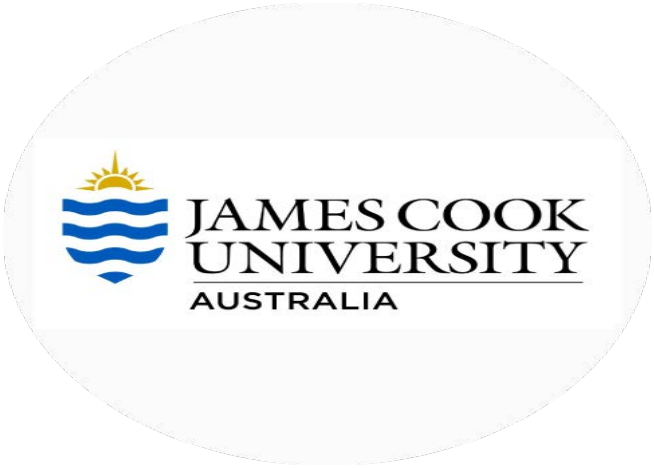

INTEGRATING TRADITIONAL MEDICINE INTO THE HEALTH SYSTEM: EVIDENCE FROM THE ASHANTI REGION OF GHANA

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Submitted in fulfillment of the requirement for the degree of
Doctor of Philosophy

College of Public Health, Medical and Veterinary Sciences

James Cook University

March 2023

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I affirm that the studies reported in this thesis were ethically designed and carried out. The Ghana Health Service Ethics Committee and James Cook University Human Ethics Committee granted the ethics approvals GHS-ERC 003/05/20 and H8239, respectively.

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Acknowledgements

Glory be to God: For with God, nothing is impossible (Luke 1: 37)

I would like to extend my earnest gratitude to my Primary Advisor, Associate Professor Theophilus Ikenna Emeto, for his esteemed contributions to making this thesis possible. A/Prof. Emeto's expertise, support, guidance, and encouragement contributed to all phases of this thesis and my mental balance, for which I would be perpetually grateful.

I would also wish to thank my Secondary Advisor, Professor Bunmi Malau-Aduli and my Advisor Mentor Professor Aduli Enoch Othniel Malau-Aduli. Professor Bunmi Malau-Aduli contributed immensely to the planning and drafting of the research proposal, and I value her unending support throughout my candidature. Professor Aduli Malau-Aduli has been the driving force behind the majority of my academic work and has played an important role in current research accomplishments, and I am grateful for his help. I appreciate the diverse viewpoints they offered to the research, which provided me with the needed information or knowledge to solve an intellectual problem. I have learned so much from them, and I will be eternally thankful for their willingness to share their knowledge and experiences.

I am also grateful to my family, particularly my mother, Felicia Owusu Asare, and my siblings, Bernice Ampomah, Emmanuel Kwaku Ampomah, and Genevieve Afrane Ampomah, for their constant support throughout my academic life. It has not been easy, but your love and care helped me to sail through. Furthermore, the support of Mr. Joseph Attah Amankwah is greatly appreciated. I thank him for his financial and moral support, which empowered me to proceed even in the face of adversities.

I would want to express my gratitude to my colleagues at James Cook University for their continued support during my intellectual journey. Dr. Faith Alele, Dr. Francis Ali Albert and Abdul-Aziz Seidu provided me with sound guidance and support at times when I needed it the most. Dr. Nnamdi Mbgemena constantly encouraged me to focus on the bigger picture. I

am blessed to have a group of friends who have encouraged and inspired me, which kept me grounded in my studies.

Special thanks to the people in the Ashanti Region of Ghana, particularly residents in the Kumasi Metropolis and Offinso North District for participating in the study and providing responses, which aided the completion of your my thesis. Moreover, I would want to express my gratitude and admiration to the thirty-nine health practitioners and hospital administrators who willingly shared their experiences with the practice of integrated healthcare in Ghana with me.

May God bless you all!

Statement of Contribution of Others

I would like to thank the persons and organisations mentioned below for their support in the following roles, leading to the successful completion of this thesis.

Supervision

A/Prof Theophilus Ikenna Emeto

Prof Bunmi Sherifat Malau-Aduli

Prof Aduli Enoch Othniel Malau-Aduli

Financial Support

James Cook University Postgraduate Research Scholarship

James Cook University, College of Public Health, Medical and Veterinary Sciences

BMC Health Services Research

International Health

Analytical Support

A/Prof Theophilus Ikenna Emeto

Prof Bunmi Sherifat Malau-Aduli

Prof Aduli Enoch Othniel Malau-Aduli

Editorial Support

A/Prof Theophilus Ikenna Emeto

Prof. Bunmi Sherifat Malau-Aduli

Prof Aduli Enoch Othniel Malau-Aduli

Abstract

Introduction: Traditional medicine (TM) is the oldest form of healthcare in Ghana and remains prevalent even with the availability of orthodox healthcare. Recognition of the significant role that TM plays in the Ghanaian health system has paved the way for its adoption and integration into the formal mainstream health system. The rationale is to promote safe TM practices, augment the orthodox medicine and extend the scope of the health system. However, studies have shown that TM integration into the formal health system is ineffective because the two health systems are operating independently, and unsafe TM practices are still ongoing. It is essential to understand stakeholders' perspectives on the reasons for the barriers and proffer more effective and sustainable solutions to improve the practice of integration. Therefore, the current research sought to assess the enablers and barriers to integrating TM into the Ghanaian health system using a conceptual framework for integrating TM into national health systems.

Methods: This thesis involved the following: (1) Systematic review, (2) Mixed methods study and (3) Qualitative studies. The first stage addressed research question (RQ1) where a systematic review was conducted to assess the effectiveness of integrated health systems in Africa. Findings of the review highlighted the need for the second stage of the study, which involved the adaption of a TM integration framework and a sequential explanatory mixed methods research design to investigate the population/contextual factors that influence the experiences of community members who are consumers of healthcare services. Three hundred and twenty-three (323) people participated in the quantitative phase of the survey, while interviews in the qualitative phase involved 20 participants until data saturation was achieved. Quantitative data on community members' experiences with the integrated system were gathered using a validated tool structured along the lines of the conceptual framework for integrating TM. Questions and issues on health system accessibility, quality of healthcare, satisfaction, knowledge about integration and communication within the health system were

asked of, and presented to the participants. The mixed methods study conducted in stage two answered RQ 2.

To vividly understand the experiences of community members and the current practice of integration required exploring the perceptions of other relevant stakeholders in the Ghanaian health system. Two qualitative studies that targeted 39 TM and orthodox health practitioners as well as hospital administrators were conducted to explore their perceptions/experiences regarding the current health governance, financing and architecture structures on the integration process. These qualitative studies were conducted in stage three of the study and answered RQ 3. The quantitative data were analysed using both descriptive (frequencies) and inferential (Chi-square/Fisher Exact, multivariable regression) statistics. While qualitative data from community members, health practitioners and hospital administrators were analysed using the framework analytical approach to support and further explain the quantitative findings. In addressing RQ 4, findings from studies conducted in stages 2 and 3 were synthesised to develop a model to promote effective practice of TM integration in Ghana.

Results and Discussion: Finding from the review showed that health service users were not aware of the practice of integrated healthcare, which also negatively affected their usage of such services. However, knowledge about the practice was high among health practitioners but their satisfaction and acceptance of the integration intervention were minimal. Findings from the mixed methods study revealed that community members were aware of the licensing of TM practitioners in Ghana as well as TM training at a science-based university. Nonetheless, only a few were aware of the existence of TM units in some hospitals. Knowledge of integration was mainly determined by sex, marital status, household size, and residential status. Weak cross referrals were the cause of the low patronage of integrated health services in the region. However, users of the integrated system had a positive experience due to the timely and effective healthcare services received.

Findings from the qualitative studies also highlighted that health practitioners and hospital administrators irrespective of their affiliations, were not only aware of the existence of integrated health institutions, but also knew that TM integration had expanded the scope of the Ghanaian healthcare system through safe TM practices. However, they found the integrated system inefficient because of poor standardisation of some TM products, orthodox health practitioners' hostility to TM use, shortage of certified TM, lack of a methodological approach to lead the integration process, and low visibility of the intervention.

The elements of integrative health delivery model were employed to assess the quality of TM integration. The stakeholders' experiences clearly demonstrated that Ghana is currently operating a consumer-led tolerant health system with parallel delivery model between orthodox and TM practitioners. It was evident from the thesis that promoting an effective practice of TM integration in Ghana is dependent on standardising TM practice, high publicity, increased inter-professional collaboration, and integrated facilities, financial support for users/practitioners and TM training for all health practitioners. Participants in this research found these recommendations/activities to be useful, engaging, and likely to lead to better integration of the two health systems. This could elicit positive public health changes in the Ashanti region and Ghana as a whole. An amalgamation of recommendations from all the participants/stakeholders primed the development of the 'SHIFT' model to enhance the implementation of TM integration.

Conclusion: The study assessed the enablers and barriers to the practice of TM integration in Ghana and the findings showed that most service users, health practitioners, and hospital administrators in the Ashanti region support TM integration and found the intervention to be beneficial. Knowledge about the creation of TM units in selected government hospitals was common to health practitioners and hospital administrators, but low among community members/service users. The prime benefit of integration as reported by the study participants is

the availability of an effective alternative healthcare service. However, this research has shown that TM practice is currently operated in a parallel model of health delivery due to certain contextual, health governance and financing barriers. These barriers include absence of an integration implementation document, inadequate publicity about the practice of TM integration, limited healthcare financing, poor service standards associated with certain TM products/services and opposition of orthodox health practitioners to TM use. Clearly, inefficient health governance, inequality in healthcare financing and poor architectural issues have impacted negatively on consumer experiences. The developed 'SHIFT' model could be employed to improve consumer experiences through the formulation or modification of existing health policies.

