

The second perspective relates to the mode of learning. From the results, apart from the knowledge sourced from God and the ancestors, learning from an older practitioner (such as the father) that herbs have both spiritual and natural curative compositions serve as the basis for their belief (see also Welz, Emberger-Klein, & Menrad, 2018; Woodley, 2004).

The third is the view of familiarity with the use of herbs. This, to a large extent, has generated common knowledge based on empirical evidence that herbs are safer because they are more or less organic; cheaper compared to processed and conventional therapies; and easily accessible because they are both communally grown and culturally owned (Alor, 2015; Darko, 2009; Ngarivhume et al., 2015).

### **Species of herbs used to treat sexually transmitted infections**

A total of twenty-four (26) species of herbs were perceived by the participants as having the healing capacity to treat gonorrhoea (11), syphilis (10) and HIV and AIDS (5). Out of these 26 herbal species, three were identified to be commonly used with other herbs to treat these three sexually transmitted infections. These are the *grewia carpinifolia*, *cardiospermum grandifolia* and *aspilla africana* (Table 3).

It was also observed that some herbs were perceived to treat two of the sexually transmitted infections. For instance, *the aframomum melegueta*, *musanga cecropioides*, *grewia carpinifolia* and *phyllanthus discoideus* were used to treat either syphilis or gonorrhoea while *paullinia pinnata* was used by the participants to treat either Syphilis or HIV and AIDS.



**Table 6:** Species of herbs used to treat gonorrhoea, syphilis and HIV and AIDS

No.	Disease	Scientific name	Family	Local name
1	Gonorrhoea	<i>Capsicum annum</i>	Solanaceae	Misewain
2	Gonorrhoea, Syphilis	<i>Aframomum melegueta</i>	Zingiberaceae	Fam wisa/Efom wisa
3	Syphilis	<i>Cardiospermum grandifolia</i>	Sapindaceae	Nyanya/nyinya***
4	Syphilis, Gonorrhoea,	<i>Musanga cecropioides</i>	Urticaceae	Ote/odwuma
5	Syphilis, Gonorrhoea	<i>Grewia carpinifolia</i>	Tiliaceae	Ntanta***
6	Syphilis/gonorrhoea	<i>Phyllanthus discoideus</i>	Phyllanthaceae	Opepea/ Opepea
7	Syphilis	<i>Jatropha curcas</i>	Euphorbiaceae	Adaadze/adadjie
8	HIV	Unknown	Unknown	Kegyeku
9	HIV	<i>Azadirachta indica</i>	Meliaceae	Nim/nimsi/ayedua
10	HIV	<i>Pleiocarpa mutica</i>	Apocynaceae	Okanwene
11	HIV	<i>Zingiber officinale</i>	Zingiberaceae	Akakaduro (ginger)
12	Gonorrhoea	<i>Carica papaya</i>	Caricaceae	Broso (pawpaw)/borofere
13	Syphilis	Unknown	Unknow	Nkodwenakodwen



*Table 6 continued*

No.	Disease	Scientific name	Family	Local name
14	Gonorrhoea	<i>Cercestis afzelii</i>	Araceae	<i>Mmatatwene</i>
15	Gonorrhoea, HIV	<i>Unknown</i>	Unknown	<i>Kaprap</i>
16	Syphilis, HIV	<i>Paullinia pinnata</i>	Sapindaceae	<i>Twentini/tuatin/tu ntini</i>
17	Gonorrhoea	<i>Aspilla africana</i>	Asteraceae	<i>Nfofo/mfofo***</i>
18	Syphilis	<i>Unknown</i>	Unknown	<i>Mfimoano (white in color)</i>
19	Syphilis	<i>Musa sapientum</i>	Musaceae	<i>Mpoa/kwadu</i>
20	Gonorrhoea	<i>Syzygium aromaticum</i>	Myrtaceae	<i>Mbrego amba</i>
21	Gonorrhoea	<i>Unknown</i>	Unknown	<i>ejoojuru</i>
22	Rituals: drive away an evil spirit	<i>Spiropetalum heterophyllu</i>	Cannaraceae	<i>Ahoma bosom</i>
23	Rituals: drive away evil spirits	<i>Strophantus hispidus</i>	Apocynaceae	<i>Edu penyin</i>
24	Rituals: drive away an evil spirit	<i>Elaeis guineensis</i>	Arecaceae	<i>Abe</i>

Source: Fieldwork, (2020)

\*\*\*: Commonly used herbs for treating STIs

Most of these 24 species of herbs perceived to treat these three sexually transmitted infections have been recorded in the available literature. For instance, De Wet, Nzama, and Van Vuuren (2012) is noted to have listed *Carica papaya* herbs that are used to treat gonorrhoea and syphilis while Gbadamosi (2014) has also recorded similar herbs including *Aframomum melegueta* is perceived to be effective in treating syphilis and gonorrhoea. Boadu and Asase (2017) also reported that *Paullinia pinnata* is effective for treating HIV and AIDS. Other authors have reported that *zingiberaceae*, *sapindaceae* and *apocynaceae* are some of the commonest families of herb perceived to have curative elements for the treatment of sexually transmitted infections including gonorrhoea, syphilis and HIV and AIDS diseases in Nigeria (Ajibesin, Bala, & Umoh, 2011; Gbadamosi, 2014), Zambia (Chinsembu, 2016; Ndubani & Höjer, 1999), South Africa (De Wet et al., 2012; Mathibela et al., 2019), India (Hossan et al., 2010; Rajandeeep et al., 2013; Vermani & Garg, 2002), Zimbabwe (Kambizi & Afolayan, 2001), Iran (Nazer et al., 2019), Kenya (Njoroge & Bussmann, 2009) and Ghana (Wodah & Asase, 2012).

Similarly, the herbs that are commonly used by traditional healers in Africa to treat STIs include *cardiospermum grandifolia*, *grewia carpinifolia* and *aspilla africana* in Nigeria (Ajibesin, Bala, & Umoh, 2011; Gbadamosi, 2014), Ghana (Wodah & Asase, 2012), South Africa (De Wet et al., 2012; Mathibela et al., 2019), Zimbabwe (Kambizi & Afolayan, 2001), Kenya (Njoroge & Bussmann, 2009).

## Selection of herbs

The selection of herbs encompasses several requirements and activities. These include how the herbs are selected, the time for the selection of herbs, and the location appropriate for the selection of the herbs. This section presents and discusses these results from the participants.

### *How herbs are selected*

How to select herbs is key to herbal treatment in general. The accuracy in the selection process is critical. The results show that specific rituals preceded the selection of herbs by the participants. The rituals include praying, making of libation and walking naked. Items such as money (coins), cola nuts, salts, eggs and local drink (*akpeteshie*) are used for these rituals depending on the type of herbs to select. Some of the participants had these to say:

*Whenever I select my herbs, I pray over them. I tell the almighty God to bless the herbs and make them effective when I use them. [Healer, 47 years, inland]*

*I make sure I pour libation and sometimes crack some eggs before I pluck the herbs. [Spiritual healer, 57 years, coastal]*

*In some cases, I do go naked before selecting some particular herbs. For instance, there is a herb called *ahoma bosom*, I used it to drive evil spirits away. I usually go naked before selecting that herb. [Spiritual healer, 61 years, inland]*

Various reasons were given by the participants to explain why the rituals are conducted before the selection of the herbs. The following reasons were provided by some of the participants:

*We normally do this to appease the territorial spirits of that land. You cannot enter into somebody's territory and do what you want.* [Healer, 57 years, inland]

*When we perform these rituals, the spirits of our ancestors and the gods we work with fill the herbs and make them potent.*

[Spiritual healer, 40 years, coastal]

*When I put the salt or the coins down, it means I am asking permission from the gods to allow me to select the herbs I need to prepare medicine for my clients.* [Spiritual healer, 62 years, coastal]

The results point to three key issues for discussion. The first item to discuss is entry protocols. Every resource, according to the philosophy and ontology of indigenous knowledge, have divinity embedded in it. Thus, space, land, and vegetation cover are perceived to have spiritual entities that inhabit them, as well as other deities overseeing their sustenance (Simoneli, 2008), hence, the necessary rituals before the selection of herbs. A similar study conducted in Ghana by Wodah and Asase reported that similar entry protocols are observed to precede the selection of herbs (Wodah & Asase, 2012).

The second item is related to the belief that the existence and potency of the herbs depending on the direction of the spirit deities. This is the reason the ancestors and other deities are consulted to enhance the curative properties of the herbs for the purposes for which they were to be selected. In other studies, conducted in Africa, this perspective has been noted (Davids et al., 2014; Ozioma & Chinwe, 2019). This points to the tri-dimensional relationship that exists



between the spiritual, natural and social worlds in indigenous knowledge (Simoneli, 2008; Haverkort, Millar & Gonese, 2003).

The last point to discuss links to the dependence on the spirit world for knowledge. As indicated by Kaene (2004), knowledge is always perceived as accurate and complete if it emanates from the spirit deities because the highest level of knowledge lies within the domains of God, the gods and the ancestors (see Woodley, 2004).

#### *Time for the collection of herbs*

Time also plays a critical role in the collection of herbs. It is believed that the potency of herbs also depends on when they are collected. From the results, all the participants indicated that generally, the appropriate time for herb collection is early in the morning between the hours of 05:00 and 06:00 (GMT) before sunrise. The participants explained that the reason it is appropriate to collect herbs early in the morning is that the spirit deities bless the herbs in the early hours of the day. This, according to them, enables the safeness and potency of the herbs. These are how some of them put their views:

*I usually go around 5:00 am to select the herbs. I go early because that is when the herbs are fresh and powerful. The dews at dawn have fallen on them and have reactivated their active ingredients in them by that time. So that is a perfect time for me to go and pick them. [Healer, 61 years, inland]*

*You know, the gods bless everything early in the morning and that include herbs. So, the earlier you collect your herbs, the more potent they are. [Spiritual healer, 45 years, inland]*



However, some of the participants indicated that even though it is always appropriate to collect the herbs early in the morning, they argued that since illness could occur at any time, so herbs could also be collected at any time. Thus, to them, herbs collection is dependent on the time illness is reported by the clients. One of them made this statement:

*There are no specific times for selecting herbs, I go anytime in the day to select my herbs. You may have an emergent situation that will need immediate attention. [Spiritual herbalist, 59 years, coastal]*

This notwithstanding, the general view held by the participants was that it is not advisable to collect herbs in the afternoon or the evening. The reason being that during such times, the spirits that inhabit the herbs would be sleeping, and therefore, it would not be appropriate to disturb them by ways of selection and collection of herbs. These views were captured in the following quote:

*Normally when I am treating gonorrhoea, I do not select my herbs in the afternoon. Gonorrhoea is a painful disease so when you use a herb collected in the afternoon, the spirits in the herbs become hot and it will worsen the pain of the client. [Spiritual healer, 67 years, coastal]*

*...but after 6:00 pm you cannot go in for the herbs because around that time the herbs would be asleep. [Herbalist, 40 years, inland]*

The time of selecting medicinal herbs has been studied and discussed in earlier studies. Most of these studies, like the results of the present study, identified the relationship between the spiritual, natural and social worlds which

explains the interdependence and harmony among these worlds (Petrus & Bogopa, 2007). For instance, Simoneli argues that there is a perfect relationship and interdependence when there is respect and cordiality between and among these worlds (Simoneli, 2008).

In the scientific knowledge domain, it has been proven that active ingredients or chemical constituents in plants differ within the period of the day due to the interconversions of compounds (Williams, 2009). According to Okolie and Obasi, the time of the day for the collection of medicinal plants to obtain an optimum yield to achieve the desired outcome is critical (Okolie & Obasi, 1993, as cited in Boadu & Asase, 2017).

The present study also relates with social reasons to explain this issue. One such reason is the privacy of the herb collectors. The results of this study show that some of the herbs are to be collected when the collector is naked. Perhaps, to avoid any other person seeing the nakedness of the herb collector, it has to be in the early hours of the day when the members of the community are still asleep or away from the source of the herbs. The second reason could be time to attend to other needs. That is, if one gets his or her herbs early in the day, he or she could, afterwards, attend to other social calls and community activities which are usually conducted later than the time of herb harvesting.

#### *Location for the selection of herbs*

Places, where traditional practitioners select their herbs for the treatment of gonorrhoea, syphilis and HIV/AIDs, are important. Healers were interviewed to solicit information with regards to places where they select their herbs. The

data analysis indicated many of them selected herbs from forests, backyard gardens and surrounding bushes. The following are reports from some healers:

*I have a garden at the back of my building. I grow some herbs there so I do not have to be going to the forest always [Healer, 49 years, inland]*  
*I pick my herbs from the bushes around me most of the time. There are many potent herbs in there [bush]. Unless I cannot find a particular herb, I am looking for, then I have to travel to other villages to get them [Healer, 51 years, inland]*

*I go for the herbs from Abura-Dunkwa [A town in the Central region of Ghana]. There is a forest in that community. That is where I get most of the herbs, I use for treating gonorrhoea and syphilis [Spiritual healer, 43 years, inland].*

Many practitioners were of the view that due to the use of weedicides and pesticides that affect the effectiveness of the herbs, they prefer to select herbs from forests. They indicated that since individuals do not enter into forests to spray any herbs there, herbs that are collected from there are safe. This is what one had to say:

*When you collect your herbs from the forest, they are safe and not poisonous. Currently, due to the use of weedicides and pesticides in farming activities, many herbs are polluted with poisonous chemicals. But because people do not go and use weedicides in forests, herbs from such places are safe for use [Healer, 51 years, inland]*

However, two of the participants indicated that they sometimes buy from the market. They indicated that because many of the herbs they use are readily

available in the market, they needed not stress themselves to go deep into the forest to get them.

*Sometimes, I go to the market to get my herbs. Many market women sell some of these herbs that we use to treat STIs. So, in case I need a herb to combine with other herbs to treat a client, I just go to the market and buy it rather than travelling to a forest to get them*  
(Spiritual healer, 47 years, coastal)

The selection of herbs by traditional practitioners is important as any other activity. From the discussions with them, they selected herbs from forests, bushes and backyard gardens. Two participants sometimes buy their herbs from the market. They were of the view that because some of the herbs are difficult to come by, they sometimes get them from the market. A study by Davids et al. (2014) in South Africa reported similar findings that traditional health practitioners who use herbs for the management of HIV and related opportunistic infections, select their herbs from bushes. In Mexico, Smith-Oka (2012) maintained that medicinal plants were collected in home gardens, bushes and forested areas. Human interactions with the ecosystem pose threat to the survival of herbs used for medicinal purposes. For instance, the use of poisonous chemicals such as weedicides and pesticides compelled some practitioners to select their herbs from forests. This finding is consistent with Boadu and Asase (2017). The authors reported that about half of healers harvest their herbs from the forest because medicinal plants in forest areas are in their natural habitat, they are safe and effective than those exposed to external activities such as spraying, bush fires because of farming activities.



**CHAPTER SIX**  
**RESULTS AND DISCUSSIONS**  
**TREATMENT OF SEXUALLY TRANSMITTED INFECTIONS**

**Introduction**

The treatment of sexually transmitted infections involves several processes based on the direction from the spirit world and to some extent, the experience of the traditional practitioner. The processes could be physical, social, spiritually, or a combination of all these. This chapter presented the treatment of sexually transmitted infections and the perceived effects of herbal treatment of STIs.