List of Publications from Thesis with Impact Factor (IF)

1. **Ampomah, I.G.**, Malau-Aduli, B.S., Seidu, A.-A, Malau-Aduli, A.E.O., Emeto, T.I. (2022). Integrating traditional medicine into the Ghanaian health system: Perceptions and experiences of traditional medicine practitioners in the Ashanti region. *International Health 0*, ihac059, https://doi.org/10.1093/inthealth/ihac059 (IF - 3.131)
2. **Ampomah, I.G.**, Malau-Aduli, S.B., Seidu, A.-A., Malau-Aduli, A.E.O., Emeto, T.I. (2022). The practice of integrated healthcare and the experiences of people in Ghana's Ashanti region. *BMC Health Services Research*, 22(1), 32. https://doi.org/10.1186/s12913-021-07340-0 (IF - 3.647)
3. **Ampomah, I.G.**, Malau-Aduli, B.S., Seidu, A.-A., Malau-Aduli, A.E.O., Emeto, T.I. (2021). Perceptions and experiences of orthodox health practitioners and hospital administrators towards integrating traditional medicine into the Ghanaian health system. *International Journal of Environmental Research and Public Health* 18(21), https://doi.org/10.3390/ijerph182111200 (IF - 4.614)
4. **Ampomah, I.G.**, Malau-Aduli, B.S., Malau-Aduli, A.E.O., Emeto, T.I. (2020). Effectiveness of integrated health systems in Africa: A systematic review. *Medicina*, 56(6), DOI: 10.3390/medicina56060271 (IF - 2.948)
5. **Ampomah, I.G.**, Malau-Aduli, B.S., Malau-Aduli, A.E.O., Emeto, T.I. (2023). From talk to action: Developing a model to foster effective integration of traditional medicine into the Ghanaian healthcare system. Under Review (*Journal of Integrative Medicine*) JIM-09-2022-RE-0675 (IF - 3.951)

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List of abbreviations

AOR:	Adjusted Odds Ratio
CI:	Confidence Interval
COREQ:	Consolidated Criteria for Reporting Qualitative Studies
CSRPM:	Centre for Scientific into Plant Medicine
FDA:	Food and Drug Authority
FOP:	Faculty of Pharmacy
GFTMP:	Ghana Federation of Traditional Medicine Practitioners
GHC:	Ghana Cedi
GHS:	Ghana Health service
GSS:	Ghana Statistical Service
HIV:	Human Immunodeficiency Virus
HA:	Hospital Administrator
HM:	Hospital Management
IGF:	Internally Generated Funds
KNUST:	Kwame Nkrumah University of Science and Technology
MD:	Medical Doctor
MHA:	Medical Herbalist Association
MRC:	Medical Research Council
NHIS:	National Health Insurance Scheme

NS:	Nurse
OM:	Orthodox Medicine
OPD:	Outpatient Department
PDMH:	Pharmaceutical Directorate of Ministry of Health
PM:	Pharmacist
PRISMA:	Preferred Reporting Items for Systematic Reviews and Meta-Analyses
QATSDD:	Quality Assessment Tool for Studies with Diverse Designs
RQ:	Research Question
SDG:	Sustainable Development Goals
SPSS:	Statistical Package for Social Sciences
TM:	Traditional Medicine
TMPC:	Traditional Medicine Practice Council
USD:	United States Dollar
WHO:	World Health Organization

Researcher's Motivation and Personal Background

I am a motivated health systems and consumer engagement researcher on a mission to promote the effectiveness of health systems. I have always had an interest in promoting integrated healthcare and my passion stems from the fact that my younger sister suffered from a health condition (recurring boils) some years ago. We tried modern healthcare treatments but to no avail, so we turned to TM. It was a difficult time for my family given that my sister is dumb and was not in a position to express exactly how she felt. It took the compassionate attitude of a TM practitioner to understand what my sister was going through and provided her with the needed care and eventually, she was healed. My sister is alive and full of life due to the availability and efficacy of TM as well as the quality of treatment she received at the TM clinic. This encouraged me to enroll for a Master's degree with the aim of assessing the utilisation of health services among Ghanaians and to explore the type of health system (orthodox and TM) most people preferred. The study clearly showed that Ghanaians preferred a combination of both TM and orthodox healthcare services. After my Master's degree, I started my academic career as a Research Assistant at the Population and Health Department, University of Cape Coast, Ghana, and volunteered as a peer review officer at the University of Cape Coast Hospital. As I performed these roles, I witnessed first-hand, the pressure the orthodox health system was experiencing, and the struggles people went through just to receive orthodox health services. I knew TM was introduced into the formal health system. Therefore, congestion at the hospitals made me wonder why people were not using the integrated health system. I could not get any concrete answers to the question. Fortunately, I secured a fully funded scholarship to study in Australia, and I saw an opportunity to act. Linking the success story of my sister, the high preference for the use of the two health services in Ghana, and the congested nature of the orthodox health system, propelled me to enroll into a Ph.D. research

programme with a focus on the Ghanaian integrated health system to gain more insight and contribute to potential solutions to better the health system.

Chapter 1: General Introduction

1.1 Chapter Overview

The introductory chapter situates this research and offers context for the research questions presented in this thesis. The chapter begins with the definition of traditional medicine (TM), followed by the problem statement, which highlights the difficulties associated with the unregulated use of TM, the role of TM in health delivery, implementation measures adopted by the government to integrate TM into the formal health system, and the reasons for evaluating the practice of integrated healthcare in Ghana (research gaps). A TM integration framework that underpins the current research, methodology and analytical techniques employed are presented in this chapter. A summary of the thesis chapters, how they address the research questions (RQs) and alignments with the integration framework are provided.

1.2 Background and Problem Statement

TM has been described as a set of indigenous health maintenance or promotion therapies that are delivered outside of the mainstream healthcare system (James, Wardle, Steel, & Adams, 2018). The World Health Organization (WHO) describes TM as "*the sum total of all the knowledge and practices, whether explicable or not, used in diagnosis, prevention and elimination of physical, mental and social imbalance, and relying exclusively on practical experience and observation handed down from generation to generation, whether verbally or in writing*" (World Health Organization, 1978, 2013). Therefore, the use of plants, seeds, roots, berries, and barks for medicinal purposes, is an aspect of TM (James et al., 2018). In this research, TM refers to unorthodox health services and products including the use of medicinal plants, roots, leaves, and barks whether processed or not, that are used for healing purposes (Figure 1.1a and 1.1b).

Figure 1.1a: Unprocessed TM products

Source: https://www.modernghana.com/news/402043/make-traditional-medicine-more-reliable-stakehol.html (accessed: 25 November 2021)

Figure 1.1b: Processed TM products

Source: https://www.ghanadistricts.com/Home/Reader/c6987e7-e9a8-4148-af (accessed: 25 November 2021)

Previously published studies have echoed a rise in the prevalence of TM use across the globe (Mwangi, Mungai, Thoithi, & Kibwage, 2005; Vickers, Jolly, & Greenfield, 2006). Reasons for such high prevalence of TM use include effectiveness of TM in treating certain illnesses, perceived minimal side effects, affordable health services, and the rising trend of TM use in the pharmaceutical industry (Elvin-lewis, 2001; Galabuzi, Agea, Fungo, & Kamoga, 2010). Sharma et al., (2008) reported that the use of TM is prominent because people perceive TM to be safe due to its 'natural nature'. Ghanaians also share this belief, as urban-periphery dwellers perceive the use of TM in treating malaria as effective and safe owing to its natural components (Mensah & Gyasi, 2012).

Regardless of these merits, TM practice is not totally harmless (Oreagba, Oshikoya, & Amachree, 2011). The idea of the 'ability to treat all' as propagated and practiced by many TM

practitioners, is a setback in their field of practice (Adewunmi & Ojewole, 2004). Adewunmi and Ojewole (2004) linked this 'ability to treat all' attribute of TM practice to a low level of technology and evidence-based research in the field. Other studies have raised concerns about the safety and potency of TM (Addo, 2007; Adewunmi & Ojewole, 2004).

Evidence-based practice in TM can be achieved by enacting health policies, and setting up regulatory councils/committees and research institutions to build and promote acceptable and innovative ways in the field of TM (Zhang, Xue, & Fong, 2011). Thus, the only feasible way to promote the safe practice of TM (evidence-based) is through proper and effective integration of TM into formal health systems (Ahlberg, 2017). Nonetheless, integration approaches (integrative or inclusive) should be implemented in a manner that will promote the exclusive characteristics of the two health systems and merge them to offer quality health services to users (Ahlberg, 2017).

The unregulated and ignorant patronage of contaminated or counterfeit TM and lack of information on the appropriate dosage or usage TM products may have negative effects on the health of clients (Oreagba et al., 2011). For example, a study in southern Ghana reported that the unregulated and improper use of TM among females of reproductive years caused several fertility complications including premature rupture of membranes (23%), unestablished labour (15.8%) abortions (27.2%), ectopic pregnancies (22.8%), fibroid uterus (14%), and pelvic inflammatory diseases (14%) among others (Addo, 2007). This finding has been corroborated by a more relatively recent study in Malawi, which identified a significant association between the improper use of TM and adverse fertility outcomes, particularly maternal indisposition, maternal and newborn deaths (Zamawe, King, Jennings, & Fottrell, 2018). These authors reported that adverse maternal illnesses and deaths were 28% higher among TM users than non-users (Zamawe et al., 2018).

Given the above discussion, it is evident that unregulated or improper use of TM can cause detrimental health effects on users (Elvin-lewis, 2001), thus raising concerns about TM integration into formal health systems. However, TM is the oldest form of health care in many African and Asian countries (Oreagba et al., 2011). This makes it impossible to completely stop people from using traditional therapies. Therefore, reducing or eliminating the adverse effect of non-regulated and improper use of TM requires appropriate research and clinical trials to promote and determine the potency and safety of TM before it is recommended for human consumption (Addo, 2007; Vickers, 2007).

The use of TM continues to increase exponentially in both developed and developing countries including Ghana (Appiah, Amponsah, Poudyal, & Mensah, 2018). Statistics have shown that approximately 75 - 95% of the world's population continue to depend on TM in some form for their healthcare (Gyasi et al., 2017). The story is not different in Africa, as Boateng, Danso-Appiah, Kofi Turkson, and Tersbøl (2016) reported that 80% of Africa's population continues to rely on TM as their first line of healthcare. For example, about 27 million South Africans recounted using TM for their basic healthcare needs (Koduru, Grierson, & Afolayan, 2007). Another study suggested that 94% of people living in semi-urban settlements in Nigeria and Ethiopia use TM for treating a number of illnesses (James et al., 2018). Seventy-five (75) to 80% of Ghanaians are shown to rely on TM for their primary healthcare (Abbiw et al., 2002), with a reported prevalence of 74% among cancer patients (Yarney et al., 2013).

1.3 Research gaps within the Ghanaian context

Before the introduction of orthodox medicine in Ghana, TM was the major remedy for illnesses such as boils, fever, bone fracture, and skin rashes among others (Gyasi, Mensah, Adjei, & Agyemang, 2011; Lucas, 2010). A study by Ampomah, Kumi-Kyereme, Darteh, and Addo (2015) reported that most Ghanaians use TM in the treatment of malaria and bone fractures. The study demonstrated that a mixture of elephant grass, lime, pineapple, and leaves

of the neem tree is considered an effective remedy for the treatment of malaria in Ghana. Likewise, bonesetters in Ghana cure people suffering from fractures by applying plants and animal extracts to affected parts and in some instances make incantations. This type of healthcare is considered the most efficient in the treatment of bone fractures in Ghana. The above-mentioned practices illustrate the vital role TM plays in healthcare delivery in Ghana.

Currently, the use of orthodox medicine is increasing rapidly. However, TM is still patronised by approximately 70% of people in Ghana (Yarney et al., 2013), particularly those in remote areas. Factors such as; availability, affordability, and the entrenchment of TM in the socio-cultural structure of Ghanaian society explain the increase or continuous use of TM (Ae-Ngibise et al., 2010; Krah, de Kruijf, & Ragno, 2018; Tabi, Powell, & Hodnicki, 2006). Furthermore, the inability of the Ghanaian orthodox health system to provide adequate healthcare services to the populace also facilitates the increased use of and continuous use of TM in Ghana. For example, studies have shown that the physician-population ratio in Ghana is 1:12,000 whereas the traditional healer-patient ratio is 1:400 (Abbiw et al., 2002; Abel & Busia, 2005; Vasconi & Owoahene-Acheampong, 2010). This undesirable state of health delivery associated with the Ghanaian orthodox health system coupled with the important role TM plays in healthcare provision in Ghana led to the integration of TM into the Ghanaian formal health system.

The government of Ghana officially integrated TM into the health system in the year 2012 (Agyei-Baffour, Kudolo, Quansah, & Boateng, 2017). According to the World Health Organization (2002), Vasconi and Owoahene-Acheampong (2010), Ghana is practicing an inclusive health system given the nature of health interventions implemented to formally integrate TM into the Ghanaian health system. Such interventions include the policy on TM, the creation of TM units in some selected public hospitals, the establishment of a TM research centre (the Centre for Scientific Research into Plant Medicine [CSRPM]), and the introduction

of TM into tertiary education (Appiah et al., 2018; Gyasi et al., 2017; World Health Organization, 2002). The TM Practice Council (TMPC) and TM Act were also instituted in the years 2001 and 2005 respectively (Boateng et al., 2016) to regulate the activities of TM practitioners through the registration of their practice (Gyasi et al., 2017). In Ghana, TM integration entails the formal recognition of TM practice as an acceptable health system. Here, orthodox and TM practitioners are expected to co-exist and interact in an atmosphere of mutual trust and respect to offer well-connected healthcare services to cater for the health needs of Ghanaians. This implies that TM products are expected to be recommended by health practitioners to clients when necessary and there should be an effective inter-professional relationship/referral system between the two health practitioners (Appiah et al., 2018; Vasconi & Owoahene-Acheampong, 2010).

Despite the efforts made by the government to promote the integration of TM, TM is still poorly incorporated into the formal health system for various reasons. Firstly, Abdullahi (2011) and Agyei-Baffour et al. (2017) found that patients are unable to discuss the usage of TM with their physicians. The situation is compounded by the unclear implementation of a recommendation put forth by the TM Directorate at the Ministry of Health (MOH) that TM should be prescribed to service users seeking care at hospitals (Appiah et al., 2018).

The traditional health sector do not receive adequate backing from the central government because it is not supported under the health cover in Ghana (Appiah et al., 2018; World Health Organization, 2002). The MOH, which is the highest governing body in terms of health-related issues, recognises skilled TM practitioners from the CSRPM, Kwame Nkrumah University of Science and Technology (KNUST), and Tetteh Quarshie Memorial Hospital as certified health/TM practitioners. However, there is no explicit protocol/official statement in the policy guidelines of TM development framework describing how these practitioners are

placed in existing health facilities to consult as medical practitioners (MOH, 2005). Evidently, there are loopholes in the integration process that need to be identified and addressed.

Agyei-Baffour et al. (2017) and Krah et al. (2018) examined the views of health practitioners and clients on the integration of TM and reported poor interaction between the two health systems. oateng et al. (2016) explored the perception of relevant stakeholders about the practice of TM integration in one of the pilot health facilities and discovered a lack of regulatory policy and protocol for effective TM integration. These findings demonstrate that TM is poorly integrated into the formal health system. As such, the authors recommended that a study should be conducted to assess issues of health systems integration within Ghanaian communities and health facilities to inform future policies on the practice of TM integration (Boateng et al., 2016). The current study fulfills this recommendation.

From a methodological perspective, there is a growing advocacy for the use of integrative research methods to investigate complex health topics. This rising interest stem from the fact that mixed methods research designs help in recognising the importance of the context being studied, discovering repetitive issues, establishing general/specific issues, seeking multidimensional results that involve lived experiences of people and achieving objectivity in study results (Evans, Coon, & Ume, 2011). Adopting multiple research approaches in a single study is an intensive way of examining multifaceted problems/event to detect trends, similarities, differences, and broad patterns across different populations that could aid in drawing inference. Nonetheless, most of the earlier Ghanaian integrated health studies employed either quantitative (Agyei-Baffour et al., 2017) or qualitative research approaches (Ahenkan, Opoku-Mensah Abrampa, & Boon, 2019; Appiah et al., 2018; Boateng et al., 2016; Gyasi et al., 2017; Krah et al., 2018) in achieving the objectives of the studies. This makes it necessary to adopt a mixed methods research approach to study the concept or practice of TM integration in Ghana to achieve detailed, diverse and trustworthy reports.

The use of theoretical frameworks serves as a guide to conducting vigorous scientific investigations. At the beginning of a research, adopting a framework could direct the selection of research design, help in assessing a set of related concepts, and aid in discovering start codes/themes (Evans et al., 2011; Miles & Huberman, 1994). At the end, frameworks provide a systematic and logical structure for merging findings from distinct studies; help in summing up and linking study findings into a manageable, logical, and practical structure as well as direct the interpretation of the topic under study. Thus, it highlights the '*why* and *what*' of events/peoples' experiences; and offer a foundation for extrapolation (Evans et al., 2011). Again, the preceding studies failed to utilise theoretical frameworks; therefore, the current thesis extends the works of the above-mentioned authors by adapting a TM integration framework to support, guide and discover the complexities associated with the practice of TM integration in Ghana.

To conclude, Morgan (2007) has suggested that researchers need to use their study of methodology to connect issues in theory/epistemology with issues in research design, instead of separating their ideas about the nature of information from ways of producing it. Hence, it is important to connect practical research approaches with the need for a theoretical framework to aid in the designing and conducting of robust mixed methods studies. This idea reinforces the use of theoretical framework and mixed methods design in the thesis.

1.4 Importance of integrating traditional medicine into formal health System

Siahpush believed that TM has gained popularity among populations due to two main factors. First, people's preference for the manner TM practitioners treat their clients - being caring, personalised healthcare, adequate time, and information delivered during the care process. Secondly, TM practitioners provide psychological needs in the midst of diverse religions and societal values by offering another context within which infirmities, suffering, and misfortune could be understood (Siahpush, 2000). In Africa, TM are usually preferred and utilised because such medicines are economical, easy to acquire and the notion that TM is

harmless and the treatment is guaranteed to produce satisfactory results (Amoah, Sandjo, Bazzo, Leite, & Biavatti, 2014). Considering these factors, people will continue to use TM irrespective of the conditions under which such medical services are provided. However, improper utilisation and/or dosage of TM can be harmful to users (Lulebo et al., 2017). For example, some studies have reported that uncontrolled practice or use of TM could cause skin, eye, kidney, liver and gastro-intestine tract damage (Hsieh et al., 2012; Li, Orth, Wong, & Rabiee, 2009; Liu et al., 2015). This report clearly discredit the view that TM has no adverse effects or reaction. Therefore, to promote evidence-based TM practice and protect the health of people would require effective integration of TM integration into formal mainstream health systems.

Furthermore, healthy and helpful communications between orthodox and TM practitioners can promote the health of populations through the creation of an adequate workforce in the health sector to cater for the health needs of populations. As the incidence of diseases increases, pressure is mounted on mainstream health systems to present practical health promotion solutions to the people. The integration of TM into the mainstream health system could expand healthcare services to solve the growing incidence of illnesses by making healthcare available and accessible to all (Wenck & Lutton, 2005).

This thesis helps to identify the conditions that promote or hinder the effective integration of TM into Ghanaian mainstream health system and allow stakeholders to offer recommendations for better integration of the two health systems. Identifying such conditions/factors might influence government officials and policymakers to enact laws or modify existing health policies to enhance the practice of integration.

1.5 Thesis Significance

Ghana as a developing country is still managing to provide an all-inclusive healthcare delivery system for the ever-increasing youthful population. The orthodox health system is the main source of healthcare and has been demonstrated to be insufficient in meeting the basic

health needs of Ghanaians, particularly those in the Ashanti Region (Baidoo, 2009; MOH, 2005). Most Ghanaians in the Ashanti Region have limited access to orthodox healthcare services (Ghana Statistical Service [GSS], 2012) due to inadequate orthodox health facilities, creating congestion at various health centres in the region and high cost of orthodox treatments. This deficit in the supply of healthcare by the orthodox health system encourages patronage of TM practitioners regardless of the nature of the services delivered. However, such healthcare services are mostly unreliable, unsafe and could cause detrimental effects to the health of users (Oreagba et al., 2011). To eliminate this problem led to the government implementing health interventions to integrate TM (medical practice embedded in the socio-cultural structure of the Ghanaian society) with the orthodox health system in Ghana (Tabi et al., 2006).

An effective integrated health system is where the scope of health delivery is broadened through; a good partnership/referral system, as well as improved communication and alliance between orthodox and traditional health practitioners while safeguarding indigenous medical knowledge (Gyasi et al., 2017; Sambo, 2003). The practice of integration could reduce health personnel shortages and grant the opportunity for redesigning work roles leading to greater job satisfaction among the practitioners (Grace, 2012). This will enable health practitioners to better provide adequate and quality services to maintain and promote the health of the populace (Grace, 2012). Therefore, this thesis aims at highlighting the enablers and barriers to TM integration through the assessment of the perception and experience of community members, health practitioners, and hospital administrators in the Ashanti region. The outcome of the thesis could aid in the formulation of customised health policies to improve the effectiveness of the practice of integrated healthcare in Ghana.

1.6 Research Aims and Questions

1.6.1 Research Aims

To fully understand the enablers and barriers to the current practice of TM integration, this thesis aims to:

1. Assess the effectiveness of integrated health systems in Africa
2. Examine the patronage, knowledge, preference, and experiences of Ashanti region community members in relation to TM integration into the Ghanaian health system
3. Explore the perceptions and experiences of health practitioners and hospital administrators in the Ashanti region in relation to the benefits and barriers associated with the current practice of TM integration
4. Identity ways in which the practice of TM integration could be made effective and sustainable in Ghana

1.6.2 Research Questions

In addressing these aims in this thesis, the following research questions (RQ) were asked:

RQ1. How effective are integrated health systems in Africa, particularly in Ghana?