**The treatment process of sexually transmitted infections**

The findings revealed also that there are seven main stages to the treatment of gonorrhoea, syphilis and HIV and AIDS. These are revelation about clients, diagnosis, establishing the cause of STIs, application of treatment therapy, review, confirmation of treatment and thanksgiving.

***Revelation from the spirit world about clients***

From the study, some of the participants indicated that they often get information about the client concerning his/her ailment before she/he comes to the facility. Such information is often given to the participants by the spirit world through dreams, visions, etc. Participants who used both spirits and herbs (i.e., spirit healers) mentioned this during the interviews. These are the expressions of some of them:



*I sometimes dream about my clients before they come here [facility], so when they come, I will just confirm from the gods. I remember one lady came to my facility. Before she arrived, the gods had already revealed her situation and health conditions to me about three days earlier when I was sleeping [Spiritual healer, 59 years, coastal]*

*I do see visions about my clients. Just recently I was just relaxing in my room and all of a sudden, I saw a client in the form of a vision and the gods told me she has been suffering from gonorrhoea and it's a spiritual attack and that when she comes, I should treat her [Spiritual herbalist, 61 years, inland]*

The information from the spirit world to the physical world shows the interconnection between these two worlds. This suggests that treatment within the African traditional medicine system starts with getting information from the spirit world concerning clients before they even show up physically at health facilities. This finding confirms the report of a previous study by Davids et al. (2014). The authors argued that diviners who used herbs to manage HIV and related opportunistic infections were prior informed by the ancestors through dreams. Such information could help practitioners put necessary measures in place before clients visit them.

### ***Diagnosis***

Three main ways were used by the participants to diagnose gonorrhoea, syphilis and HIV and AIDS. These are oral interviews, the use of medical reports and confirmation from the spirit world. The use of oral interviews such as questioning the clients about their illness was common among all the participants

irrespective of whether they combine herbs with spirits or use herbs only to treat clients. Participants were of the view they use observation to complement the oral interview. That is, when a client says he discharge white fluid when urinating, they allow clients to urinate for them to observe. In the case where there were sores around the genitalia, they also observed that after the oral interview. These are statements from some of the participants:

*...Based on what you tell me, I will what is wrong with you. For instance, clients who come here with gonorrhoea complain of a burning sensation when passing urine, and they also see white fluid coming out of their penis [Healer, 56 years, inland]*

*When you come to my facility, I will allow you to tell me what is wrong with you, as you are doing that, I also observe the symptoms you are showing and I will be able to tell [diagnose] whether it is gonorrhoea or HIV and AIDS. This was how my master did it [diagnosed] and I learned that from him [Spiritual healer, 51 years, inland]*

*After having the oral interview with you, I will also observe to see the symptoms. If you have sores on your penis or around your vagina, I will have to see that to confirm your oral interview [Healer, 49 years]*

Another way of diagnosing is by presenting medical reports at traditional healing facilities. Most of the participants relied on medical reports to identify gonorrhoea, syphilis and HIV and AIDS. Clients who had gone to the hospital before visiting traditional health facilities were asked by the practitioners to get their medical reports for easy confirmation of symptoms they present. Some of the participants had these to say:

*I ask clients who have been to the hospital before coming to my facility to come along with their medical reports. This usually helps to know the exact condition my patient is suffering from [Healer, 40 years, inland]*

*If you have gone to the hospital before coming here and you told me it is syphilis, gonorrhoea or HIV and AIDS, I will ask you to go and bring your medical report to show that as proof [Spiritual healer, 30 years, coastal].*

For spiritual healers, consulting the spirits world to diagnose sexually transmitted infection was the main diagnostic mechanism. The participants indicated that it is important for them to consult the gods to be sure that what a client is complaining about is the exact condition he or she is suffering from. They acknowledged the fact that since they work together with the gods and the spirits of their ancestors, it was necessary to consult them (spirits) to help them diagnose gonorrhoea, syphilis and HIV and AIDS. Some of them narrated that if they do not do that, they may not be able to treat the clients. One of them said this:

*When you come to my facility and you complain about a disease like syphilis, I will not prescribe herbs for you immediately, I will first consult the gods to confirm what you are complaining about. Just because you complain of headache does not mean I have to give you herbs for headache, NO, I have to consult the gods first for confirmation. I do that by throwing cowries on the sacred floor to receive information [Spiritual healer, 57 years, coastal]*

The results from the current study point to three approaches that guide the diagnosis of gonorrhoea, syphilis and HIV and AIDS. The first approach is the ways of knowing and the second is the reliance on orthodox medical reports. In an indigenous knowledge system, three main ways of knowing are observation, experience and revelation (Bagwana, 2015). Previous studies that have been conducted in South Africa (Mathibela, Potgieter, & Tshikalange, 2019), Nigeria (Ozioma & Chinwe, 2019) and India (Gurrapu, 2017) show similar findings. For instance, a study conducted in the Limpopo Province among traditional health practitioners reported that before commencing with treatment, health practitioners will first closely observe the condition of the patient, and then obtain the information about the symptoms (Semenya & Potgieter, 2013).

Another way of knowing in terms of diagnosing STIs is through experiential knowledge which is usually passed unto practitioners orally by their ancestors to diagnose diseases. Bheenaveni (2016) also confirmed this finding that healers sometimes depend on their native wisdom and experiential knowledge to diagnose the disease of patients.

The last means of knowing is by divine intuition/revelation. The use of ancestral spirits and gods was a common thing among spiritual healers. Unlike healers who depended solely on medical reports and symptoms of sexually transmitted infections, spiritual healers relied on the spirits (gods, ancestors) to diagnose gonorrhoea, syphilis and HIV and AIDS. In addition to interviews, the practitioners further consulted the spirit world to be sure that the right condition is diagnosed properly. This activity further validates the assertion that there is a linkage between the spiritual world and the physical world (Hart, 2010; White 2015). In a paper titled *the concept of diseases and health care in African*



*traditional religion in Ghana*, White was of the view that whereas healers depend on symptoms to treat disease, spiritual healers consult the gods for proper diagnosis and treatment (White, 2015b). This means that spiritual healers work together with their gods in the treatment process. According to Omonzejele (2008), consulting the spirit (divination) world is a way to access information that is normally beyond the reach of the rational mind hence, its importance in the healing process cannot be underrated. Divination, therefore, is at the same time a diagnostic, therapeutic, and prognostic tool (Darko, 2009).

The use of medical reports from hospitals and clinics indicated that both healers and spiritual healers relied on the technology of orthodox medicine in the process of treating their clients. This finding is in parallel with Aniah (2015), Davids et al. (2014) and Gyasi et al., (2013). Unlike spiritual healers who depend on gods and ancestors to diagnose diseases, healers mainly relied on medical diagnosis and symptoms to diagnose STIs.

### ***Establishing the causes of sexually transmitted infections***

From the results, the causes of gonorrhoea, syphilis and HIV and AIDS are classified as spiritual and social (sexual behaviour). The participants indicated that the spiritual cause of these STIs is through curses, revenge and jealousy. All the participants, irrespective of their religion and type of practice, confirmed that gonorrhoea, syphilis and HIV and AIDS are caused by spiritual means. These are the expressions of some of the participants:

*A man can put a curse in the form of gonorrhoea on the vagina of his girlfriend, if you sleep with his girlfriend, you will be infected. That is*



*through the spiritual realm but the disease will manifest naturally [Healer, 56 years, inland]*

*Sometimes too, it is spiritual. Some people can work against you in the spiritual realm for you to get babasokraman [syphilis]. Maybe you are going after another man's woman or girlfriend. So out of anger and jealousy, the person can 'buy' that disease for you spiritually [Spiritual healer, 62 years]*

The second cause according to the participants from the study is through social behavioural activities such as unprotected sexual intercourse with infected persons and having multiple sexual partners. Even though both healers believe in the spiritual causation of STIs, they also indicated that sexual behaviour is a major means of acquiring gonorrhoea, syphilis and HIV and AIDS. Some of the participants had these to say:

*These diseases are caused by germs and when you have sex with someone who is infected, the germs will be transferred into your system and you will also get the disease [Spiritual healer, 30 years, coastal]*

*Some people think they are smart in their ways...if you have many partners that you have sexual intercourse with, you can get any of these diseases. Sleeping with many people you do not know their health status can put you at risk of acquiring any of these diseases [Healer, 40 years, inland]*

However, one of the traditional practitioners introduced a different sexual behaviour that could lead to gonorrhoea infection. He mentioned that the public

hair from a woman can cause the disease during sexual intercourse when a piece of the hair enters the urethral of the man's penis. He narrated:

*When you have sex with a woman who has just shaven her pubic hair and your penis mistakenly hits where the hair is, when a piece of the hair enters your urethral, you will be infected with gonorrhoea*  
[Spiritual healer, 57 years, coastal]

These results indicate that indigenous epistemology arises from the interconnections between the human world and the spirit world. That is, the spiritual world influences the physical world (Hart, 2010). This was evident when practitioners revealed that gonorrhoea, syphilis and HIV and AIDS can be acquired through a spiritual means and the symptoms of the diseases will manifest physically. These findings have been reported elsewhere including Ghana and Nigeria (van Oselen, 2011; Ajibesin et. al, 2011). For instance, Westerlund argued in the book *African Indigenous Religion and Disease Causation: From Spiritual Beings to Living Human* that spiritual agents are responsible for disease among Nharo people in Botswana (Westerlund, 2006). Similarly, studies that were conducted on the use of traditional medicine to treat STIs also reported that people acquire the disease through spiritual or supernatural activities such as witchcraft, curses, black magic etc. (Adu-gyamfi, 2015; Ezeanya-Esiobu, 2019). These corroborate with Murdock's ill-health theory which explains the supernatural causation of diseases within the African traditional medicine system (Workneh et al., 2018).

The African indigenous medical philosophy does not attribute the origin of all illnesses to spiritual events. It also recognises the fact that human behaviour in the physical, as well as the social world, can cause several illnesses including

STIs. This relates to the epistemology of indigenous knowledge with regards to how diseases occur through social activities such as heterosexual activities; which contributes to about 80% of all HIV infections in Ghana (Gisselquist & Potterat, 2003) The conviction among practitioners that gonorrhoea, syphilis and HIV and AIDS has natural cause through human behaviour corroborates with the findings of other authors (Mathibela et al., 2019; Kahissay et al., 2017; Workneh et al., 2018). Also, the indigenous contagion theory of disease (Green, 1999) and Murdock's ill-health theory (Murdock, 1980) which underpinned this study posit those diseases are contracted as a result of infections caused by germs (germ theory), and the current study shares similar finding.

#### *The linkage between cause and treatment of STIs*

The treatment of a particular STI is dependent on its cause. Participants from the study had similar views that the cause of gonorrhoea, syphilis and HIV/AIDS will determine the type of treatment that will be provided. They emphasised that STIs that are perceived to be of spiritual origin are dealt with spiritually whereas physical/natural and behaviour-related treatments are provided to diseases that are perceived to be caused by natural and behavioural phenomena such as having unprotected sex with an infected person and having multiple sexual partners.

According to the participants, if an STI is a result of a spiritual attack and they try to treat it with only herbs, the person will not be healed. Thus, the practitioner needs to consult the gods first to help them deal with the spiritual aspect of the disease. For instance, some practitioners shared these views:

*If your gonorrhoea or syphilis is from a spiritual cause, then I would have to go into the spiritual realm and then perform all the necessary rituals before I can treat you. In such instances, it is the gods that will tell me what kind of rituals must be done before the treatment starts*  
[Spiritual healer, 42 years]

*Oh, just as I said, for every disease that comes to me, I have to first investigate it to see if it is spiritual or a 'normal' disease. So, if it is a spiritual disease like someone 'buying' gonorrhoea or syphilis for a woman in the spiritual realm, I will have to treat it as a spiritual case*  
[Spiritual healer, 67 years]

In dealing with the spiritual aspect, the participants mentioned that they perform rituals according to the dictates of the gods. These rituals may involve the killing of animals such as goats, fowls to drive away evil spirits before treatment with herbs. We also burn the roots of *Elaeis guineensis* to drive away evil spirits. Some of the participants shared their experiences:

*I will perform all the necessary rituals to purge the spirit that caused the disease before I think of adding the herbal treatment. However, if you come and your STI is the normal one with no spiritual causes, then I know the type of herbs to use to treat your disease* [Spiritual healer, 62 years]

*We buy animals such as goats, fowls and other ones that the spirit will tell us to buy. We will kill it and offer it to the gods, and they will drive the evil spirit that caused the disease. The thing is that for spiritual gonorrhoea for instance if you do not perform the rituals before the*



*treatment, the disease will not be treated. So, it is the gods that will tell you the kind of rituals that must be done and then the type of animal to be used for the ritual. But if it is not spiritual in nature, then I will not consult the gods so there will be no need for spiritual cleansing rituals*  
[Spiritual healer, 30 years, coastal]

*When you burn the roots of African oil palm (*Elaeis guineensis*), it is very effective in driving away evil spirits. I mostly use it when the disease (gonorrhoea, syphilis and HIV and AIDS) is a result of a spiritual attack* [Spiritual healer, 57 years, coastal]

The findings from the present study indicate that diseases that are perceived to be caused by spiritual forces or agents are treated from the spiritual realm and those that are of natural source (infection by bacteria or virus) are treated as such. This finding confirms Firth et al. (2015) Omonzejele (2008), Westerlund (2006) and White's, (2015) argument that rituals such as slaughtering of animals such as goat, fowl, sheep, pigs as sacrifices are performed to deal with the spiritual aspect of diseases that are caused by supernatural or spiritual forces. Sacrifices often, but not always, involve the use of animal blood. This is because “blood is the linking agent with invigorating machinery of the man-essence with the god-essence” (Omonzejele, 2008).

The roots of *Elaeis guineensis* (palm tree) were burnt by some practitioners to drive away evil spirits responsible for diseases. This is consistent with the findings of Westerlund (2006) and Ozioma and Chinwe (2019). Although diseases that were caused by spiritual forces had physical manifestations, practitioners indicated that there was a need to treat the spiritual aspect of the disease before any attempts are made to treat the physical aspect



(symptoms). This is because there are strong spiritual aspects to traditional African medicine, with a widespread belief among practitioners that psycho-spiritual aspects must be addressed before medical aspects (Mothibe & Sibanda, 2019). From the findings of the current study, practitioners revealed that STIs that are perceived to be of natural nature are treated with the application of herbs. For instance, Ozioma and Chinwe (2019) in their paper *Herbal Medicines in African Traditional Medicine* also reported similar findings. Thus, herbs are prescribed to the sick person whose illness is physical and that each prescription has specific instructions on how to prepare the herb, the dose, dosing regimen, and timeframe.

#### ***Application of treatment therapy***

One of the actions involved in the treatment process of gonorrhoea, syphilis and HIV and AIDS is the application of treatment therapy. For healers, once they have been able to diagnose the disease, they apply the necessary treatment that the client needs. But for those who combine herbs and spirits, receive from the spirit world information about the treatment. The therapy includes the type of herbs, the preparation method, administration, the dosage, and timeframe and prohibitions during the treatment.