RQ2. What are the knowledge, attitude, preference and experiences of Ashanti region community members in relation to TM integration into the health system?

RQ3. What are the perceptions and experiences of health practitioners and hospital administrators in the Ashanti region in relation to the benefits and barriers associated with current practice of TM integration in Ghana?

RQ4. How can the practice of TM integration be made effective and sustainable in Ghana?

1.7 Underpinning Theoretical Framework

Due to the inadequate use of conceptual framework in integrated health studies in Ghana, this thesis adapted Park and Canaway's (2019) framework for integrating TM into national health systems. The framework has been previously used to assess the practice of TM integration in Western Pacific and Asia. Hence, it was adapted in this thesis to identify the conditions that promote or hinder the integration process and proffer recommendations for better integration of the two health systems.

Integration of TM has been drawn and conceptualised at various levels of health delivery (Park & Canaway, 2019). The authors of the framework argue that factors that

influence TM integration can be broadly categorised into six themes, which are population/contextual characteristics, consumer experience, health financing and governance, health architecture, integrated healthcare models and health system type.

Figure 1.2 shows a conceptual framework that relates different levels of TM integration along detailed contextual characteristics and the nature of health system design. Population/contextual characteristics of countries such as demographic (population structure, religion, marital status), geographical (rural/urban), psychosocial (norms, customs, practices, values, beliefs systems), and economic can either hinder or promote the practice of integration. For example, if the belief systems, norms, customs, and practices of a given population support the use of TM, then its integration would be tolerated. Conversely, people will oppose integration if they do not believe in the efficacy of TM. Due to the differences in socio-cultural and economic characteristics, the authors of the framework assert that there is no one-size-fits-all model or framework for integrating TM into formal health systems. They urged each country to discover a particular technique or means to attain effective integration by recognising the role TM plays in the country's healthcare delivery system (Park & Canaway, 2019).

Regarding consumer experience, improved TM integration places the client/population in partnership with an inter-disciplinary team of traditional and orthodox health practitioners. This helps consumers to experience connectedness and stability in accessing health care. Health systems are not well integrated when people practice 'consumer-led integration'. This is where clients do not realise the integration of TM at the facility/provider level. Therefore, they integrate health care services by independently accessing a combination of health services/practitioners (Park & Canaway, 2019).

The health governance and financing theme highlights how government policies shape the health systems of countries through financing. Including TM in health insurance schemes is considered a way of promoting the integration of TM, as it would provide a proper and

sustainable financing scheme (Park & Canaway, 2019). Finally, the quality of healthcare delivery in a country is explained by the health architecture. This involves the role of health practitioners in the integration discourse, as well as their impact and participation. The success of the practice of TM integration is also influenced by the perspectives and understanding of health practitioners concerning TM integration, their exposure to TM practice, and communication within the health system (Figure 1.2).

The integrated healthcare delivery model theme simply talks about the level of collaboration between health service users, the orthodox and TM field or practitioners. Integrated health delivery models include integrative/inter-disciplinary, coordinated interaction, consultative and parallel models. Integrative/inter-disciplinary integration reflects an effective synergy between service users and the two health practitioners. However, parallel delivery model is characterised by consumer-led integration portraying disorderly and ineffective relationship between the relevant stakeholders in the health system. The framework further shows that the type of health system practiced in a country then determines the style of integrated healthcare delivery model that country implements (Park & Canaway, 2019).

Reflecting on the original framework, the relationship between the themes were determined by the authors of the framework. They demonstrated that setting (population/contextual characteristics) influence consumer experiences through the healthcare system (comprising health architecture and health governance and financing). Then, the outcome (improved integration or otherwise) influences consumer experiences (Park & Canaway, 2019). However, a study has also shown that consumer experiences also impact the outcome/nature of integration (Boateng et al, 2016). Both relationships have been presented in Figure 1.2.

Given that, the study aims to assess the enablers and barriers to the practice of TM integration in Ghana among stakeholders such as health service users, health practitioners and

hospital administrators, the theoretical framework was adapted because some aspects were not directly applicable. The population/contextual characteristics, consumer experiences, health architecture, and health governance and financing components of the framework are directly applicable to the study and the target population could relate and would be eligible/in the position to offer responses to the selected themes rather than health system and delivery model themes. Employing the population/contextual characteristics, consumer experiences, health architecture, and health governance and financing components of the framework could help in identifying the key/primary factors enabling or hindering the integration process. These factors could be used in determining the actual health system type and integration model practiced in Ghana. I believe using this approach is more useful in unravelling the true and current state of the Ghanaian integrated healthcare system rather than allowing participants to merely express their perception about the delivery model and type of health system practiced.

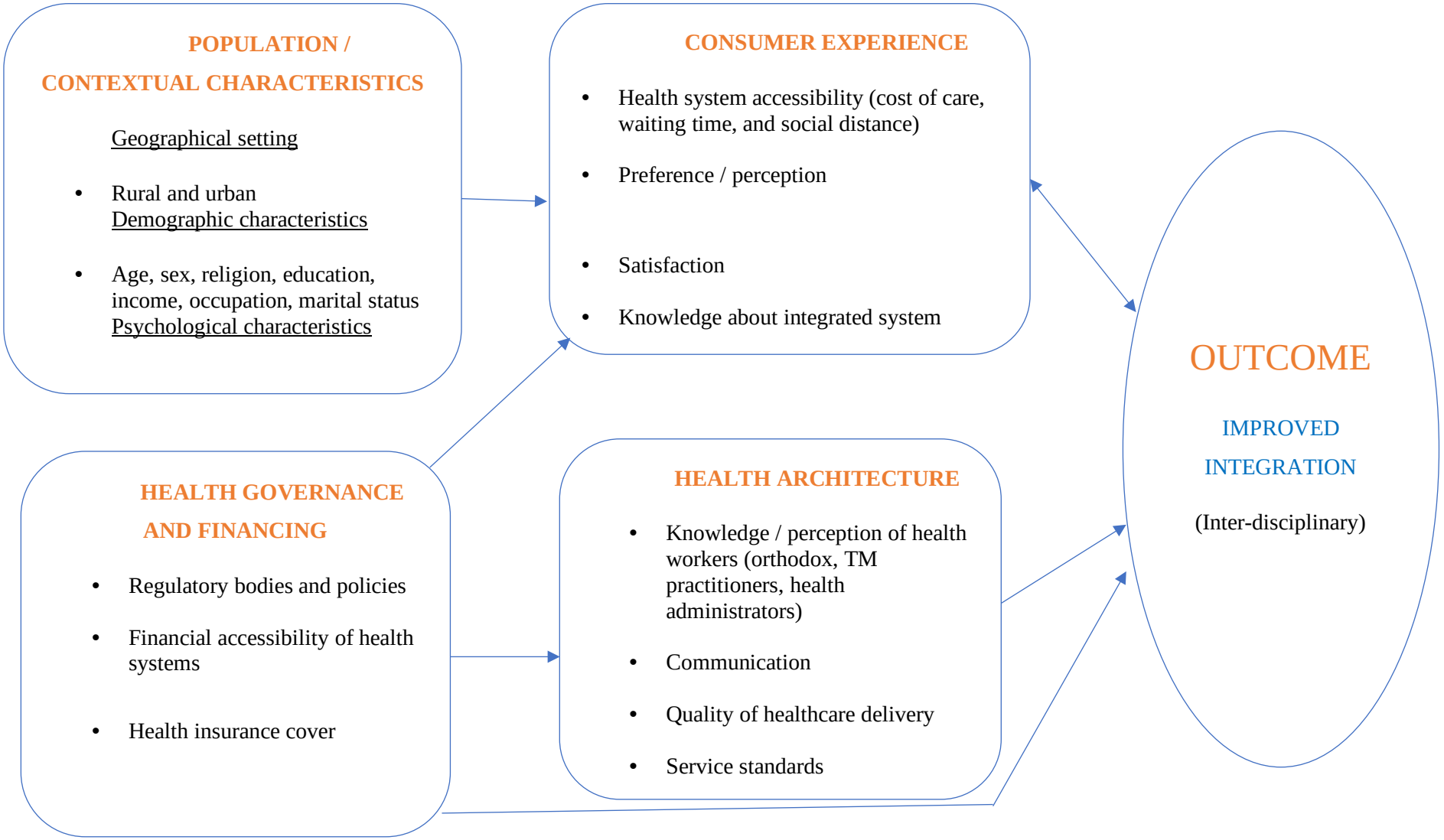

Figure 1.2: Conceptual framework for integrating TM into national health systems.

Source: Park and Canaway (2019).

1.8 Overview of Research Approach

Several methods including a review of existing literature, mixed methods, and qualitative research design were used in this thesis (Figure 1.3). The research was conducted in three stages. Stage 1 involved a systematic review that assessed the effectiveness of integrated health systems in Africa. Stage 2 employed a mixed methods research design to assess the knowledge, attitude, preference, and experiences of health service users in relation to TM integration in Ghana. Stage 3 was conducted in two phases (3A and 3B). Both studies employed a qualitative research approach to explore the perceptions, experiences and recommendations of health practitioners and hospital administrators in relation to the benefits and barriers associated with the current practice of TM integration in Ghana. Stage 3A focused on orthodox health practitioners (medical doctors, pharmacists, and nurses) and hospital administrators while stage 3B focused on TM practitioners. The studies conducted in stages 2 and 3 were merged to demonstrate the actual health system and delivery model practiced in Ghana and synthesised the recommendations of the stakeholders to develop a model to foster an effective practice of TM integration in Ghana (Figure 1.3).

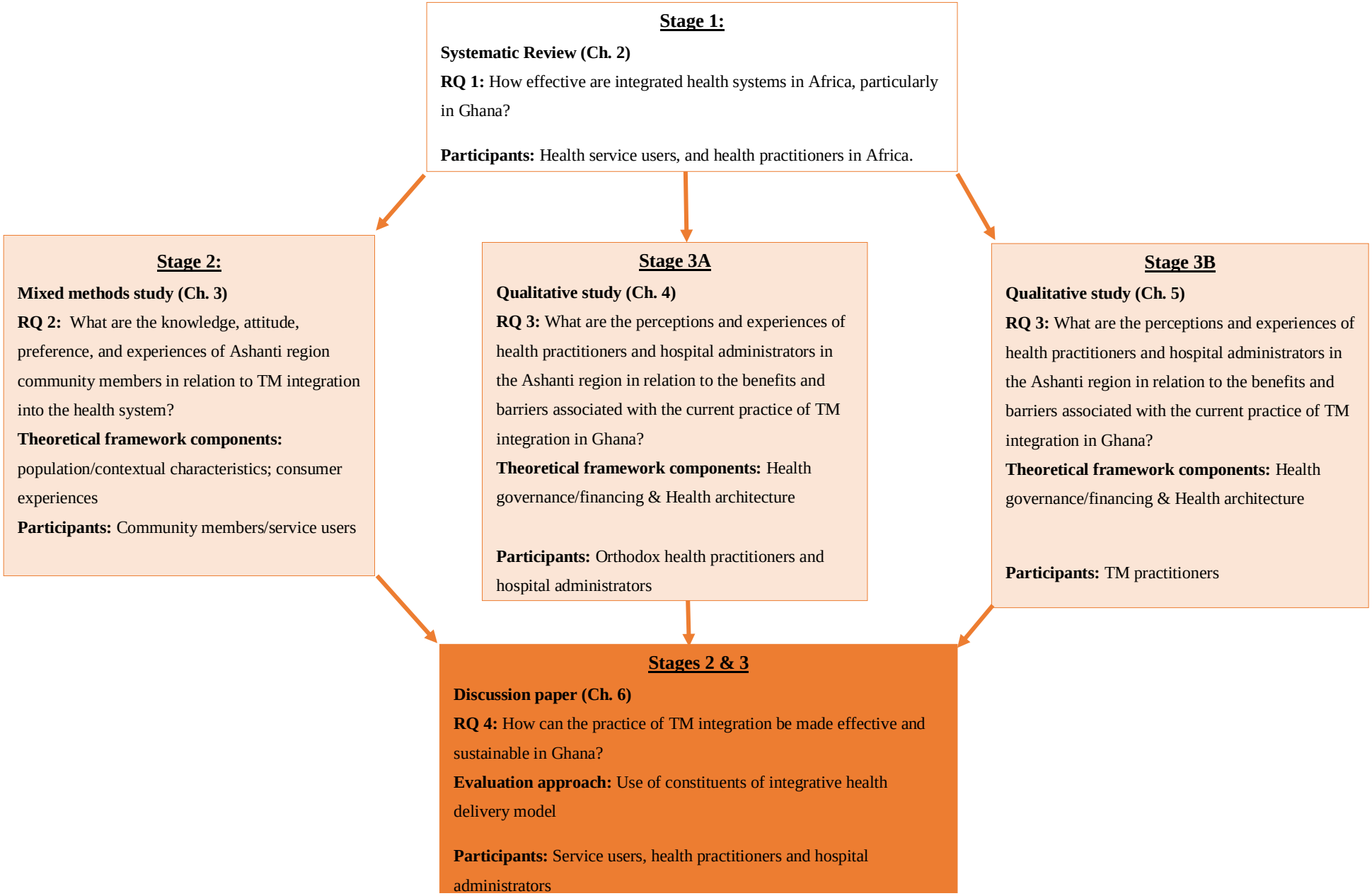

Figure 1.3: Overview of Research Approach

1.8.1 Stage 1: Systematic review – Addressing RQ 1

RQ 1: How effective are integrated health systems in Africa, particularly in Ghana?

Research Methods: A literature review process helps in conducting a detailed, repetitive, and authentic analysis of existing literature in a specific field of study (Crocetti, 2015). The systematic review of African studies that assessed the practice of integrated healthcare was conducted to answer RQ 1. The review adapted the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) guidelines for authentic and precise search evidence and documentation (Moher, Liberati, Tetzlaff, Altman, & Group, 2009). The quality assessment tool for studies with diverse designs (QATSDD) was used to evaluate the methodological quality of selected studies/articles (Sirriyeh, Lawton, Gardner, & Armitage, 2012).

1.8.2 Study setting for Stages 2 and 3

The research conducted in stages 2 and 3 focused on people in Ghana's Ashanti region (specifically, the Kumasi Metropolis and Offinso North district). This is the most populous region in Ghana, with a total population of 4,780,380 (GSS, 2012). The region was chosen because of its population size and high population increase rate of 2.7 % (GSS, 2012). Although the population of the region keeps increasing, the number of health facilities/services remain stagnant, therefore deepening the problem of inadequate healthcare services in the region. Identifying the enablers and barriers to the practice of TM integration into the health system could expand healthcare services, and consequently, the problem of inadequate healthcare services might be addressed. Additionally, the region is multi-cultural which may facilitate the generalisation of study findings. Two specific sites (Kumasi metropolis and Offinso North district) were chosen for the study. Kumasi metropolis, which is the regional capital, has a population size of 1,730,249, representing 36.2 percent of the total population of the region (GSS, 2012) and the availability of health amenities (Figure 1.4).

Offinso North district (Figure 1.4), on the other hand, is the rural setting and selected for several reasons. First, it has the lowest population size of 56,881 representing 1.2% of the

total population of the region. It is predominantly rural because only three (3) out of ninety-five (95) settlements in the district are considered urban (about 58.8% of its population reside in remote areas). Finally, there are only a few government hospitals located in one of the major communities in the district, two health centres, two Community-based Health Planning Services compounds, and one mission clinic (GSS, 2012, 2013b; Ministry of Local Government and Rural Development & Offinso-North District Assembly, 2013).

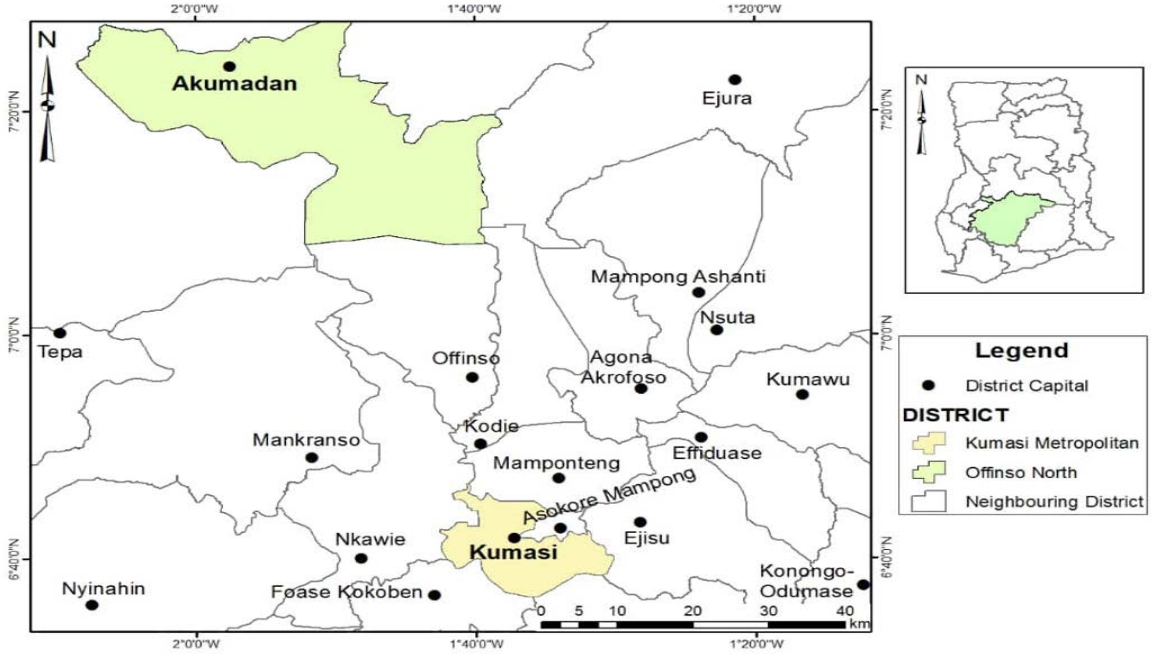

Figure 1.4: Map of Ashanti region showing the study sites (Kumasi metropolis and Offinso North district).

Source: GIS Unit of Department of Geography and Regional Planning (2019).

1.8.3 Ethics

The Ghana Health Service (GHS) Ethics Review Committee and the James Cook University (JCU) Human Research Ethics Committee (HREC) granted approval for the studies presented in this thesis (Appendices A.1 and A.2). The study participants were provided with related information sheets (Appendices B.1 and B.2), where study objectives, their privacy, rights, potential benefits, and risks were clearly spelled out. To ensure consent was fully

granted, both verbal and written consents (Appendices B.3 and B.4) were sought before both stages of the studies commenced.

1.8.4 Philosophical Assumptions

A research paradigm focuses on a set of beliefs or philosophies on which research is situated (Dina, 2012). Positivism, post-positivism and interpretivism are the three research paradigms, which describe the role of researcher values, the nature of the reality and human engagement, how knowledge about a phenomenon is acquired, and the scientific methods adopted in specific research (Creswell, 2014, Ponterotto, 2005). Positivism/quantitative study is established on numbers/probabilistic analysis of a phenomenon. A key principle in quantitative study is the idea of the presence of an empirical world or event that may be investigated (Diaz, 2014). Hence, the quantitative approach to research reduces the investigator's influence on the study to avoid bias from distorting the study conclusions (Diaz, 2014). Positivism turns to focus on theory verification (Ponterotto, 2005). In contrast, qualitative study has its root in interpretivism, realism (Petty, Thomson, & Stew, 2012) and post-positivism (Ponterotto, 2005). A qualitative approach to scientific investigations recognises the likelihood of different angles/perceptions/viewpoints on a phenomenon, making it more subjective in nature (Petty et al., 2012). This research adopted a post-positivism philosophical paradigm, where both positivism (quantitative) and realism (qualitative) paradigms were used. Post-positivism recognises an unbiased reality that is only imperfectly precise (Lincoln & Guba, 2000, Ponterotto, 2005). Hence, focuses on theory falsification (Ponterotto, 2005). I adopted the post-positivism research paradigm because it stresses cause-effect relationships of an event/phenomenon that can be pinpointed, investigated and generalised. It also offers an independent and unbiased researcher role.

The differences in philosophical assumptions underlying quantitative and qualitative research approaches have led to the research paradigm conflict/battle. Even though research conflict exists, a mixed methods research approach, which employs both quantitative and qualitative

scientific methods, has gained admiration in the area of health-related research (Tariq & Woodman, 2013). For example, the United Kingdom Medical Research Council (MRC) has advised that mixed methods research approach should be used in investigating complicated health interventions or situations (Campbell et al., 2000; Skivington et al., 2021). Generally, researchers are moved to incorporate both quantitative and qualitative scientific methods in a single study to derive in-depth meaning about a phenomenon. As a health systems and consumer engagement researcher, I position myself at the midpoint of the research argument. I recognise that quantitative and qualitative scientific methods to research are useful and important to scientific investigations; hence, I employed the two research methods in this thesis.

1.8.5 Stage 2: Mixed Methods Study – Addressing RQ 2

RQ 2: What are the knowledge, attitude, preference, and experiences of community members/service users in relation to TM integration into the health system?