**Table 7:** Treatment of Gonorrhoea, Syphilis and HIV and AIDS

No.	Disease	The local name of Plant herb	Part of the plant used	Method of preparation	Administration mode
1	Gonorrhoea	<i>Misewain</i>	Leaves	Boiling	Oral
2	Gonorrhoea, Syphilis	<i>Fam wisa/Efom wisa</i>	Leaves	Crushing	Insertion
3	Syphilis	<i>Nyanya/nyinya</i> ***	Leaves	Boiling, crushing	Oral
4	Syphilis, Gonorrhoea,	<i>Ote/odwuma</i>	Roots/stem	Crushing	Oral
5	Syphilis, Gonorrhoea	<i>Ntanta</i> ***	Leaves	Boiling, crushing	Oral, insertion
6	Syphilis/gonorrhoea	<i>Opepea/ Ɔpepea</i>	Roots	Grinding	Oral, insertion
7	Syphilis	<i>Adaadze/adadjie</i>	Roots	Crushing	Oral
8	HIV	<i>Kegyeku</i>	Leaves	Boiling	Oral, insertion
9	HIV	<i>Nim/nimsi/ayedua</i>	Leaves	Crushing	Oral
10	HIV	<i>Okanwene</i>	Leaves	Boiling	Oral

*Table 7 continued*

No.	Disease	The local name of Plant herb	Part of the plant used	Method of preparation	Administration mode
11	HIV	<i>Akakaduro (ginger)</i>	Roots	Boiling	Oral
12	Gonorrhoea	<i>Broso (pawpaw)/borofere</i>	Leave	Grinding	Oral
13	Syphilis	<i>Nkodwenakodwen or nkodweakodwe</i>	Roots	Boiling	Oral
14	Gonorrhoea	<i>Mmatatwene</i>	bark	Boiling	Oral
15	Gonorrhoea, HIV	<i>Kaprap</i>	Leaves	Grinding	Insertion/oral
16	Syphilis, HIV	<i>Twentini/tuatin/tuantini</i>	Roots	Grinding	Oral
17	Gonorrhoea	<i>Nfofo/mfofo***</i>	Leaves, Roots	Grinding/boiling	Oral
18	Syphilis	<i>Mfimoano (white in colour)</i>	Leaves	Boiling/grinding	Oral

*Table 7 continued*

No.	Disease	The local name of Plant herb	Part of the plant used	Method of preparation	Administration mode
19	Syphilis	<i>Mpoa/kwadu</i>	Leaves	Boiling	Oral
20	Gonorrhoea	<i>Mbrego amba</i>	Leaves	Boiling	Oral
21	Gonorrhoea	<i>ejoojuru</i>	Roots	Crushing	Oral
22	Rituals: drive away an evil spirit	<i>Ahoma bosom</i>	Bark	Crushing	Bath
23	Rituals: drive away evil spirits	<i>Edu penyin</i>	Leaves	Grinding	Bath
24	Rituals: drive away an evil spirit	<i>Abe</i>	Root	Burn	

Source: Fieldwork (2021)



### *Preparation methods*

The preparation of remedies was generally in the form of infusions or decoctions (by boiling or soaking in hot water); extracts or juice (by crushing the fresh plant parts with or without water); or powder (by grinding the dried plant parts). These methods were used by the participants to treat gonorrhoea, syphilis and HIV and AIDS. Some remedies were also prepared with a mixture of plants and ingredients, such as salt, ginger and palm wine.

*In many cases, we mix the herbs with other substances. For gonorrhoea, we normally mix the extracts of the herbs with palm wine to treat the patients. You know, the palm wine will make the client urinate frequently and as that happens, the bacteria in the body also comes out [Healer, 56 years, inland]*

*Sometimes too, you would have to add some other ingredients such as salt and ginger to the medicine to give it taste so that the client can drink it [Spiritual healer, 62 years]*

Boiling was the most common method that was used by the participants to treat all three infections. Some of them indicated that boiling was used because of its simplicity, and the method is perceived to be effective in killing 'dirt' (bacteria, germs etc.) that have been attached to the herbs. Some of them had these to say:

*I usually boil my herbs because this method is easy and that is what my master always did and so since it is the same herb that I am also using, I usually boil them [Spiritual healer, 59 years, coastal]*

*When you boil the herbs, the heat that comes from the fire will kill any dirt that the plant has. You know, we pick some of these herbs in the*

*forest and bushes, and they may be contaminated with dirt (germs, bacteria). So, when you boil it, it becomes clean and safe [Healer, 40 years, inland]*

#### *Administration mode*

The study revealed that oral administration and insertion were popularly used among the participants. These were used to administer treatment for all three STIs. In a few medications, plant materials were ground, moulded and used for vaginal insertion mainly for females who received treatment for gonorrhoea and syphilis. It was observed from the participants that female patients needed to insert herbal remedies into their vagina to kill any bacteria or germs in the vagina. Thus, practitioners considered the physiological makeup of clients to determine administration mode (Engel, 1977). The following were from some of the participants:

*Whether we are treating you for gonorrhoea, syphilis or HIV and AIDS, you will drink the herbal medicine. You have to drink the medicine so that it will enter into your system and clean every dirt inside. [Healer, 49 years]*

*I use the same herbs to treat a male or female client who is suffering from gonorrhoea or syphilis but for the female client, I will let you insert some of the herbs into your vagina to kill the bacteria in there. [Spiritual healer, 62 years]*

### *Dosage and timeframe*

The participants mentioned different items that they used to measure the dosage of herbal medicines administered to the clients. These include the beer and soft drinks (for instance, coca-cola, Fanta, etc) bottles as well as other containers including drinking glasses. On average a client needed to take between 50ml –165ml of concoction three times a day for two to three weeks to treat gonorrhoea and syphilis. However, generally, treatment lasted until symptoms of disease disappeared.

*When you are taking the 'nyanya' (Cardiospermum grandifolia) with palm wine, you will take a dosage equivalent to that of a beer glass; you will take half of it- one in the morning, afternoon and the evening for 7-14 days. [Spiritual healer, 67 years]*

*For a female client, you have to be inserting the moulded herbal remedy into the vagina for 7 days. After bathing in the morning, you insert and when you are going to sleep in the night, you insert another one. [Healer, 40 years, inland].*

### *Prohibitions during treatment*

There are restrictions or prohibitions attached to the treatment of STIs. For instance, during treatment, clients are prohibited from indulging in sexual intercourse and eating certain food items such as pork and pepper. The reasons being these diseases are contracted through unprotected sexual intercourse, therefore if the client continues to have sexual intercourse while receiving treatment, they will be re-infected. Some practitioners, especially those who work with the 'Tigare' god from the Northern region prohibited their clients from

eating pork meat while receiving treatment. The reason being that eating pork meat during treatment is prohibited by the ‘Tigare’ god.

*I tell them (clients) not to have sex with their partner when receiving treatment, but if they have already had sex, I will tell the man to inform the wife and bring her for treatment too [Spiritual healer, 46 years]*

*The Tigare god is one of the most powerful deities from the Northern region of Ghana. I usually use it for healing a lot. For instance, whether it is gonorrhoea, syphilis or any other treatment, you are prohibited from eating pork meat especially when treated by the Tigare god [Spiritual healer, 62 years]*

Results from the study indicated that the application of treatment is regarded as a physical and spiritual activity. Ozioma and Chinwe (2019) have earlier reported similar findings. In their paper, they conceptualised the application of herbs as a physical activity that involved the herbs that are used, how they are prepared and applied. Findings from this current study unveiled that the type of herbs that are used by practitioners are based on the training they have had and also on their experiential knowledge. For spiritual healers, the gods reveal to them the particular type of herb that should be used to treat STIs. Davids et al. (2014) have also stated that traditional health practitioners receive information from the spirit world about the type of herbs to use. This information comes with the part of the herbs to use and the preparation method.

Some common methods that were used in the current study include boiling, crushing, grinding of herbs. Boiling of herbs was predominantly used to prepare medicines meant to treat gonorrhoea and syphilis while a few used



grindings and crushing as methods to prepare herbs to treat gonorrhoea for female clients. These methods have also been reported by other authors (Okatch, Andrae-Marobela, Monyatsi, Ngwenya, & Muzila, 2013; Semenya et al., 2013). It can be argued that practitioners choose different methods of preparation for varied reasons and there were no standards in the methods of preparation of the herbal medicines and this lack of standardization is a major disadvantage of traditional medicine (Boadu & Asase, 2017).

The method of administration of remedies by practitioners was mainly oral which is in line with reports of previous studies. For instance, Semenya et al. (2013) in Limpopo Province reported that oral medication (96%) was the method of choice among practitioners who used medicinal plants used to manage sexually transmitted infections. Other studies in Africa, such as Kambizi and Afolayan (2001) as well as Chigora, Masocha, and Mutenheri, (2007), also noted that oral administration was the most common method used for the treatment of STIs. This preference might be because people find it easier and more convenient to administer remedied orally (Mathibela et al., 2019). Although oral administration was the commonest, practitioners were of the view that for female clients who received treatment for gonorrhoea and syphilis, the herbal remedy was given to them to insert it in their vagina. This finding further confirms the biopsychosocial model which guided the study (Engel, 1977). According to the model, for proper treatment of an individual, the physiological make-up of the patient must be considered. In this study, the practitioners considered the biological makeup of their clients in the sense that they recognised that their male and female patients have different sex organs. For example, practitioners stated that after their female patients have taken the remedies orally, there was a need for them to insert some



of the remedies into their vaginas. This was done because practitioners were of the view that the vagina has a broad surface area and there is a possibility that some of the bacteria may be hiding in there. The application of remedies by insertion will kill the bacteria that are hiding there. This means that no two clients are treated the same (Davids et al., 2014) and treatment, therefore, treatment is based on the biological make-up (sex) of the client.

The quantity of herbal remedies that a patient needed to consume before they are treated is part of the healing therapy. The use of beer bottles, tots, Fanta or Coca-Cola bottles was common among practitioners. Patients need to take on an average between 50ml-165ml of dosage of the remedy is dependent on the severity of the disease. When the disease is perceived to be severe, then the patients take a higher dosage and vice versa. In the current study, dosage varied from practitioner to practitioner. This finding agrees with Willcox and Bodeker (2004) and Ozioma and Chinwe (2019) that traditional healers use different measurements with regards to the quantity of medicine a client consumes. This inconsistency exists since traditional healers do not have an accepted and approved way of measuring their herbal medicines.

The timeframe for a patient to consume herbal remedies before cured is about two to three weeks. For all the STIs that were treated, practitioners were of the view that it took them on average two to three weeks. For HIV/AIDS, they were of the view that it is a 'tough' disease therefore it takes them a longer period to treat it. Generally, treatment lasts until the symptoms disappear. This finding is similar to Davids et al. (2014). In their paper *Traditional health practitioners' perceptions, herbal treatment and management of HIV and related opportunistic infections*, they reported that patients are professed treated once symptoms of the

disease disappeared. Semanya and Potgieter (2013) also reported a similar finding that the majority (97.3%) of the herbal remedies were administered orally three times a day until reproductive health ailments subsided. Generally, the timeframe for the use of herbal remedies is dependent on the disappearance of symptoms. However, it is important to know that despite the claims by traditional health practitioners of treating HIV, scientifically, there is no cure/treatment for this infection. The infection can only be managed by antiretroviral therapy.

During treatment, patients are expected to do what is needed to facilitate the healing process. Prohibitions had spiritual and social meanings. For the social meaning, it was linked to one of the causes of sexually transmitted infections. That is unprotected sexual intercourse with an infected person. For instance, some clients were instructed to avoid sexual intercourse during treatment to prevent reinfection and the infection of others. A previous study conducted in Kenya also reported a similar finding (Kusimba et al., 2003). In their study, they advised their STD patients to avoid sexual intercourse with their partners. They also asked their patients to inform their partners to go for treatment. The possible reason could be that their partners may also be infected.

Avoiding pork meat during the treatment of sexually transmitted infections also has a spiritual connotation. For example, because traditional health practitioners work with supernatural deities such as the Tigare god (often associated with the Islamic religion), clients are not allowed to consume pork meat because it is a taboo against the Islamic religion and could render the treatment process ineffective (Brondz, 2018).

### *Review*

It is common, within the scope of conventional healthcare for practitioners to regularly monitor the progress of treatment of patients. A similar practice is conducted by traditional healthcare practitioners. Participants from the study indicated that they usually ask their clients to come for a routine check-up to monitor the progress of treatment. They added that they also encourage family members of the clients to help monitor the progress of treatment. For instance, some of the participants noted that:

*When you give the medicine to the client, you need to constantly ask him about the progress of the treatment. So, I ask them to visit me when possible [Healer, 49 years]*

*We also use family members to serve as a link between the patient and us (healers). The family members monitor the patient to make sure he takes his medication on time and consistently and they also help us to monitor the progress of the treatment [Spiritual healer, 30 years, coastal]*

*I sometimes go to their (clients) house to check up on them and the progress of the treatment. That is when you stay close to me [Healer, 56 years, inland]*

Monitoring the progress of treatment was a common thing among practitioners. It was done at two levels; at the personal level and the family level. For clients who were closer to the community where the healer resides, the healer visited their homes to review the progress of the treatment. Sometimes too, clients also visit the healing centres themselves for the review. This was necessary as it helped patients and healers to address any challenges in the course of treatment.

This finding is congruent with Davids et al. (2014) where clients visited practitioners in a follow-up session to examine the progress of treatment. This points to the fact that regular check-ups or follow up is an important element in health care delivery.

For clients who were far away, traditional practitioners made use of family support in the treatment process. This approach confirms the postulation of the biopsychosocial model (Engel, 1977). The model states that the family forms part of what is termed as ‘therapy managing group’. It consists of family members, friends etc. who confer with the healer in the healing process (Baer, Singer, & Susser 20013; Janzen, 1978).

### ***Confirmation of treatment***

Generally, the obvious reason patients seek treatment is to be healed. Discussions with the participants indicate that when the symptoms of the disease have disappeared, then it means wholeness has been restored to the body. In some cases, they ask the clients to go to the hospital for medical examination. If after the medical examination there are no traces of any sexually transmitted infections, then the client is declared healed. A healer explained this in the following quote:

*After I have treated you, I will tell you to go to the hospital for further review to confirm that indeed you have been treated [Healer, 49 years]*

*Initially, the clients come here with symptoms such as pain during urination if it is gonorrhoea, so definitely when he or she is treated, the pains will not be there anymore, indicating that the client has been treated [Spiritual healer, 51 years, inland]*



In addition to using the disappearance of symptoms and medical reports to confirm that a client has been treated, the spiritual healers indicated that the gods/ancestors reveal to them through dreams. This was what one of them said:

*Sometimes too, the gods reveal to me in a dream that the client I have put on treatment is okay [treated] [Spiritual healer, 57 years, coastal]*

For a client to be declared treated, it means that there have been positive (therapeutic) effects of the treatment he or she received. There were varied ways practitioners depended on to determine whether a patient is treated or not. Three main dimensions could be drawn from how practitioners used were used to declare clients treated. These are physical, scientific and spiritual dimensions. From the physical perspective, the disappearance of symptoms was the commonest way practitioners used to declare patients treated. This was done through the mere observation of the physical symptoms. Once the symptoms of gonorrhoea, syphilis and HIV and AIDS are no more present, clients are declared treated and healed. All participants depended on these methods to confirm the efficacy of the treatment.