Research Methods: Sequential explanatory mixed-methods research design was used for this study. Sequential explanatory mixed methods employ logical incorporation of quantitative and qualitative approaches within single research to provide a deep understanding of the study findings (Creswell & Plano Clark, 2011). The mixed methods study was conducted in two phases and started with the collection and analysis of quantitative data in the first phase. Lwanga, Lemeshow and World Health Organization's (1991) formula for sample size determination was used to determine the appropriate sample size for the quantitative study (Lwanga, Lemeshow, & Organization, 1991). The sample size calculation indicated that 323 community members/service users were required for the quantitative study. Quantitative research, involving the administration of survey questionnaires, a validated tool developed based on the tenets of the framework for integrating TM (Appendix C.1), facilitated data collection on the knowledge, attitude, and preferences of participants on the practice of TM integration. The quantitative research offered statistically significant findings that could drive the most successful healthcare strategies; however, the study lacked the capacity to explain and

offer a deeper understanding of the quantitative study results (O'Leary, 2014). Therefore, the first phase was followed by a qualitative study (second phase) to provide detailed meaning of lived experiences of the service users (O'Leary, 2014). The results of the quantitative phase informed the development of a semi-structured interview guide (Appendix C.2) employed in the face-to-face individual interviews with 20 participants in the second phase to deeply explore the experiences of community members/service users.

Merging of the two data sets was conducted to derive a deeper understanding of the study results. The merging of quantitative and qualitative data allowed a comparison analysis to provide interpretations of similarities and differences in the study results. The benefit of the mixed methods study is that the qualitative phase was carefully structured depending on what was learned from the quantitative findings, therefore, critical inquiries were addressed, and a deeper understanding of the quantitative findings was achieved (Creswell & Plano, 2018).

Analytical techniques: Statistical Product for Service Solution (SPSS) version 24 software (SPSS Inc., Chicago, IL, USA) was used to analyse the quantitative data. Preliminary data cleaning and coding was in Microsoft Excel prior to entering into the SPSS software. Participants' socio-demographic features and health systems accessibility were determined using descriptive statistics. The independent variables included sex, age, marital status, and educational level among others whereas dependent variables were knowledge about the integrated health system, preference for TM integration, and engagement with the integrated health system. The Chi-square test of association or Fisher's Exact test as appropriate was used to assess the relationship between categorical variables such as participants' demographic features and knowledge about TM integration in Ghana. Multivariable regression analysis was used to assess the prediction (sex, age, marital status, household size, and household monthly income) for TM integration among study participants.

Qualitative data (participants' interviews) were transcribed and crosschecked with original recorded interviews to ensure data accuracy. The data were analysed using NVivo version 12 software (QSR International Pty Ltd, Victoria, Australia). Framework analysis was the analytical approach employed to ascertain the experiences and recommendations of participants in relation to the integration intervention. This approach was suitable for analysing the qualitative data because it presents methodical and observable steps to the analysis procedure (Campbell-Hall et al., 2010). Framework analysis entails five stages namely, familiarisation, identification of thematic framework, indexing, charting, mapping, and interpretation (Appiah et al., 2018; Srivastava & Thomson, 2009).

The population/contextual characteristics and consumer experience components of the framework for integrating TM into national health systems were used to synthesise the results. Member checking, resolution of contradicting evidence as well as researcher verification were applied to advance the trustworthiness of the results (Creswell, 2014; Shaw, 2010). The checklist for consolidated criteria for reporting qualitative research (COREQ) was used to direct and manage the qualitative study (Tong, Sainsbury, & Craig, 2007).

Triangulation of the Results: The data sets were triangulated by merging both quantitative and qualitative results into a mixed-methods study to identify the overall findings and answer the RQ 2. The quantitative findings were compared to describe the characteristics of participants and unique findings relating to health system accessibility. The data were also compared to detect trends and significant associations/predictions, particularly relating to knowledge as well as preference for TM integration. The qualitative findings were compared to explore and identify similarities and/or differences in views raised by the study participants. The comparisons of the quantitative and qualitative findings among the service users allowed for the development of comprehensive knowledge of the issue under study, particularly relating to

their experiences regarding the practice of TM integration and the ways through which the integration process could be improved.

1.8.6 Stage 3: Qualitative Studies – Addressing RQ 3

RQ 3: What are the perceptions and experiences of health practitioners and hospital administrators in relation to the benefits and barriers associated with the current practice of TM integration in Ghana?

Research Methods: Qualitative research methods are used to address questions relating to peoples' experiences, and the meaning of a phenomenon, usually from the standpoint of participants (Hammarberg, Kirkman, & de Lacey, 2016). A qualitative approach to research usually involves the use of an in-depth interview technique and a semi-structured interview guide to understanding peoples' experiences regarding a specific topic or event (Hammarberg et al., 2016). In view of this, qualitative research approach was deemed suitable to explore the perceptions and experiences of health practitioners and hospital administrators in relation to the benefits and barriers associated with the current practice of TM integration in Ghana. The qualitative studies (stages 3A & 3B) were conducted to gather the lived experiences of the people regarding the integration process. This aided in analysing the experiences of the orthodox and TM practitioners as well as hospital administrators regarding the current practice of TM integration. Data were collected using semi-structured interview guides (Appendices C.3, C.4, and C.5) designed based on the framework for TM integration and findings from the mixed methods study (section 1.8.5).

1.8.7 Stages 2 & 3

RQ 4: How can the practice of TM integration be made effective and sustainable in Ghana?

The elements of the integrative health delivery model were used to present the actual health system type and delivery model practiced in Ghana. This section clearly outlines the benefits and barriers associated with the practice of TM integration and demonstrates their alignment

with the framework adapted for the study. In addition, the recommendations from the study participants were synthesised to develop a model that could foster effective TM integration in Ghana.

Quality checks of primary studies

With the quantitative research, Cronbach's alpha was computed to determine the internal consistency of the constructs/questions used in developing the questionnaire. All the constructs had acceptable reliability or internal validity ranging from 0.673 to 0.820, implying that the various constructs indeed measured what they were really meant to measure.

To increase the trustworthiness of the qualitative studies, the four criteria of credibility, transferability, dependability, and confirmability guided the research procedures (Stahl & King, 2020). The trustworthiness of the qualitative studies was supported by primary data narrated by 59 study participants, involving 20 service users, 33 health practitioners, and six hospital administrators. The data collection exercise continued until data saturation was reached, where additional data gathered could not form any new theme or category (Guest, Bunce, & Johnson, 2006).

A framework analysis approach (Srivastava & Thomson, 2009) was employed to analyse the narratives of the participants by performing an inductive analysis of the data, which allowed the themes to emerge freely. This step was followed by deductive analysis to map the emerged themes under the components of the conceptual framework adapted for the research. Moreover, clarifications were sought from participants on an early draft of the transcripts, results, and discussion sections of the studies. This participant validation practice was a means of verifying that the researcher's interpretation of the data typically resonated with what the participants narrated and experienced (Birt, Scott, Cavers, Campbell, & Walter, 2016).

To prevent researcher bias, the study procedures were reviewed at each level of the research analysis and re-reviewed by the supervisory team for confirmation. Reflective

approaches such as researcher reflexivity were employed, in that I monitored the interview sessions, while the supervisory team reviewed and confirmed the emerged themes and their respective categories that emanated from the participants' accounts.

1.8.8 Researcher's Reflexivity

Research reflexivity is a practice where researchers acknowledge and unveil themselves in their research projects (Cohen, 2011). It starts by identifying preconceptions (personal & professional experiences, pre-study beliefs, motivations, qualifications, perspectives, and theoretical foundations) introduced into the study by the researcher (Darwin Holmes, 2020). Therefore, it is important that I indicate my relationship with this research. Being related to a TM beneficiary, health systems researcher, and volunteered as a peer review officer in a health facility, I observed the important services the traditional health system offers to people, and the nature of healthcare service users receive at orthodox health centres in Ghana. This previous knowledge and experience I possess could challenge the credibility and trustworthiness of this research if not tackled. Therefore, I assessed and noted my connection to the data all through the research procedure to offset this potential prejudice (Bourke, 2014).

In addition, the data collection stage including the recruitment of study participants was characterised by impartiality, respect, and mutual indulgence between and among the researcher and the participants (Shaw, 2010). Before the data analysis exercise, a list of all potential biases that could influence the analysis was made and I repeatedly consulted the list to elucidate my assumptions and how they were formed. Reflecting on the reasons that informed my thoughts enabled me to appreciate and understand the experiences of the participants. This strategy aided quality data analysis and enhanced an in-depth understanding of the experiences of the study participants. Finally, the trustworthiness of the research findings was enriched through member checking/validation, participant/data triangulation, supervisor confirmations, and thick description of the study settings.

1.8.9 Expected Outcomes

This thesis provides an opportunity for the assessment of the nature of TM integration into the Ghanaian health system. The research offers a better understanding of the factors promoting or hindering TM integration in Ghana. Findings from the thesis might help improve the practice of TM integration in Ghana. The thesis uncovered the quality of integration, identified the gaps in the integration process, and presented a model to foster effective integration of the two health systems. The focus of the thesis was to assess the proportion of participants with a high or low level of knowledge about the practice of TM integration in Ghana as well as their experience with the integrated health system. The outcome is to present the state or nature of TM integration in Ghana from the viewpoint of stakeholders, specifically, community members/service users, health practitioners, and hospital administrators. The main outcome of the thesis is to describe the conditions that promote or hinder TM integration into the Ghanaian health system.

1.9 Definition of Concepts

- TM integration: In this thesis, the term TM integration signifies combining or absorbing TM into the mainstream or national health system (Asante & Avornyo, 2013).
- Traditional Medicine (TM): “The sum total of all the knowledge and practices, whether explicable or not, used in diagnosis, prevention and elimination of physical, mental and social imbalance and relying exclusively on practical experience and observation handed down from generation to generation, whether verbally or in writing” (World Health Organization, 1978, 2013). In this study, TM refers to unorthodox healthcare services such as the use of medicinal plants, roots, leaves, and barks whether processed or not, that are used for healing purposes (Ampomah et al. 2021).
- TM Practitioner: A person who has received formal education/training in the field of TM and has the license to practice medicine. It also refers to an individual who is known by the community to deliver healthcare services using plants, vegetables, the bark of

trees, animal elements, and other approaches based on the social, cultural, and religious background of the people. He/she also provides services that are in agreement with the customs, beliefs, and practices of the people in the study area (Barimah, 2013).