Some traditional practitioners who depended on scientific diagnostic tools to identify gonorrhoea, syphilis and HIV and AIDS, equally relied on it to confirm that clients were indeed treated by their gods and/or herbal remedies. A study by Davids and colleagues also reported similar findings (Davids et al., 2014). White (2015) in his paper 'The concept of diseases and health care in African traditional religion in Ghana' also argued that traditional healers in Kumasi relied on medical reports to declare their clients treated. However, it is important to know that scientifically, apart from syphilis and gonorrhoea, laboratory test cannot be used to confirm that a person has been cured of HIV



since the infection cannot be cured but only managed. It is therefore important that despite the fact that these healers depend on the spirit world and have strong believe in their healing powers, healers may need education on the scientific perspective on HIV.

From the spiritual dimension, some spiritual healers received information from the spirit world when patients were completely cured. The spirits (gods, ancestors etc.) they work with revealed to spiritual healers through dreams and visions to inform them that clients who were receiving treatment from them have been cured. This finding is similar to the report of Aniah (2015), as well as reports from elsewhere in Zambia (Chinsembu, 2016) and Tanzania (Stanifer et al., 2015).

### ***Thanksgiving***

Appreciating the works of practitioners and the gods or ancestors is part of the treatment process. The participants were of the view that when the gods/ancestors treat a client, it is required of the person to come back and show appreciation to the spirit entities. Traditional healers were of the view that their gifts of healing were given to them by God, the gods and the ancestors freely hence, when they treat a client, they do not charge the client any specific amount because their services are free but rather expects clients to show appreciation to the spirits for their healing powers. Some of them had this to say:

*Our work is free of charge, we do not charge any specific amount before we treat our clients. If the treatment involves buying certain items for rituals, then you would have to buy them yourself and bring them. If you cannot get them, then we will take the money from you and buy them for*

*you. This is different from demanding money from clients before treating them [Spiritual healer, 62 years]*

*This art of healing and treating is a gift from the Almighty God and our ancestors. If I did not pay for this gift, why should I sell it to people? I received it freely so it belongs to the community (people) [Healer, 47 years]*

The appreciation of the work of the almighty God, the gods, ancestors and traditional health practitioners come in the form of cash and or kind. Items such as goats, fowls, palm oil, sheep, *akpeteshie* [local gin] and palm wine are used to thank the gods and the healers for their healing power. These were the words of one of them:

*At my facility, people usually give money a lot. Other people also buy animals such as goats, sheep, fowls etc for the gods. We usually kill these animals and offer them to the gods. One of my gods loves to take palm oil, so people who are treated by that god also bring palm oil. Others bring *akpeteshie*. The gods drink a lot [laughs]...The fowl you saw there yesterday was a thanksgiving gift [Spiritual healer, 30 years, coastal].*

Findings from the present study indicated that practitioners rendered free service; the role is not for profit, hence, there is no fee. This explains the act of thanksgiving by clients. The idea of providing free services by traditional health practitioners to community members is deeply rooted in the philosophy of indigenous knowledge. That is, communalism is an important element of existence and is part of the indigenous belief (Shroff, 2011). Healing as a gift from the spirits is considered as a community property rather than an individual

property hence, this guided the views of traditional healers from this study to provide free services to clients and to expect thanksgiving in return.

In the process of thanksgiving, money and items such as domestic animals (goat, fowl, sheep etc.) were offered. This finding is similar to other studies that were conducted in Ghana (Adamtey, Oduro, & Ocloo, 2015; Krah et al., 2018). For example, Adamtey et.al. (2015) reported that healers received gifts of appreciation from some of the patients after they have been treated. Practitioners who were who received money refused to disclose the amount that they received. A possible reason might be that they do not want anyone to know the amount of money (income) they earn. Patients who did not come back to show appreciation were re-visited by the disease. One participant disclosed this in the present study.

### **Destiny, treatment and healing**

Destiny, according to the participants, influences the treatment of clients, and by extension, their healing. They were of the view that, in many cases, when clients come to their facility for treatment, they go the extra mile to inquire from the spirits if the client is destined to have such illness. In cases where the spirits reveal to them that it was their fate, and nothing could be done about it, they do not reveal that to the client but rather, they tell the client to go home and return later knowing very well that clients would have died before the date set.

*In some cases, the client's destiny is to acquire disease and die. When we inquire from the spirits and realise that, we tell them to go home and come back. But in an actual sense, we know that the client will die because there is nothing we could do about their illness [Spiritual healer, 62 years]*

*When you tell them that they will not be healed, it is as though you are wishing them misfortune. Some of them become devastated the moment they realise they will die. So, I will tell you to go home and back later*  
[Spiritual healer, 45 years]

Nonetheless, the participants were of the view that in cases where the spirits reveal to them that they (spirits) can change the destiny of the client, sacrifices and rituals have to be performed. One of them narrated this:

*Of course! There was a case where a man had a serious condition (foot root) and was brought here [facility]. He was going to die because of that but when I consulted the gods, they told me that they will be able to avert his death and they did. We performed some rituals (killing of white fowls and offering them as a sacrifice to the gods) and that was it.* [Spiritual healer, 57 years, coastal]

Destiny plays a role in the treatment of clients within the context of traditional healthcare. Two main perspectives on destiny with regards to healing and treatment emanated from the results. The first perspective has to do with changing the destiny of clients. That is, treating and healing them. In the process of treating clients, traditional practitioners petition the spirits to help them avert calamities such as diseases that their clients are suffering from. This finding reflects a perspective of destiny. That is, destiny although predetermined, can be altered for positive results (Dopamu, 2008). That is, traditional practitioners together with their gods are cable of changing what is bound to happen (destiny).

The other perspective has to do with a destiny that cannot be altered by traditional health practitioners and the spirits they work with. In the current study,



traditional healers expressed their views that sometimes they are not able to change the destiny of their clients and it could be that they (clients) were destined to have such illness and eventually die. This corroborates the report of Asante and Chai (2013).

However, it is also important to note that practitioners from the current study referred to sexually transmitted infections as “small diseases”. Thus, STIs are not perceived as severe diseases that might kill an individual instantly. They revealed that in cases where individuals have brought upon themselves misfortunes, in this case, diseases, they can deal with such incidents and protect their clients from any bad luck that is predestined to occur in the future.

#### **Side effects of herbal treatment of STIs**

Herbs that are used to treat clients could produce both favourable and adverse results. On the issue of side effects of the herbs used to treat the STIs, some of the participants reported that they have observed some of their clients experience some forms of discomfort during treatment. Frequent passing of urine, vomiting and diarrhoea were the common side effects that the participants mentioned. Some of them explained:

*When you take any of the medicine (Aspilla africana, Grewia carpinifolia and Cardiospermum grandifolia), especially those that we use palm wine to prepare, you will urinate a lot. That one is normal so when you complain that you urinate a lot, I will tell you it is normal.*  
[Spiritual healer, 45 years].

*...Also, one of my clients complained to me that he had diarrhoea after taking my medicine (Cercestis afzelii).* [Healer, 40 years, inland]



*Yes, I remember one lady came to my facility. When I prepare the herbs (*Musanga cecropioides*) for her and she drank them, she vomited. [Healer, 56 years, inland]*

When participants were asked what was the cause of the side effects, they provided some possible reasons. Some indicated that it could be as a result of increased dosage intake. Others were also of the view that probably the herbs were not properly cleaned during the preparation stage before they were administered. A few also attributed the side effects to clients not following the right instructions given to them. Some of them had these to say:

*I think the client did not do what I asked her to do. She might have taken the wrong dosage and this may have contributed to the side effect of the herbal medicine I gave to her [Healer, 56 years, inland]*

*The medicine [dosage] was too much for him. Sometimes too much of everything is bad. When you take the medicine more than the required amount that you are supposed to consume, you can also react [Healer, 40 years, inland]*

According to participants, patients who complained of adverse effects due to the treatment were given herbal remedies such as the mixture of cloves (*Syzygium aromaticum*) and/or ginger (*Zingiber officinale*) to manage the conditions. For instance, the dosage of the medicine was also reduced to manage diarrhoea and vomiting. However, patients who complained of frequent passing of urine were told that it was normal for them to experience that. Some practitioners narrated:

*When a client experiences diarrhoea or vomits during or after treatment, I prepare cloves (*Syzygium aromaticum*) and add ginger to*

*it. I asked her to take 165ml of the medicine three times a day. This is okay to deal with the side effects. [Healer 56 years, inland]*

*What I do is to reduce the dosage of the treatment. If the person takes two tots [50ml], then I will reduce it to one tot [25ml]. For those who also suffer from diarrhoea, I also reduce the dosage [Healer, 40 years, inland]*

The results presented suggest that since herbs are biological/natural, they react with the biological make-up of man (clients) and this, at times, lead to some forms of side effects. The findings of the current study are similar to available literature (Adjei, 2013; Davids et al. 2014; Garg, Abdel-Aziz, & Aeron, 2016; Lucas, 2010; Peltzer et al., 2008; Serrano, 2018). For instance, Adjei (2013) reported in his study that 48.8 per cent of the respondents have experienced adverse side effects with the use of herbal medicine. Other authors have equally argued that side effects of herbal therapy are dose-related, time-related, hygiene-related or failure of therapy (Ezekwesili-Ofili et al., 2014; Kamsu-Foguem & Foguem, 2014; Ozioma & Chinwe, 2019; Stickel, Patsenker, & Schuppan, 2005).

The findings of the current study corroborate with that of Kamsu-Foguem and Foguem (2014) in the sense that participants who reported that their clients complained of side effects of herbal treatment, attributed it to dosage and unhygienic nature of herbs. The findings are also parallel with the current study. They reported in their studies that microbial contamination probably due to poor observation of basic hygiene during preparations and overdosage may be the causes of adverse effects that were experienced by patients. This further confirms the report by Willcox and Bodeker (2004) that traditional healers do not have a standard measurement they use to determine the dosage of their herbal remedies.

No or inappropriate regulatory framework makes it easy for unhygienic conditions to prevail at traditional healthcare as these have adverse health conditions including nosocomial infections. Therefore, it is important to note that the appropriate dosage of herbal medicines might prevent or reduce its adverse effects. Traditional healers may also need to consider the fact that their medicines must be prepared under hygienic conditions which have the potential of minimising any adverse effects.



## CHAPTER SEVEN

### SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

#### Introduction

This chapter covers three main areas. The first area constitutes the summary of the study, focusing on the study objectives; the theoretical issues including the conceptual framework adopted for the study; the methods of data collection and analysis and key findings made. The second comprises the conclusions drawn from the findings, and finally, the recommendations suggested based on the conclusions.

#### Summary

This study focused on the herbal treatment of sexually transmitted infections in the Central Region of Ghana. The research specifically documented the various species of herbs used to treat gonorrhoea, syphilis and HIV and AIDS; analysed the beliefs about the use of herbs; and assessed the processes of herbal treatment of the STIs. The following research questions helped to achieve the main objective of the study:

1. What are the beliefs that underpin the use of herbs?
2. What are the various species of herbs used to treat gonorrhoea, syphilis and HIV/AIDS?
3. How do traditional practitioners treat persons with gonorrhoea, syphilis and HIV/AIDS?



The study was guided by the biopsychosocial model of health and illness, indigenous theories of contagion disease, and Murdock's ill-health theoretical model. A conceptual framework was developed to underpin the study (Treatment of STIs). The conceptual framework describes the various process traditional practitioners go through to treat their clients. These processes are diagnosis, the establishment of cause and the administration of therapy. The conceptual framework further considered the side effects of herbal treatment and the outcome of the treatment. The biopsychological model shaped the conceptual framework by considering the biology, psychological and social context in which treatment of gonorrhoea, syphilis and HIV and AIDS was administered.

The research adopted a qualitative approach to answer the research questions and to address the objectives. Traditional healers who have treated at least one STI in their career practised in a traditional health facility and have registered with the Ghana Federation of Traditional Medicine (GHATFRAM) were recruited. In all, 20 traditional practitioners were recruited from the study area using the in-depth interview guide. They comprised fifteen who were spiritual healers and ten who were healers. The youngest was aged 37 years while the oldest was 67 years. Five had ever attended school up to the basic level. Ten of them had completed Junior High School and five had no formal education. The data were analysed using thematic analysis.

Three major reasons were reported by this study that influenced the beliefs of traditional practitioners in the use of herbs. These were spiritual, natural and socio-economic reasons. The spiritual belief in the use of herbs has to do with the fact that traditional practitioners reported that herbs are life, and the life in herbs is from the spirit world was the basis for their belief in the use of the herbs

for healing. The natural reasons have to do with the natural composition of the herbs which they believe to be safe while the socio-economic deals with the easy accessibility to herbs for treatment, cheaper and commonly acceptable by community members.

Concerning the results on the species of herbs used to treat sexually transmitted infections, 24 species were documented. Eleven species of herbs were identified to be effective in treating gonorrhoea. Ten species were also documented to be effective in treating syphilis while five species were perceived effective for treating HIV and AIDS. Three species most commonly used by traditional healers in the study area were *grewia carpinifolia*, *cardiospermum grandifolia* and *aspilla africana*. Some herbs such as *afmomum melegueta*, *musanga cecropioides*, *grewia carpinifolia* and *phyllanthus discoideus* were used to treat either syphilis or gonorrhoea while *paullinia pinnata* was used by the participants to treat either Syphilis or HIV and AIDS.

The appropriate time for herb collection is early in the morning between the hours of 05:00 and 06:00 (GMT) before sunrise. Herbs were collected from forests, bushes and backyard gardens. Rituals were performed before selecting herbs. These were done to ask permission from the territorial spirits.

Traditional healers believed that STIs were caused through supernatural and social means (sexual behaviour). Sexually transmitted infections that were perceived to have been caused spiritually were treated spiritually. Across all the traditional healthcare facilities and among the participants, prayers comprising sacrifices and rituals were performed to treat spiritually-caused STIs. For sexually transmitted infections that were socially related (sexual activity), they were

regarded as a natural phenomenon and hence, they were treated without the need for any sacrifices and rituals to be performed.

The treatment of gonorrhoea, syphilis and HIV and AIDS involved seven processes. The first was revelation about clients. This is getting information through dreams and visions about the client concerning his/her ailment before she/he comes to the facility. The second process was the diagnosis. In this study, practitioners used oral interviews, medical reports and divination to diagnose STIs. The next process was to establish the cause of STIs. The causes of sexually transmitted infections were classified as spiritual and social (sexual behaviour). The fourth process was the application of treatment therapy. This was where practitioners administered treatment to clients based on the cause of STIs. The fifth process was review. This was done to monitor the progress of treatment of patients. The last but one process was the confirmation of treatment. Practitioners confirmed that clients were treated based on medical examination and the disappearance of symptoms of STIs. The final process was thanksgiving. This is where the works of practitioners and the gods or ancestors are appreciated. Although the services rendered by traditional practitioners are free, they received gifts in the form of cash and kind from clients who were treated.

### **Conclusion**

The most common family of herbs used to treat STIs in the study area are *Sapindaceae*, *Zingiberaceae* and *Apocynaceae*. These families are well known in the literature for their effectiveness in treating STIs. The selection of herbs is not just a mere event within African traditional medicine. This is because time, place

and how to select herbs have meanings and contribute to the treatment and healing process.

Spirituality plays a major role in disease causation within African traditional medicine. Traditional healers also recognised the fact that STIs can be caused through social means (having unprotected sex with an infected person, multiple sexual partners etc.). There is a linkage between the cause of diseases and their treatments.

Spiritual healing/treatment is done to restore wholeness to the spiritual being of clients and to protect them against any evil spirits responsible for causing diseases. Also, physical healing is important as it restored wholeness to the body of clients by curing symptoms of diseases. Even though the treatment of gonorrhoea, syphilis and HIV and AIDS has therapeutic effects, it also has side effects on clients.

### **Recommendations**

This section presented the recommendation for practice among traditional health practitioners in the study and also, areas for further research.

#### Recommendation for Practice

1. Traditional health practitioners in the study area are encouraged to observe hygienic conditions at their health facilities especially when it comes to the preparation of herbal remedies. The reason being that contamination of herbs was reported as a possible reason why some clients experienced side effects after taking herbal remedies.
2. The Ghana Health Service in collaboration with the Ghana Federation of Traditional Medicine Practitioners Associations (GHAFTRAM) may organize

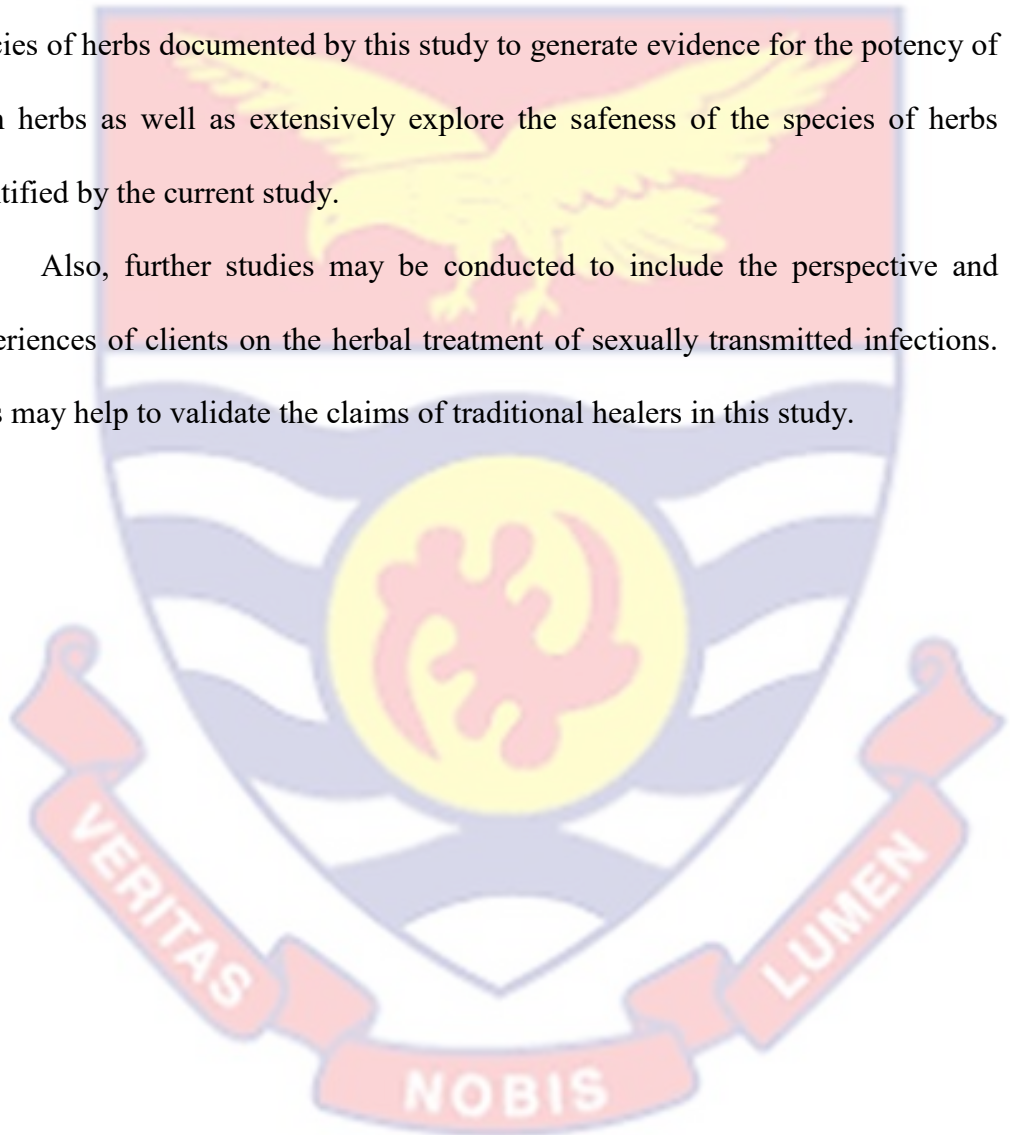


training workshops to build the capacity of traditional healers in areas of medicine dosage. This is because traditional health practitioners in the study area do not have a standardized dosing regime.

#### Suggestions for Further Research

Further studies may be conducted to examine the active ingredients in the species of herbs documented by this study to generate evidence for the potency of such herbs as well as extensively explore the safeness of the species of herbs identified by the current study.

Also, further studies may be conducted to include the perspective and experiences of clients on the herbal treatment of sexually transmitted infections. This may help to validate the claims of traditional healers in this study.



## REFERENCES

- Abukari, K. (2016). *Traditional Medicine and Healing among the Dagomba of Ghana*. (Master's thesis) UiT Norges arktiske universitet, Norway.
- Adamtey, R., Oduro, C., & Ocloo, K. (2015). The importance of traditional healers in the planning of rural healthcare delivery in Ghana: the case of bone-setting services in Loagri and Wungu. *Journal of Science and Technology (Ghana)*, 34(3), 55. <https://doi.org/10.4314/just.v34i3.7>
- Addy, M. E. (2006). Western Africa Network of Natural Products Research Scientists (WANNPRES), First Scientific Meeting August 15 -20, 2004. Accra, Ghana: A Conference Report. *African Journal Traditional, Complementary and Alternative Medicines*, 2(2), 177-205
- Adjei, B. (2013). Utilization of Traditional Herbal Medicine and Its Role in Health. *Unpublished thesis (MPhil), Kwame Nkrumah University of Science and Technology*.
- Adu-gyamfi, S. (2015). Spiritual and Indigenous Healing Practices Among the Asante People of Ghana: a Testimonial From Twenty-First Century Spiritual and Indigenous Healing Practices Among the Asante People of Ghana: a Testimonial From Twenty-First Century Practitioners and R. *Journal of Basic and Applied Research International*, 12(1), 39–50.
- Ajibesin, K. K., Bala, D. N., & Umoh, U. F. (2011). The use of medicinal plants to treat sexually transmitted infections in Nigeria: Ethnomedicinal survey of Niger Delta region. *International Journal of Green Pharmacy*, 5(3), 181–191. <https://doi.org/10.4103/0973-8258.91224>
- Ajima, O. G., & Ubana, E. U. (2018). The Concept of Health and Wholeness in Traditional African Religion and Social Medicine. *Arts and Social Sciences*

*Journal*, 09(04). <https://doi.org/10.4172/2151-6200.1000388>

- Alexio, M., & Precious, M. (2014). Understanding contributions of traditional healers to the prevention, care and support in the fight against HIV and AIDS Pandemic in Kariba, Zimbabwe. *International Journal of Sociology and Anthropology*, 6(4), 136–145. <https://doi.org/10.5897/ijsa2013.0513>
- Alor, S. K. (2015). *The use of traditional medicine among pregnant women in Agotime-Ziope district*. (Master's Thesis). University Of Ghana. <https://doi.org/10.1038/253004b0>
- Amoah, S. K. S., 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. *Brazilian Journal of Pharmacognosy*, 24, 89-95. doi:10.1590/0102-695X2014241405
- Ampomah, P., Yankson, K., Akotoye, H. K., & Ameyaw, E. O. (2017). *An ethnomedicinal survey of plants used to treat malaria in the Central Region of Ghana*. 6(2), 107–114.
- Aniah, P. (2015). The Contribution of Indigenous Health Care Providers to Health Care Delivery in Rural Ghana: An Exploratory Study of Bongo District. *Science Journal of Public Health*, 3(1), 20. <https://doi.org/10.11648/j.sjph.s.2015030101.14>
- Asante, M. K., & Chai, R. (2013). Nkrabea and Yuan in Akan and Chinese: Cultural Intersections and Communication Implications in an African and an Asian Society. *Journal of Black Studies*, 44(2), 119–136. <https://doi.org/10.1177/0021934713476891>
- Azu, M. N., Richter, S., & Aniteye, P. (2018). Ghanaian men living with sexual transmitted infections: knowledge and impact on treatment seeking

behaviour-a qualitative study. *African Journal of Reproductive Health*, 22(3), 24-32.

Baer, H. A., Singer, M., & Susser, I. (2013). *Medical anthropology and the world system: critical perspectives: critical perspectives*. UK: Praeger

Bagwana, P. (2015). Indigenous knowledge of traditional medicine: Answering the question of knowledge acquisition and transmission among the traditional health practitioners in Uganda. *Antropoloji*, 0(30), 13–32. [https://doi.org/10.1501/antro\\_0000000318](https://doi.org/10.1501/antro_0000000318)

Ball, J. (2004). As If Indigenous Knowledge Comm Mattered. *American Indian Quarterly*, 28, 454–479. Retrieved from <http://www.ecdip.org/docs/pdf/As If Indigenous Knowledge Comm Mattered.pdf>

Barimah, K. B. (2016). Traditional healers in Ghana: So near to the people, yet so far away from basic health care system. *Tang [Humanitas Medicine]*, 6(2), 9.1-9.6. <https://doi.org/10.5667/tang.2016.0004>

Berryman, D. R. (2019). Ontology, Epistemology, Methodology, and Methods: Information for Librarian Researchers. *Medical Reference Services Quarterly*, 38(3), 271–279. <https://doi.org/10.1080/02763869.2019.1623614>

Battiste, M. (2005). Post-colonial remedies for protecting indigenous knowledge and heritage. *Teaching as activism: Equity meets environmentalism*, 224-232.

Bekoe, E. O., Kretchy, I. A., Sarkodie, J. A., Okraku, A., Sasu, C., Adjei, D., & Twumasi, M. (2017). Ethnomedicinal survey of plants used for the management of hypertension sold in the makola market, Accra, Ghana. *European Journal of Medicinal Plants*, 5, 1-9.

Bheenaveni, D. R. (2016). Indigenous Healthcare: Determinants and Practices.



*IOSR Journal of Humanities and Social Science*, 21(08), 19–22.

<https://doi.org/10.9790/0837-2108111922>

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. <https://doi.org/10.1155/2017/3043061>

Bolton, D., & Gillett, G. (2019). The Biopsychosocial Model of Health and Disease. In *The Biopsychosocial Model of Health and Disease*. <https://doi.org/10.1007/978-3-030-11899-0>

Braun, V., & Clarke, V. (2019). Reflecting on reflexive thematic analysis. *Qualitative Research in Sport, Exercise and Health*, 11(4), 589–597. <https://doi.org/10.1080/2159676X.2019.1628806>

Bronz, I. (2018). Why Judaism and Islam Prohibit Eating Pork and Consuming Blood as a Food?. *Voice of the Publisher*, 4, 22-31.

Brush, S. B. & Stabinsky, D. (1996). *Valuing Local Knowledge*. Washington, D.C. Island Press.

Bussmann, R. W., & Sharon, D. (2006). Traditional medicinal plant use in Loja province, Southern Ecuador. *Journal of Ethnobiology and Ethnomedicine*, 2, 1–11. <https://doi.org/10.1186/1746-4269-2-44>

Cajete, G. (2000). *Native science: Natural laws of interdependence*. Santa Fe, NM: Clear Light Publishers.

Chigora, P., Masocha, R., & Mutenheri, F. (2007). The role of indigenous medicinal knowledge (IMK) in the treatment of ailments in rural Zimbabwe: the case of Mutirikwi communal lands. *Journal of sustainable development in Africa*, 9(2), 26-43.

- Chinsembu, K. C. (2016). Ethnobotanical study of medicinal flora utilised by traditional healers in the management of sexually transmitted infections in Sesheke District, Western Province, Zambia. *Brazilian Journal of Pharmacognosy*, 26(2), 268–274. <https://doi.org/10.1016/j.bjp.2015.07.030>
- Clark, V., & Ivankova, N. (2016). Why a guide to the field of mixed methods research?: Introducing a conceptual framework of the field. *Plano Clark, V., & Ivankova, N. Mixed methods research: A guide to the field*, 3-30.
- Creswell, J. (2012). *Reserach Design: Qualitative, Quantitative and Mixed Methods Approach*.
- Darko, I. (2009). *Ghanaian Indigenous Health Practices: The Use Of Herbs*. (Doctoral Dissertation). University of Toronto.
- Dauids, D., Blouws, T., Aboyade, O., Gibson, D., De Jong, J. T., Van't Klooster, C., & Hughes, G. (2014). Traditional health practitioners' perceptions, herbal treatment and management of HIV and related opportunistic infections. *Journal of Ethnobiology and Ethnomedicine*, 10, 77. <https://doi.org/10.1186/1746-4269-10-77>
- Davis, T. (2012). Traditional African Healing. *Medicine and Africa*, 12, 14-21
- De Wet, H., Nzama, V. N., & Van Vuuren, S. F. (2012). Medicinal plants used for the treatment of sexually transmitted infections by lay people in northern Maputaland, KwaZulu-Natal Province, South Africa. *South African Journal of Botany*, 78, 12–20. <https://doi.org/10.1016/j.sajb.2011.04.002>
- DeCarlo, M. (2018). *Conceptualization*. Retrieved from Scientific Inquiry in Social Work website:  
<https://scientificinquiryinsocialwork.pressbooks.com/chapter/9-2-conceptualization/#footnote-308-1>

- Dopamu, A. (2008). Predestination, destiny and faith in Yorubaland: Any meeting point? *Global Journal of Humanities*, 7(1&2), 37–39.
- Emery, A. R. (1996). *The participation of indigenous peoples and their knowledge in environmental assessment and development planning. Draft*. Centre for Traditional Knowledge, Ottawa, Canada.
- Engel, G. L. (1978). The biopsychosocial model and the education of health professionals. *Annals of the New York Academy of Sciences*, 310(1), 169-181.
- Esia-Donkoh, K. (2017). *Fishing Communities' adaptation to climate change at Komenda-Edina-Eguafo-Abrem Municipality, Ghana* (Doctoral Dissertation). University for Developmental Studies
- Ezeanya-Esiobu, C. (2019). Indigenous Knowledge and Public Education in Africa. In *Frontiers in African Business Research*. Retrieved from <https://doi.org/10.2307/j.ctvh9vwzb.16>
- Ezekwesili-Ofili, J. O., Onyemelukwe, N., Agwaga, P., & Orji, I. (2014). The bioload and aflatoxin content of herbal medicines from selected states in nigeria. *African J Ournal Traditional Complement Alternative Medicine*, 11, 143–147.
- Fatima, N., & Nayeem, N. (2016). Toxic effects as a result of herbal medicine intake. *Toxicology-New Aspects to This Scientific Conundrum*. London, UK: InTech Open, 193-207.
- Firth, K., Smith, K., Sakallaris, B. R., Bellanti, D. M., Crawford, C., & Avant, K. C. (2015). Healing, a Concept Analysis. *Global Advances in Health and Medicine*, 4(6), 44–50. <https://doi.org/10.7453/gahmj.2015.056>
- Fokunang, C. N., Ndikum, V., Tabi, O. Y., Jiofack, R. B., Ngameni, B., Guedje,

- N. M., ... Kamsu-Kom. (2011). Traditional medicine: Past, present and future research and development prospects and integration in the national health system of Cameroon. *African Journal of Traditional, Complementary and Alternative Medicines*, 8(3), 284–295.  
<https://doi.org/10.4314/ajtcam.v8i3.65276>
- Garg, N., Abdel-Aziz, S. M., & Aeron, A. (2016). Microbes in food and health. *Microbes in Food and Health*, 1–362. <https://doi.org/10.1007/978-3-319-25277-3>
- Gatchel, R. J., Peng, Y. B., Peters, M. L., Fuchs, P. N., & Turk, D. C. (2007). The Biopsychosocial Approach to Chronic Pain: Scientific Advances and Future Directions. *Psychological Bulletin*, 133(4), 581–624.  
<https://doi.org/10.1037/0033-2909.133.4.581>
- Gbadamosi, I. T. (2014). Ethnobotanical Survey of Plants Used for the Treatment and Management of Sexually Transmitted Infections in Ibadan, Nigeria. *Ethnobotany Research and Applications*, 12, 659.  
<https://doi.org/10.17348/era.12.0.659-669>
- Ghana AIDS Commission [GAC]. (2010). *Ghana Country AIDS Progress Report*. Report for January 2010–December 2011. Accra
- Ghana Statistical Services. (2014). *2010 Population and Housing Census: National Analytical Report*. Accra: Government of Ghana
- Gisselquist, D., & Potterat, J. J. (2003). Heterosexual transmission of HIV in Africa: An empiric estimate. *International Journal of STD and AIDS*, 14(3), 162–173. <https://doi.org/10.1258/095646203762869160>
- Green, E. C. (1999). *Indigenous theories of contagious disease*. UK: Rowman Altamira.