- Orthodox health system/medicine: It refers to the knowledge, practices, organisation, and social roles of medicine in westernised cultures (Osemene, Elujoba, & Ilori, 2011). Thus, the orthodox health system or medicine comprises the scientific method of promoting health by identifying, treating, and preventing disease. It may be stated as a biomedical, mainstream, modern, or formal health system (Gyasi, 2014).
- Orthodox Health Practitioner: It refers to an individual who has undergone formal medical/clinical training to diagnose, treat and prevent diseases. This includes health practitioners such as medical doctors, pharmacists, and nurses among others (Gyasi, 2014).
- Community members/ Service users: Community members or Service users are people whether ill or well and who have responsibility for their own health (the ability to decide which health care services to access when the need arises) (Gyasi, 2014). A person who uses either traditional, orthodox, or both healthcare services was eligible to participate in the study irrespective of sex. Yet, the study sets an age limit of 18 years and above.
- Geographical setting: Rural/Urban: The grouping of settlements into ‘rural’ and ‘urban’ was centred on the size of the population. This study considers all settlements with 5,000 or more people as urban settlements whereas those with less than 5,000 people as rural settlements (GSS, 2012).

1.10 Thesis structure and Organisation

This thesis consists of seven chapters, all of which are aimed at addressing the research aims and questions mentioned earlier.

- Chapter 1 presents the role TM plays in Ghana and the detailed interventions that have been implemented to integrate TM into the formal health system. The chapter further presents the rationale behind the current research, and theoretical, and methodological techniques employed, which involves the use of Park and Canaway's framework for integrating TM into national health systems. This chapter ends with a summary of the thesis chapters along with how they answer the thesis's research questions.
- Chapter 2 is a systematic review that advances the understanding of the practice of integrated health in Africa, particularly in Ghana. The results of this chapter informed the methodology for the primary studies (Chapters 3, 4, 5), and involved community members/service users, health practitioners, and hospital administrators, therefore contributing to RQ 2, 3, and 4.
- Chapter 3 is the first of the three primary research chapters and involved an administration of a survey questionnaire and interview guide among Ashanti region community members, which provided an understanding of peoples' experiences with the Ghanaian integrated health system. This chapter answered RQ 2. The data from this study contributed to addressing the remaining research questions.
- Chapter 4 is the second primary research chapter, which explored the perceptions, experiences, and recommendations of orthodox health practitioners (medical doctors, pharmacists, nurses) and hospital administrators regarding the practice of TM integration in Ghana. This chapter addressed RQ 3. The findings further explained the experiences of the community members/service users and provided ways in which the practice of integration could be improved, hence a contribution to RQ 2 and 4.
- Chapter 5 is the last of the primary research chapter. This chapter provided a detailed exploration of the perceptions, experiences, and recommendations of TM practitioners in the Ashanti region regarding the practice of TM integration. The data from this study

contributed to addressing mainly RQ 3. The chapter shed more light on the experiences of the community members (RQ 2) and helped in tackling RQ 4.

- Chapter 6 describes the actual health system type and delivery model practiced in Ghana using the elements of the integrative health delivery model. It further presents a model designed based on the recommendation of the study participants, making it custom-made for the Ghanaian setting. The chapter also discusses the implications of the study findings for community members (who are the consumers of healthcare services), health practitioners, hospital administrators, and policymakers. This chapter addresses RQ 4.
- Chapter 7 presents the conclusions and recommendations for practice as well as future research to inform the development or modification of health policies and their implementation to advance the practice of an integrated health system and promote the achievement of universal health coverage in Ghana.

Table 1.1 Thesis Outline, Chapter Details, and Publication Status *

Chapter (Titles)	Chapter Details	Author Contributions	Publication Status
Chapter 1: General Introduction	A concise introduction of the role TM plays in health systems in Africa including Ghana and interventions implemented to integrate TM into the Ghanaian health system. This chapter also discusses the justification for this research, the theoretical/philosophical basis for TM integration, and the methodological approaches utilised.	IGA wrote the introductory chapter, while BSMA, AEOMA, and TIE reviewed each draft before approving the final version.	Not published
Chapter 2: Effectiveness of integrated Health systems in Africa: A Systematic Review	This chapter reviewed available literature on the practice of integrated health systems in Africa. Topics extensively reviewed include interventions implemented to integrate TM into the health systems of some African countries, and the level of awareness, usage, acceptance, and satisfaction of TM integration among stakeholders. Methodological, population, and theoretical gaps were identified. The focus of future studies relating to TM integration in Africa was also stated. The results of this chapter were influential in formulating the research questions for the next four chapters.	IGA designed, conducted the systematic search and quality appraisal of included studies and drafted the manuscript. TIE confirmed the search strategy and independently carried out the quality appraisal checks. BSMA, AEOMA, and TIE reviewed each draft and approved the final version.	Published in ***Medicina*** Doi: 10.3390/medicina56060271

Chapter 3: The practice of integrated healthcare and the experiences of people in Ghana's Ashanti region	This mixed-methods study employed the administration of questionnaires and an interview guide focusing on residents of Kumasi metropolis and Offinso North district. The study assessed peoples' experiences with TM integration into the Ghanaian health system. The experiences of the people revolved around population features, psychosocial factors, health system accessibility, preference for TM integration, knowledge about integration, and the satisfaction derived from accessing the various health systems.	IGA designed the survey questionnaire, and interview guide and wrote the ethics application. BSMA and TIE reviewed the questionnaire and interview guide. AAS and IGA conducted the data collection. IGA, BSMA, and TIE analysed the data. IGA wrote the manuscript and BSMA, AEOMA and TIE reviewed the final manuscript.	Published in ***BMC Health Services Research*** https://doi.org/10.1186/s12913-021-07340-0
Chapter 4: Perceptions and experiences of orthodox health practitioners and hospital administrators towards integrating traditional medicine into the Ghanaian health system	This qualitative study administered an interview guide among orthodox health practitioners and hospital administrators in Kumasi metropolis and Offinso North district, which sought their perceptions and experiences regarding TM integration. The issues identified included knowledge about TM integration, quality of healthcare delivered, communication between and among health practitioners and service consumers, health system financing (health insurance scheme), and TM regulations in Ghana.	IGA designed the interview guides and the guides were reviewed by BSMA and TIE. IGA wrote the ethics application. AAS and IGA conducted the data collection. IGA and BSMA analysed the data. Data analysis was confirmed by AEOMA and TIE. IGA wrote the manuscript and BSMA, AEOMA and TIE reviewed the manuscript.	Published in ***International Journal of Environmental Research and Public Health*** **(IJERPH)** https://doi.org/10.3390/ijerph182111200

Chapter 5: Integrating traditional medicine into the Ghanaian health system: perceptions and experiences of traditional medicine practitioners in the Ashanti region	This chapter employed a qualitative research approach by administering an interview guide among TM practitioners in Kumasi metropolis and Offinso North district, which explored their perceptions and experiences regarding TM integration in Ghana. The study included the practitioners' knowledge about TM integration, the quality of healthcare delivered in the system, communication between and among health practitioners and service consumers, health insurance coverage, and TM regulations in Ghana including training on TM.	IGA designed the interview guide and the guide was reviewed by BSMA and TIE. IGA wrote the ethics application. AAS and IGA conducted the data collection. IGA and BSMA analysed the data. Data analysis was also confirmed by AEOMA and TIE. IGA wrote the manuscript and BSMA, AEOMA and TIE reviewed the manuscript.	Published in ***International Health*** https://doi.org/10.1093/inthealth/ihac059
Chapter 6: General Discussion: From talk to action: Developing a model to foster effective integration of traditional medicine into the Ghanaian healthcare system	A discussion of collective results of the research based on the elements of integrative health delivery model. These elements were used to demonstrate the current practice of integration from the perspectives of all the participants. The chapter further presents a model designed based on the recommendations of the participants, which is suitable for the Ghanaian setting.	IGA wrote the manuscript, while BSMA, AEOMA, and TIE reviewed each draft and approved the final version of the manuscript.	Under review: ***Journal of integrative medicine*** Manuscript ID: JIM-09-2022-RE-0675

Chapter 7: General Conclusions and Recommendations	This chapter presents the overall summary of the thesis, recommendations for improved TM integration, and direction for future research. The chapter describes the adoption of a holistic approach to the implementation of the integration intervention by inculcating the views of all stakeholders.	IGA wrote the conclusions and recommendations chapter. BSMA, AEOMA, and TIE reviewed each draft before the final approval.	Not published

*Chapters 2-6 are publication-based chapters in this thesis

Chapter 2: Effectiveness of Integrated Health Systems in Africa: A Systematic Review (Doi: 10.3390/medicina56060271)

2.1 Chapter Overview

Abstract: Traditional medicine (TM) was integrated into health systems in Africa due to its importance within the health delivery setup in fostering increased health care accessibility through safe practices. However, the quality of integrated health systems in Africa has not been assessed since its implementation. The objective of this paper was to extensively and systematically review the effectiveness of integrated health systems in Africa.

A systematic literature search was conducted from October 2019 to March 2020 using Ovid Medline, Scopus, Emcare, Web of Science, CINAHL as well as Google Scholar to retrieve original articles, which evaluated the integration of TM into health systems in Africa. A quality assessment of relevant articles was also carried out using the QATSDD critical appraisal tool.

Results indicated that formulation and execution of health policies was the main measure taken to integrate TM into health systems in Africa. The review also highlighted relatively low levels of awareness, usage, satisfaction, and acceptance of integrated health systems among the populace. Knowledge about existence of integrated system varied among study participants, while satisfaction and acceptance were low among orthodox medicine practitioners. Health service users' satisfaction and acceptance of the practice of integrated health system were high in the countries assessed.

The review concluded that existing health policies in Africa are not working hence integration of TM has not been successful. It is critical to uncover the barriers in the health system by exploring perceptions and experiences of stakeholders to bring forth solutions for better integration of the two health systems.

2.2 Introduction

Traditional medicine (TM) refers to the sum total of all explicable knowledge and practices used in diagnosis, prevention and elimination of physical, mental and social imbalance. TM relies exclusively on practical experience and observation handed down verbally or in writing from generation to generation (World Health Organization, 1978). TM use is increasing in both developed and developing countries. For example, the proportion of residents who have patronised TM at least once in developed countries is 38% in Belgium, 42% in United States of America, 48% in Australia, 70% in Canada and 75% in France (World Health Organization, 2002).

TM use is reported to be more popular in Africa, Asia and Latin America since 80% of the population continue to depend on TM for their primary healthcare needs (Oreagba et al., 2011; World Health Organization, 2002). High frequency of TM use in Africa has been attributed to reasons such as TM being economical, socially and culturally acceptable within the African setting (Ahlberg, 2017; Krah et al., 2018; Shaikh & Hatcher, 2005). Additionally, TM has proven to be effective in managing and treating tropical maladies and other ailments such as epilepsy, hypertension, insomnia, ovarian cancer, convulsion, stroke, boils, tuberculosis, infertility, hernia, malaria among others (Oreagba et al., 2011; Shaikh & Hatcher, 2005; Yu, Ma, Drisko, & Chen, 2013).