- Grenier, L. (1998). *Working with indigenous knowledge: A guide for researchers*. Canada: International Development Research Centre.
- Gurrapu, S. (2017). Medicinal Plants Used By Traditional Medicine Practitioners In The Management Of HIV/AIDS-Related Diseases In Tribal Areas Of Adilabad District, Telangana Region. *The American Journal of Science and Medical Research*, 2(1), 239–245. <https://doi.org/10.17812/ajsmr21011>
- Gyasi, R. M., Asante, F., Segbefia, A. Y., Abass, K., Mensah, C. M., Siaw, L. P., ... Adjei, P. O. W. (2015). Does spatial location matter? Traditional therapy utilisation among the general population in a Ghanaian rural and urban setting. *Complementary Therapies in Medicine*, 23(3), 439–450. <https://doi.org/10.1016/j.ctim.2015.04.007>
- 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*, 3(2), 40–49. <https://doi.org/10.5539/gjhs.v3n2p40>
- Gyasi, R. M., Tagoe-Darko, E., & Mensah, C. M. (2013). Use of Traditional Medicine by HIV/AIDS Patients in Kumasi Metropolis, Ghana: A Cross-sectional Survey. *American International Journal of Contemporary Research*, 3(4), 117–129. Retrieved from [www.ajjcrnet.com](http://www.ajjcrnet.com)
- Gyasi, R., Mensah, C., & Siaw, L. (2015). Predictors of Traditional Medicines Utilisation in the Ghanaian Health Care Practice: Interrogating the Ashanti Situation. *Journal of community health*. 40. 314-325. 10.1007/s10900-014-9937-4.
- Gyekye, K. (1987). *An essay on African philosophical thought: The African conceptual scheme*. Cambridge: Cambridge University Press.

- Hart, M. (2010). Indigenous Worldviews, Knowledge, and Research: The Development of an Indigenous Research Paradigm. *Journal of Indigenous Voices In Social Work*, (1), 1–16.  
<https://doi.org/http://hdl.handle.net/10125/12527>
- Havelka, M., Despot, J., & Lu, D. (2015). Biopsychosocial Model – The Integrated Approach to Health and Disease. *Collegium Anthropologicum*, 33(August), 303–310.
- Haverkort, B., Millar, D., & Gonesse, C. (2003). Knowledge and belief systems in sub-Saharan Africa. *Ancient roots, new shoots: Endogenous development in practice*, 7, 137-180.
- Hossan, M. S., Hanif, A., Agarwala, B., Sarwar, M. S., Karim, M., Taufiq-Ur-Rahman, M., ... Rahmatullah, M. (2010). Traditional use of medicinal plants in Bangladesh to treat urinary tract infections and sexually transmitted infections. *Ethnobotany Research and Applications*, 8(January 2015), 61–74.  
<https://doi.org/10.17348/era.8.0.61-74>
- Islam, V. S., & Moreau, A. (2009). Traditional healers in preventing HIV/AIDS: Roles and Scopes. *Bulletin of Medicus Mundi International*, 8, 1–6.
- Janzen, J. M. (1987). Therapy management: concept, reality, process. *Medical anthropology quarterly*, 1(1), 68-84.
- Jones, A. M. & Bamford, B. (2004). The other face of research governance. *BMJ* 329(7460): 280-281.
- Kabir, S. (2016). Methods of data collection. *Basic Guidelines for Research*, 6, 201–276.
- Kaene, J. (2004). *Knowledge Systems and Rural Livelihoods: Incorporating Climate Forecasts into Farm Management in Niger, West Africa*. Thesis

Submitted in Partial Satisfaction of the Requirements for the Degree of Masters of Science in International Agricultural Development in the Office of Graduate Studies, University of California, USA.  
<https://doi.org/10.1017/CBO9781107415324.004>

- Kahissay, M. H., Fenta, T. G., & Boon, H. (2017). Beliefs and perception of ill-health causation: A socio-cultural qualitative study in rural North-Eastern Ethiopia. *BMC Public Health*, *17*(1), 1–10. <https://doi.org/10.1186/s12889-017-4052-y>
- Kamanja, I. T., Mbaria, J. M., Gathumbi, P. K., Mbaabu, M., Lanyasunya, A., Gakuya, D. W., ... Kiama, S. G. (2015). Medicinal plants used in the management of sexually transmitted infections by the Samburu community, Kenya. *International Journal of Pharmaceutical Research*, *7*(2), 44–52.
- Kambizi, L., & Afolayan, A. J. (2001). An ethnobotanical study of plants used for the treatment of sexually transmitted infections (njovhera) in Guruve District, Zimbabwe. *Journal of Ethnopharmacology*, *77*(1), 5–9. [https://doi.org/10.1016/S0378-8741\(01\)00251-3](https://doi.org/10.1016/S0378-8741(01)00251-3)
- Kamsu-Foguem, B., & Foguem, C. (2014). Adverse drug reactions in some African herbal medicine: literature review and stakeholders' interview. *Integrative Medicine Research*, *3*(3), 126–132. <https://doi.org/10.1016/j.imr.2014.05.001>
- Keyes, C. L. (2014). Mental health as a complete state: How the salutogenic perspective completes the picture. *Bridging occupational, organizational and public health*, *7*, 179-192.
- Kiggundu, J. (2007). Intellectual property law and the protection of indigenous knowledge. *Indigenous Knowledge Systems and Intellectual Property in the*

Twenty First Century. *Perspectives from Southern Africa*, 5, 26-47.

King, R. (2000). Collaboration with traditional healers in HIV / AIDS prevention and care in sub-Saharan Africa A literature review. *UNAIDS Best Practice Collection*, 7–55. Retrieved from [http://data.unaids.org/Publications/IRC-pub01/JC299-TradHeal\\_en.pdf](http://data.unaids.org/Publications/IRC-pub01/JC299-TradHeal_en.pdf)

Kivunja, C. (2018). Distinguishing between theory, theoretical framework, and conceptual framework: A systematic review of lessons from the field. *International Journal of Higher Education*, 7(6), 44–53. <https://doi.org/10.5430/ijhe.v7n6p44>

Korstjens, I., & Moser, A. (2018). Series: Practical guidance to qualitative research. Part 4: Trustworthiness and publishing. *European Journal of General Practice*, 24(1), 120-124.

Krah, E., de Kruijf, J., & Ragno, L. (2018). Integrating Traditional Healers into the Health Care System: Challenges and Opportunities in Rural Northern Ghana. *Journal of Community Health*, 43(1), 157–163. <https://doi.org/10.1007/s10900-017-0398-4>

Kusimba, J., Voeten, H. A. C. M., O’Hara, H. B., Otido, J. M., Habbema, J. D. F., Ndinya-Achola, J. O., & Bwayo, J. J. (2003). Traditional healers and the management of sexually transmitted infections in Nairobi, Kenya. *International Journal of STD and AIDS*, 14(3), 197–201. <https://doi.org/10.1258/095646203762869223>

Langill, S. (1999). Indigenous Knowledge: A Resource Kit for Sustainable Development Researchers in Dryland Africa. *Nippon Ronen Igakkai Zasshi. Japanese Journal of Geriatrics*, 56(1), 45-67 <https://doi.org/10.3143/geriatrics.56.contents1>



- Levy-Storms, L., Chen, L., & Loukaitou-Sideris, A. (2018). Older Adults' needs and preferences for open space and physical activity in and near parks: A systematic review. *Journal of Aging and Physical Activity*, 26(4), 682–696. <https://doi.org/10.1123/japa.2016-0354>
- Lucas, G. N. (2010). Herbal medicine and children. *Sri Lanka Journal of Child Health*, 39(3), 76-84. <https://doi.org/10.4038/sljch.v39i3.2268>
- Mahomoodally, M. F. (2013). Evidence - Based Complementary and Alternative Medicine Traditional Medicines in Africa : An Appraisal of Ten Potent African Medicinal Plants. *Evidence-Based Complementary and Alternative Medicine*, 2013, 1–14. Retrieved from <http://dx.doi.org/10.1155/2013/617459>
- Majeed, H. M. (2015). Reincarnation, Predestination and Moral Responsibility. *Thought and Practice*, 7(2), 105–122.
- Makhubele, J. C. (2011). The effectiveness of indigenous knowledge in the prevention and treatment of infertility in a rural community of Limpopo Province : A social work perspective. *JCHS*, 6(1), 9–20.
- Marks, L. (2006). Global health crisis: Can indigenous healing practices offer a valuable resource? *International Journal of Disability, Development and Education*, 53(4), 471–478. <https://doi.org/10.1080/10349120601008688>
- Mathibela, M. K., Potgieter, M. J., & Tshikalange, T. E. (2019). Medicinal plants used to manage sexually transmitted infections by Bapedi traditional health practitioners in the Blouberg area, South Africa. *South African Journal of Botany*, 122(xxxx), 385–390. <https://doi.org/10.1016/j.sajb.2018.10.009>
- Mbambala, S. G., & Tshisikhawe, M. P. (2016). Perceptions of traditional healers on the management of sexually transmitted infections in Mutale Local

- Municipality , Limpopo Province , South Africa. *South African Journal of Botany*, 103, 330–331. <https://doi.org/10.1016/j.sajb.2016.02.102>
- Mensah, M. L., Komlaga, G., Forkuo, A. D., Firempong, C., Anning, A. K., & Dickson, R. A. (2019). Toxicity and safety implications of herbal medicines used in Africa. *Herbal medicine*, 63, 1992-0849.
- Miles E. (2013). Biopsychosocial Model. In: *Gellman M.D., Turner J.R. (eds) Encyclopedia of Behavioral Medicine*. Springer, New York, NY. [https://doi.org/10.1007/978-1-4419-1005-9\\_1095](https://doi.org/10.1007/978-1-4419-1005-9_1095)
- Millar, D., & Haverkort, B. (2006). African knowledges and sciences: Exploring the ways of knowing of Sub-Saharan Africa. In *In: Millar, D., SB Kendie, AA Apusiga and B. Haverkort (eds.) African knowledge and sciences: Understanding and supporting the ways of knowing in Sub-Saharan Africa. Papers and proceedings of an International Conference on African Knowledges and Sciences held in Bolgatanga, Ghana, 23-29 October 2005, 11-37*. Leusden, Netherlands: Compass.
- Mngqundaniso, N., & Peltzer, K. (2008). Traditional Healers And Nurses: A Qualitative Study On Their Role On Sexually Transmitted Infections Including Hiv And Aids In Kwazulunatal, South Africa. *African Journal of Traditional, Complementary and Alternative Medicines*, 5(4), 380. <https://doi.org/10.4314/ajtcam.v5i4.31293>
- Mothibe, M. E., & Sibanda, M. (2019). African traditional medicine: South African perspective. *Traditional and Complementary Medicine*, 7, 1-27.
- Murdock, G. P. (1980). *Theories of illness: A world survey*. University of Pittsburgh Press.
- Murdock, G. P., Wilson, S. F., & Frederick, V. (1978). World Distribution of

Theories of Illness. *Ethnology*, 17(4), 449–470. Retrieved from <https://www.jstor.org/stable/3773194>

Nazer, M., Abbaszadeh, S., Darvishi, M., Kheirollahi, A., Shahsavari, S., & Moghadasi, M. (2019). The Most Important Herbs Used in the Treatment of Sexually Transmitted Infections in Traditional Medicine. *Sudan Journal of Medical Sciences*, 14(2), 41–64. <https://doi.org/10.18502/sjms.v14i2.4691>

Ndubani, P., & Höjer, B. (1999). Traditional healers and the treatment of sexually transmitted illnesses in rural Zambia. *Journal of Ethnopharmacology*, 67(1), 15–25. [https://doi.org/10.1016/S0378-8741\(99\)00075-6](https://doi.org/10.1016/S0378-8741(99)00075-6)

Ndulo, J., Faxelid, E., & Krantz, I. (2001). Traditional healers in Zambia and their care for patients with urethral/vaginal discharge. *Journal of Alternative and Complementary Medicine*, 7(5), 529–536. <https://doi.org/10.1089/10755530152639756>

Ngarivhume, T., Van't Klooster, C. I. E. A., De Jong, J. T. V. M., & Van Der Westhuizen, J. H. (2015). Medicinal plants used by traditional healers for the treatment of malaria in the Chipinge district in Zimbabwe. *Journal of Ethnopharmacology*, 159, 224–237. <https://doi.org/10.1016/j.jep.2014.11.011>

Njoroge, G. N., & Bussmann, R. W. (2009). Ethnotherapeutic management of sexually transmitted infections (STIs) and reproductive health conditions in central province of Kenya. *Indian Journal of Traditional Knowledge*, 8(2), 255–261.

Novotna, B., Polesny, Z., Pinto-Basto, M. F., Van Damme, P., Pudil, P., Mazancova, J., & Duarte, M. C. (2020). Medicinal plants used by ‘root doctors’, local traditional healers in Bié province, Angola. *Journal of*

*Ethnopharmacology*, 112662. <https://doi.org/10.1016/j.jep.2020.112662>

- Obinna, E. (2012). "Life is Superior to Wealth?": Indigenous Healers in an African Community, Amasiri, Nigeria. *African Traditions in the Study of Religion in Africa*, 6, 135-141
- O'Brien, K. S., Soliman, A. S., Annan, K., Lartey, R. N., Awuah, B., & Merajver, S. D. (2012). Traditional herbalists and cancer management in Kumasi, Ghana. *Journal of Cancer Education*, 27(3), 573–579. <https://doi.org/10.1007/s13187-012-0370-z>
- O’Gorman, K.D. & MacIntosh, R. (2015). *Mapping Research Methods*. Oxford: Goodfellow Publishers.
- Offiong, D. A. (1999). Traditional Healers in the Nigerian Health Care Delivery System and the Debate over Integrating Traditional and Scientific Medicine Published by : The George Washington University Institute for Ethnographic Research Stable. *Anthropological Quarterly*, 72(3), 118–130.
- Ofose-Amaah, S. (2005). *Health and Disease in Ghana: The Origins of Disease and the Future of our Health*. Accra: Ghana Academy of Arts and Sciences; J. B. Danquah Memorial Lecture Series 38
- Ohajunwa, C., & Mji, G. (2019). The African indigenous lens of understanding spirituality: reflection on key emerging concepts from a reviewed literature. *Journal of religion and health*, 57(6), 2523-2537.
- Okatch, H., Andrae-Marobela, K., Monyatsi, K. N., Ngwenya, B. N., & Muzila, M. (2013). Perceptions of safety and efficacy of traditional medicines by community members in Botswana. *International Journal of Food, Nutrition and Public Health*, 6(2), 143–157.
- Okello, J., & Ssegawa, P. (2007). Medicinal plants used by communities of Ngai



- Subcounty, Apac District, northern Uganda. *African Journal of Ecology*, 45(SUPPL. 1), 76–83. <https://doi.org/10.1111/j.1365-2028.2007.00742.x>
- Okolie, P. N., & Obasi, B. N. (1993). Diurnal variation of cyanogenic glucosides, thiocyanate and rhodanese in cassava. *Phytochemistry*, 33(4), 775–778. [https://doi.org/10.1016/0031-9422\(93\)85273-T](https://doi.org/10.1016/0031-9422(93)85273-T)
- Omonzejele, P. F. (2008). African Concepts of Health, Disease, and Treatment: An Ethical Inquiry. *Explore: The Journal of Science and Healing*, 4(2), 120–126. <https://doi.org/10.1016/j.explore.2007.12.001>
- Opoku, J., Manu, E. & Antwi, E. (2018). Spirituality And Healing: Perceptions and Implications on The Akan of Ghana. *Advances in Social Sciences Research Journal*, 5(8) 566-579. [10.14738/assrj.58.5042](https://doi.org/10.14738/assrj.58.5042).
- Ozioma, E.-O. J., & Chinwe, O. A. N. (2019). Herbal Medicines in African Traditional Medicine. In *Intech, i*, 13-19. <https://doi.org/http://dx.doi.org/10.5772/57353>
- Peltzer, K., Preez, N. F. Du, Ramlagan, S., & Fomundam, H. (2008). Use of traditional complementary and alternative medicine for HIV patients in KwaZulu-Natal, South Africa. *BMC Public Health*, 8(May 2014), 0–14. <https://doi.org/10.1186/1471-2458-8-255>
- Petrus, T. S., & Bogopa, D. L. (2007). Natural and Supernatural: Intersections Between the Spiritual and Natural Worlds in African Witchcraft and Healing with Reference to Southern Africa. *Indo-Pacific Journal of Phenomenology*, 7(1), 1–10. <https://doi.org/10.1080/20797222.2007.11433943>
- Pham, L. (2018). Qualitative approach to research. *Research Gate*, (April), 0–7. <https://doi.org/10.13140/RG.2.2.13995.54569>
- Popper, K. R. (2012). *Objective knowledge: an evolutionary approach*. Oxford:

Clarendon Press.

Puchalski, C. (2004). Spirituality in health: The role of spirituality in critical care.

*Critical Care Clinics*, 20(3), 487–504.

<https://doi.org/10.1016/j.ccc.2004.03.007>

Punch, K. (2005). Introduction to Social Research: Quantitative and qualitative approaches. In *Sage Publications*. London: Sage Publications.

Quinn, J. F. (1997). Healing: a model for an integrative health care system. *Advanced Practice Nursing Quarterly*, 3(1), 1-7.

Rajandeep, K., Sman, K., & Sharma, K. (2013). Medicinal Plants For The Treatment Of Sexual Transmitted Diseases. *Biomedical and Pharmacology Journal*, 2(3), 13–23. <https://doi.org/10.13005/bpj/1787>

Sarantakos, S. (2005). *Social Research*. 3rd Edition, Palgrave Mac-Millan, New York.

Seed, J. (2001). *Spirit of Herbs*. Retrieved from I Call On The Spirit Of Herbs website: <https://www.rainforestinfo.org.au/deep-eco/herbs.htm>

Semenya, S., Maroyi, A., Potgieter, M., & Erasmus, L. (2013). Herbal medicines used by Bapedi traditional healers to treat reproductive ailments in the Limpopo Province, South Africa. *African Journal of Traditional, Complementary, and Alternative Medicines : AJTCAM / African Networks on Ethnomedicines*, 10(2), 331–339. <https://doi.org/10.4314/ajtcam.v10i2.19>

Semenya, Sebua, & Potgieter, M. J. (2013). Sexually transmitted infections and their diagnoses: Bapedi experience. *African Health Sciences*, 13(4), 1047–1053. <https://doi.org/10.4314/ahs.v13i4.27>

Serrano, R. (2018). Toxic Plants : Knowledge , Medicinal Uses and Potential Human Health Risks. *Environment and Ecology Research* 6(5):, 6(5), 487–

492. <https://doi.org/10.13189/eer.2018.060509>

Showkat, N., & Parveen, H. (2017). In-depth Interview Quadrant-I. *Communications Research*, 5(7), 45-89.

Shroff, F. (2011). Chapter Three: We Are All One: Holistic Thought-Forms within Indigenous Societies Indigeneity and Holism. *Counterpoints*, 379, 53-67.

Simbo, D. (2010). An ethnobotanical survey of medicinal plants in Trinidad. *Journal of Ethnobiology and Ethnomedicine*, 11(1), 2-8. <https://doi.org/10.1186/s13002-015-0052-0>

Simonelli, M. T. (2008). *Climate Change and Indigenous Knowledge. Higher Educational Handbook Series*. Keynote Publishers Limited, Ilesa, Nigeria.

Smith, L. T. (2021). *Decolonizing methodologies: Research and indigenous peoples*. Oxford: Zed Books Ltd.

Smith-Oka, V. (2012). An analysis of two indigenous reproductive health illnesses in a Nahua community in Veracruz, Mexico. *Journal of Ethnobiology and Ethnomedicine*, 8, 1-10. <https://doi.org/10.1186/1746-4269-8-33>

Sönmez, A. (2013). Research methodology and design. *Contributions to Management Science*, 63-112. [https://doi.org/10.1007/978-3-319-02033-4\\_3](https://doi.org/10.1007/978-3-319-02033-4_3)

Stanifer, J. W., Patel, U. D., Karia, F., Thielman, N., Maro, V., Shimbi, D., ... Boyd, D. (2015). The determinants of traditional medicine use in northern Tanzania: A mixed-methods study. *PLoS ONE*, 10(4), 1-17. <https://doi.org/10.1371/journal.pone.0122638>

Steg, L., & de Groot, J. I. M. (2012). Environmental values. In *The Oxford Handbook of Environmental and Conservation Psychology* (pp. 81-92).

Oxford University Press.

- Stewart-Harawira, M. (2005). Cultural Studies, Indigenous Knowledge and Pedagogies of Hope. *Policy Futures in Education*, 3(2), 153–163. <https://doi.org/10.2304/pfie.2005.3.2.4>
- Stickel, F., Patsenker, E., & Schuppan, D. (2005). Herbal hepatotoxicity. *Journal of Hepatology*, 43, 901–910. <https://doi.org/10.1016/j.jhep.2005.08.002>
- Sulmasy, D. P. (2002). A Biopsychosocial-Spiritual Model for the Care of Patients at the End of Life. *The Gerontologist*, 42(suppl\_3), 24–33. [https://doi.org/10.1093/geront/42.suppl\\_3.24](https://doi.org/10.1093/geront/42.suppl_3.24)
- Sykes, J. A. (2016). The Akan Conception of a Person. *International Philosophical Quarterly*, 18(3), 277-287
- Sylverken, A. A., Owusu-Dabo, E., Yar, D. D., Salifu, S. P., Awua-Boateng, N. Y., Amuasi, J. H., ... & Agyarko-Poku, T. (2016). Bacterial etiology of sexually transmitted infections at a STI clinic in Ghana; use of multiplex real time PCR. *Ghana medical journal*, 50(3), 142-148
- Tabi, M. M., Powell, M., & Hodnicki, D. (2006). Use of traditional healers and modern medicine in Ghana. *International Nursing Review*, 53(1), 52–58. <https://doi.org/10.1111/j.1466-7657.2006.00444.x>
- Tsobou, R., Mapongmetsem, P. M., & Van Damme, P. (2016). Medicinal Plants Used for Treating Reproductive Health Care Problems in Cameroon, Central Africa. *Economic Botany*, 70(2), 145–159. <https://doi.org/10.1007/s12231-016-9344-0>
- Twumasi, A. P. (1975). *Medical Systems in Ghana: A Study in Medical Sociology*. Accra-Tema: Ghana Publishing Corporation
- UNAIDS. (2006). *Collaborating with Traditional Healers for HIV Prevention*



- and Care in sub-Saharan Africa : suggestions for Programme Managers and Field Workers.* 1–58. Retrieved from [http://data.unaids.org/publications/IRC-pub07/jc967-tradhealers\\_en.pdf](http://data.unaids.org/publications/IRC-pub07/jc967-tradhealers_en.pdf)
- Van Onselen, S. (2011). The Use of Medicinal Plants for Women's Reproductive Health in Southern Ghana. *Journal of ethnopharmacology*, 155(2), 992-1000.
- Vermani, K., & Garg, S. (2002). Herbal medicines for sexually transmitted infections and AIDS. *Journal of Ethnopharmacology*, 80(1), 49–66. [https://doi.org/10.1016/S0378-8741\(02\)00009-0](https://doi.org/10.1016/S0378-8741(02)00009-0)
- Welz, A. N., Emberger-Klein, A., & Menrad, K. (2018). Why people use herbal medicine: Insights from a focus-group study in Germany. *BMC Complementary and Alternative Medicine*, 18(1), 1–9. <https://doi.org/10.1186/s12906-018-2160-6>
- Westerlund, D. (2006). *African Indigenous Religion and Disease Causation: From Spiritual Beings to Living Human* (P. Giffod & I. Lawrie, Eds.). Retrieved from <http://library1.nida.ac.th/termpaper6/sd/2554/19755.pdf>
- White, P. (2015a). The concept of diseases and health care in African traditional religion in Ghana. *HTS Teologiese Studies / Theological Studies*, 71(3), 1–7. <https://doi.org/10.4102/hts.v71i3.2762>
- White, P. (2015b). The concept of diseases and health care in African traditional religion in Ghana. *HTS Teologiese Studies / Theological Studies*, 71(3). <https://doi.org/10.4102/hts.v71i3.2762>
- Willcox, M., & Bodeker, G. (2004). Traditional herbal medicines for malaria. *BMJ*, 329, 1156–1159.
- Wilmot, D., Ameyaw, E. O., Amoako-Sakyi, D., Boampong, J. N., & Quashie, N.

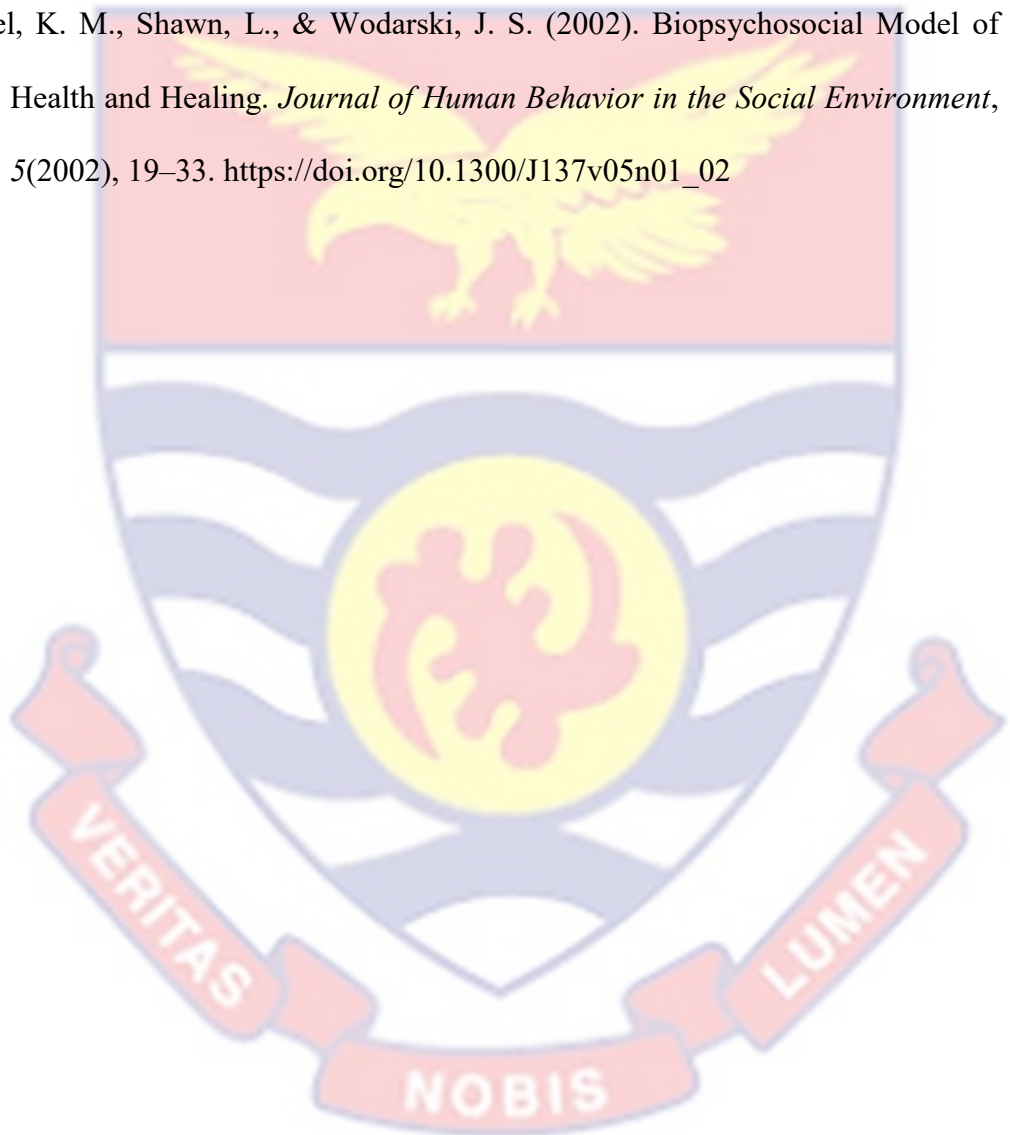
- B. (2017). In vivo efficacy of top five surveyed Ghanaian herbal anti-malarial products. *Malaria journal*, 16(1), 1-8.
- Williams, E. (2009). *Pharmacognosy*. New York: W.B. Sanders Company Ltd.
- Wodah, D., & Asase, A. (2012). Ethnopharmacological use of plants by Sisala traditional healers in northwest Ghana. *Pharmaceutical Biology*, 50(7), 807–815. <https://doi.org/10.3109/13880209.2011.633920>
- Woodley, E. (2004). Local and indigenous ecological knowledge as an emergent property of a complex system: A case study in the Solomon Islands. *In Millennium Ecosystem Assessment Conference “Bridging Scales and Epistemologies*, 9, 17-20
- Workneh, T., Emirie, G., Kaba, M., Mekonnen, Y., & Kloos, H. (2018). Perceptions of health and illness among the Konso people of southwestern Ethiopia: Persistence and change. *Journal of Ethnobiology and Ethnomedicine*, 14(1), 1–9. <https://doi.org/10.1186/s13002-018-0214-y>
- World Health Organisation [WHO]. (1948). *Preamble to the Constitution of WHO as adopted by the International Health Conference*, New York.
- World Health Organization. (2019). *WHO global report on traditional and complementary medicine 2019*. Retrieved from <https://apps.who.int/iris/bitstream/handle/10665/312342/9789241515436-eng.pdf?ua=1>
- Yeboah, T. (2000). Improving the provision of traditional health knowledge for rural communities in Ghana. *Health libraries review*, 17(4), 203-208.
- Zachariah, R., Nkhoma, W., Harries, A. D., Arendt, V., Chantulo, A., Spielmann, M. P., ... Buhendwa, L. (2002). Health seeking and sexual behaviour in patients with sexually transmitted infections: The importance of traditional

healers in Thyolo, Malawi. *Sexually Transmitted Infections*, 78(2), 127–129.

<https://doi.org/10.1136/sti.78.2.127>

Zinyeka, G. (2014). *The epistemological basis of indigenous knowledge systems in science education* (Doctoral dissertation) University of Pretoria, South Africa.

Zittel, K. M., Shawn, L., & Wodarski, J. S. (2002). Biopsychosocial Model of Health and Healing. *Journal of Human Behavior in the Social Environment*, 5(2002), 19–33. [https://doi.org/10.1300/J137v05n01\\_02](https://doi.org/10.1300/J137v05n01_02)



## APPENDIX A

### IN-DEPTH INTERVIEW GUIDE FOR HERBALISTS

Community \_\_\_\_\_

Name of facility \_\_\_\_\_

Location of the Facility \_\_\_\_\_

Date of interview (DD/MM/YY): \_\_\_\_ / \_\_\_\_ / \_\_\_\_

Time of interview: Start \_\_\_\_

Interviewer: \_\_\_\_\_

#### A. Background issues

- Please, can you tell me about who you are - your age, marital status, level of education, religious background, length of stay in this community, years of practice as a herbalist, number of apprentices (male and female).
- Kindly give a narration about how you became a herbalist [Probe for type of calling, training regime, recognition and certification, etc]. What types of disease do you treat?
- There are some herbalists who combine herbs with spirits while others use only herbs. Do you combine herbs and spirits (ancestors, gods, totems) or you use only herbs? [Probe for specific reasons. Also probe if some diseases are treated with herbs only, why others are treated with herbs and spirits]
- With regard to diseases, which of the sexually transmitted infection (STIs) do you treat? [Probe for treatment of HIV, gonorrhoea, syphilis] Which of these do you often treat? Why is it that these are often brought for treatment? Are there other herbalists who treat similar STIs?



## B. Beliefs about herbal treatment (of STIs)

- At times, some believe that herbs have additional healing properties; others have different opinions. What is your view about the use of herbs for treatment? [Probe for reasons such as quick relieve, short term treatment effect, rich in natural active ingredients, safe, prepared by the direction of ancestors]
- Can you please explain why you prefer to use herbs for treatment in general, and in STIs in particular? What do you think is the curative effects of the herbs? [Probe for the active ingredients in the herbs or the power of the spirits transferred into the herbs or both]
- People have different views about the causes of STIs. Some associate the causes to spiritual, infidelity, violation of taboos etc. Others too think they are just caused by human behaviours and germs. What do you think are the cause[s] of STIs? [Probe for spiritual and behavioural causes and how each of these causes leads to infection and disease]
- Kindly reflect on the issues you have discussed with me briefly. What is the linkage between the cause and treatment of STIs? [Probe to draw the link between spiritual cause and spirit-herbal treatment] Do you think STD treatment involve spiritual, natural and social dimensions? Kindly explain your belief on this view to me.

## C. Species of herbs used to treat STIs

- There are so many herbs in the forest and the surroundings. How do you select your herbs for treatment of specific diseases?
- Where do you select them? When do you select them? [Probe for day, time and season]

- Can the same herbs used to treat a Client A's disease be used to treat the same disease of Client B's? Please give explanations to your response. Please, what types of STIs do you treat with herbs? [Probe for gonorrhoea, syphilis, HIV]. Kindly share with me the herbs that you use to treat the following STIs, and why you use such specific herbs:
  - o Gonorrhoea, syphilis, HIV. [Probe: local names, where the herbs are collected from]
  - o Which parts of the herbal plants do you use for treating specific STIs? [Probe for roots, flowers, barks, leaves etc in treating gonorrhoea, syphilis, HIV/AIDS]

**D: Processes involved in herbal treatment of STIs**

- Now, I believe there are many approaches herbalists use with regards to treating their clients. I want to know if the processes involved in herbal treatment of the various kinds of STIs are the same or differ [Probe for reasons why the processes are the same or differ for each STD mentioned]
- Does the treatment of a specific STD depend on its cause? [Probe for treatment process for diseases caused by spiritual and behavioural] Does any of these personal characteristics play a role in the treatment and healing process: sex, age, marital status, virginity, religion, number of children, etc?
- Now, let us discuss the treatment process for these STIs (gonorrhoea, HIV/AIDS, syphilis and candidiasis) [Allow for narration. Get stories]
- Does the treatment depend on specific actions that the client needs to do? If yes, what are the things/behaviours the client is expected to put up to

complement the healing process? [Probe for specific behaviours/actions and reasons – type of food to eat, number of times to bath, etc]

- What are the behaviours or actions that the client is forbidden to facilitate the healing process [Ask about the following: food, bathing, sexual intercourse, etc.]?

#### **E: Perceived effect of herbal treatment of STIs**

- Please, let us now discuss the effects of the treatment you clients receive from you to treat their STIs. What can you say about the treatment in general – did the treatment you provided meet what the clients really wanted? [Probe for specific reasons]
- After the treatment, how did you know that you have treated any of the STIs? What were the indicators for you to tell whether the clients were fully treated or not? Please share with me if, as part of the treatment, the client underwent any review or further diagnosis to establish that you have fully treated a client. [Get stories]
- In some cases, herbalists combine herbal treatment with other treatment (from the hospital, pharmacy/drug store or other herbalist). Did you ever prescribe any additional medication including herbs from a different person, practitioner or herbalist? If yes, what medication did you prescribe to the herbal treatment? Why did you include the additional medication? [Probe for linkage between the source and the medication to be consistent with the earlier position of herbalist's beliefs on herbal treatment and cause of STIs]
- Sometimes people complain about the side effects of herbal treatment such as rash on the body, nausea, vomiting, headaches, stomach upset, etc.

Did any of your client ever had any side-effects which you perceive was as a result of the herbal treatment?

o If yes, kindly describe the side-effects. What do you think was the cause of the side-effects? [Probe for each side-effect and the perceived cause. Get stories]

o How did you deal with the side-effects? [Allow for narration. Get stories]

#### F. Perception of Destiny

- Some people believe that destiny is responsible for one's illness and treatment. What is your view, generally, about destiny? How does it relate to illness and treatment? How does destiny play into your treatment and healing process? [Get stories]
- Do you think destiny can be changed? If yes, how can it be changed? [Probe for specific rituals and practices] If no, why can't it be change?

Closing courtesies

Is there anything else you would like to share with me about the STD treatment you had?

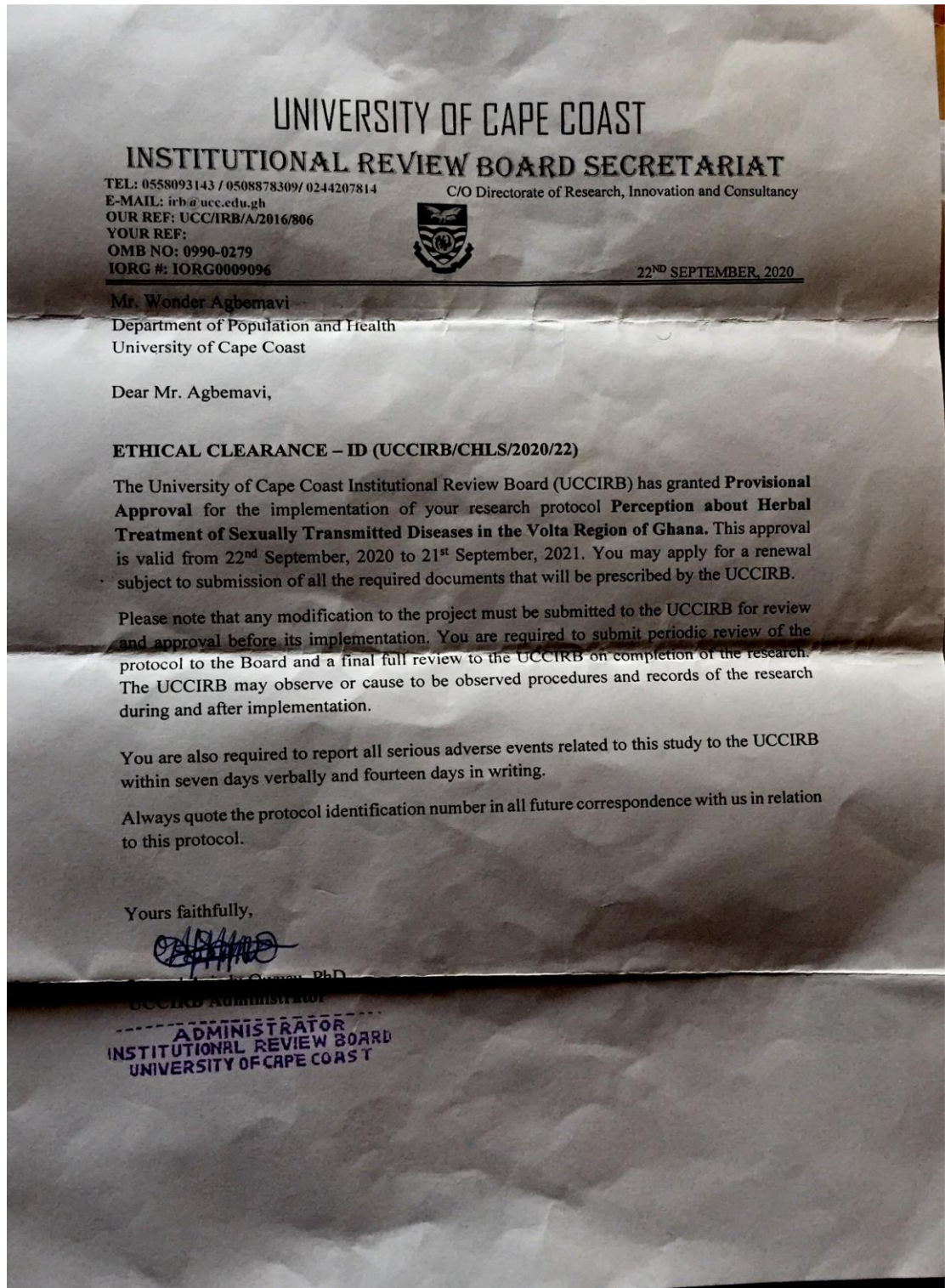
Thank you for your time. I may have to contact you for further clarifications should the need arise.

Time of Interview: End \_\_\_\_\_



APPENDIX B

ETHICAL CLEARANCE LETTER



APPENDIX C  
COMMONLY USED HERBS FOR TREATING STIS



Plate 1: *Cardiospermum grandifolia* (*Nyanya*)

Source: Fieldwork (2020)



Plate 2: *Grewia carpinifolia* (*Ntanta*)

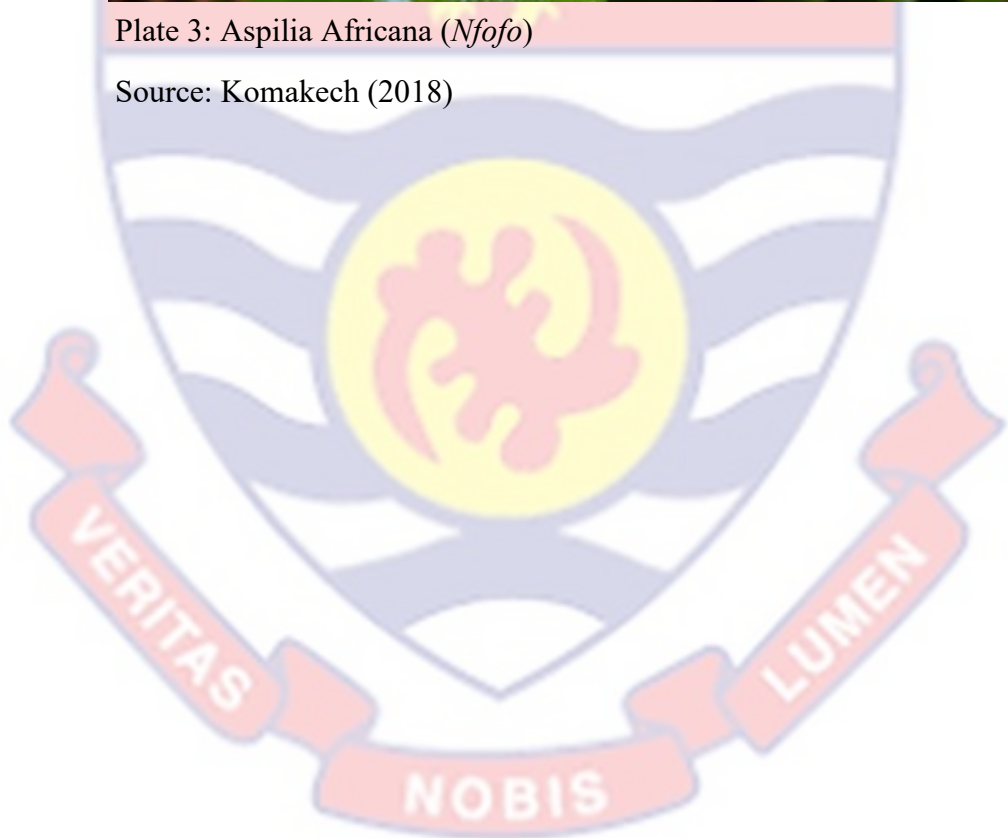
Source: Bown (2010)





Plate 3: *Aspilia Africana* (*Nfofo*)

Source: Komakech (2018)



APPENDIX D  
EXCERPTS FROM FIELDWORK



Plate 4: Researcher with a traditional health practitioner at Duakor  
Source: Fieldwork (2020)



Plate 5: Interior part of a traditional healing centre at Interbeton  
Source: Fieldwork (2020)