In Nigeria for instance, *Rauwolfia vomitoria*, a medicinal herb in the *Apocynaceae* family, is used to manage disease conditions such as; insomnia, convulsion, stroke and hypertension (Oreagba et al., 2011). Traditional birth attendants in South Africa use TM with muscle relaxant characteristics to aid safe delivery of babies (Oreagba et al., 2011). Aloe vera, black seed, black cohosh and other TM plants (Cohen, Rousseau, & Robinson, 2000) are acknowledged for their outstanding health promotion and disease prevention benefits (Cohen, Rousseau, & Robinson, 2000). Studies have reported that TM continues to be an essential ingredient of a number of medications currently used for the management of heart diseases,

fevers, pain therapies and other health problems (Calixto, 2000; Oreagba et al., 2011). For instance, Artemisinin a derivative of the medicinal plant '*Artemisia annua*' is the origin of a suite of efficient antimalarial drugs (Oreagba et al., 2011). Recognition of the important role TM plays in health delivery (high prevalence and medicinal benefits) led to its integration into various health systems around the world including Africa (Ahlberg, 2017).

Integration has been defined as the act of broadening the scope of health delivery through communication, participation, accommodation and partnership building between biomedical and traditional health systems while safeguarding indigenous medical knowledge (Sambo, 2003). The sole purpose of an integrated health system is to offer quality healthcare to the population equally and satisfactorily while averting unnecessary cost (Kruk & Freedman, 2008). A booming integrated health system is likely to promote the proper use of indigenous medical knowledge and boost the development of health systems (self-adequacy), particularly in poor income countries (Gyasi et al., 2017).

Asian countries such as Korea, Japan, China, India, Sri Lanka, and Vietnam have successfully integrated TM into their health system (Gyasi et al., 2017; Keji & Hao, 2003). The practice of TM in these countries is founded on logical and comprehensive methods as well as clinical experiences (Keji & Hao, 2003). For example, in China, biomedical doctors are trained in the field of TM practice in order to support competent TM practitioners in health centres, embrace treatment processes based on TM principles, gain understanding from experienced TM practitioners and study the curative effect of TM treatment with the diagnosis and model of orthodox health system. This approach did not only boost the confidence of biomedical doctors in the field of TM but also improved and sustained collaboration between the two health systems (Keji & Hao, 2003). The Chinese success story in the field of integrated health is also illustrated by a rise in registered Chinese TM practitioners in United States of America (Patwardhan, Warude, Pushpangadan, & Bhatt, 2005). India has also boosted its integrated

system through the incorporation of repayment of medical costs incurred by utilising TM products and services. Thereby, Indians who work in the public sector get reimbursed monies spent on TM products and services (Kumar, 2000).

African countries have also made efforts to integrate TM into formal health systems (Ahlberg, 2017). Such countries include: Benin, Burkina Faso, Cameroon, Cote d'Ivoire, Equatorial Guinea, Ghana, Guinea, Mali, Mozambique, Niger, Nigeria, Republic of Congo, among others (Sambo, 2003; Vasconi & Owoahene-Acheampong, 2010). For example, Ghana instituted a council in the year 2010 to regulate the activities of TM practice and, in 2012; registered TM practitioners were allowed to practice medicine (Agyei-Baffour et al., 2017). Similarly, Nigeria also formulated the National Policy on TM Code of Ethics and creation of national and states TM boards to oversee the practice, boost partnership and research in the field of TM (Osuide, 2002).

Most African countries ascribe to parallel/inclusive model of health systems integration. An inclusive model is a system where TM and biomedical healthcare are separate elements of the health system, but both systems are expected to interact and work jointly to deliver quality health services to clients (Sambo, 2003; Vasconi & Owoahene-Acheampong, 2010). However, the effectiveness of integration of TM into health systems to offer quality health services to the African populace is unexplored. Therefore, this systematic review presents a comprehensive assessment of published literature on the effectiveness of integrated health systems in Africa. The primary measures of effectiveness in this study are awareness, usage, satisfaction and acceptance of integrated health system among study populations.

2.3 Materials and Methods

2.3.1 Defining 'integration of TM'

In this systematic review, TM integration refers to any research that has focused on the incorporation of herbal/indigenous medicines including bonesetters, into health systems. Integrated health systems also include partnership between orthodox and traditional health

service providers. The Preferred Reporting Items for Systematic Review and Meta-analysis guidelines [PRISMA] was adapted for this review (Moher et al., 2009).

Literature search was performed from October 2019 to March 2020 using Ovid Medline, Scopus, Emcare, Cumulative Index to Nursing and Allied Health [CINAHL], Web of Science as well as Google Scholar to retrieve original articles on integration of TM into health systems in Africa. Various keywords or synonyms were used in the search strategy to expand the search term because a number of terms have been used in the literature to refer to the same concept. Although the review is on effectiveness of integrated health systems in Africa, the words 'effective' and 'Africa' were not included in the search terms to avoid restriction of the search. Africa was precluded from the search term to avoid excluding articles reporting research conducted in Africa but without the word 'Africa' in their titles. Minor differences exist in the search terms, which are dependent on the type of database and search engine (Supplementary Table 2.1).

Table 2.1: Search strategy for effectiveness of integrated health systems

Database	Search terms
Ovid Medline	1. "Delivery of HealthCare, Integrated"/ 2. "Delivery of HealthCare"/ 3. integrated health system*.mp. 4. hospitals/ or exp health services/ or community health services/ 5. ((integrated or holistic) and health and (system* or clinic* or service*)).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms] 6. 1 or 2 or 3 or 4 or 5 7. exp medicine, traditional/ or spiritual therapies/ or faith healing/ or medicine, african traditional/ 8. (alternative medicine* or alternative therap* or complementary medicine* or complementary therap or "faith healing" or "spiritual therap*" or "spiritual medicine*" or "traditional medicine*" or "indigenous medicine*" or "native medicine*" or "herbal medicine*").mp. 9. 7 or 8 10. 6 and 9 11. 1 or 2 or 3 or 5 12. 9 and 11

Scopus	((TITLE-ABS-KEY (integrated OR holistic) AND TITLE-ABS-KEY (health) AND TITLE-ABS-KEY (system* OR clinic* OR service*))) AND ((TITLE-ABS-KEY ("alternative medicine*" OR "alternative therap*" OR "complementary medicine*" OR "complementary therap*" OR "faith healing" OR "spiritual therap*" OR "spiritual medicine*" OR "traditional medicine*" OR "indigenous medicine*" OR "native medicine*") OR TITLE-ABS-KEY ("herbal medicine*")))
Emcare	1. integrated healthcare system/ 2. (alternative medicine* or alternative therap* or complementary medicine* or complementary therap or "faith healing" or "spiritual therap*" or "spiritual medicine*" or "traditional medicine*" or "indigenous medicine*" or "native medicine*" or "herbal medicine*" or "integrative medicine").mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword] 3. traditional medicine/ or african medicine/ or herbal medicine/ 4. alternative medicine/ or spiritual healing/ 5. integrative medicine/ 6. 2 or 3 or 4 or 5 7. ((integrated or holistic) and health and (system* or clinic* or service*)).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword] 8. 1 or 7 9. 6 and 8
CINAHL	1 (MH "Health Care Delivery, Integrated") OR (MH "Systems Integration") 2 ((integrated or holistic) and health and (system* or clinic* or service*)) 3 1 OR 2 4 (MH "Medicine, Herbal") OR (MH "Spiritual Healing") OR (MH "Medicine, Traditional") OR (MH "Medicine, African Traditional") OR (MH "Integrative Medicine") 5 (alternative medicine* or alternative therap* or complementary medicine* or complementary therap or "faith healing" or "spiritual therap*" or "spiritual medicine*" or "traditional medicine*" or "indigenous medicine*" or "native medicine*" or "herbal medicine*" or "integrative medicine") 6 4 OR 5 7 3 AND 6
Web of Science	**Topic:** (integrated OR holistic) *AND* **TOPIC:** (health) *AND* **TOPIC:** (system* OR clinic* OR service*) *AND* **TOPIC:** ("alternative medicine*" OR "alternative therap*" OR "complementary medicine*" OR "complementary therap*" OR "faith healing" OR "spiritual therap*" OR "spiritual medicine*" OR "traditional medicine*" OR "indigenous medicine*" OR "native medicine*" OR "herbal medicine*") **Timespan:** All years. **Indexes:** SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI, CCR-EXPANDED, IC**....**
Google Scholar	("Traditional medicine" OR "herbal medicine" OR "alternative medicine" OR "indigenous medicine" OR "complementary medicine") AND integrated

2.3.2 Eligibility Criteria

There were no restriction on time and type of study but study setting was limited to Africa. Articles included in this systematic review are primary studies published in peer-reviewed journals, which reported on measures taken to aid TM integration into health systems and the effectiveness of such integrated systems. Studies, which referred to TM as herbal/indigenous medicine, were selected for the review. The review excluded the following: Systematic reviews, theses, non-English articles and other articles with animals as target population.

2.3.3 Selection and Extraction of Data

I.G.A identified relevant articles and T.I.E replicated the search to confirm the search strategy. Uncertainties regarding the included studies were resolved by discussion until a consensus was reached. Characteristics obtained from included studies were target population, type of study, methodology, measures taken to integrate TM, summary of findings/results and effectiveness of TM integration. However, interventions implemented to integrate TM into formal health systems were the key inclusion criteria.

2.3.4 Data Synthesis

The included studies were evaluated based on interventions implemented to integrate TM into formal health systems and key findings in relation to effectiveness of the integrated health system. It is worth mentioning that effectiveness was inferred from findings and conclusions of various studies. This is because effectiveness of integrated health systems was described rather than explicitly stated in the findings. Inference was conducted by evaluating level of awareness, usage, satisfaction and acceptance of the integration of TM among target populations.

Awareness was inferred based on self-reported knowledge of the introduction of TM into health system while usage was deduced from the interaction between stakeholder groups (orthodox and TM practitioners, health service users). Satisfaction was deduced based on

fulfilment participants derived from the system and acceptance was gleaned based on the value participants placed on their role and the role of other stakeholders in the integration agenda. With quantitative studies, percentage scores correlating to inferred knowledge, usage, satisfaction and acceptance which were less or equated to 39% were deemed low (Madiba, 2010) while 40% and above were assumed to be moderate/positive indicators (Agyei-Baffour et al., 2017). Similar inferences were conducted on qualitative studies and representative quotes were used to support inferences drawn.

2.3.5 Quality of Methods Assessment

Quality Assessment Tool for Studies with Diverse Designs (QATSDD) developed by Sirriyeh et al., was used in evaluating the quality of included studies (Sirriyeh et al., 2012). The tool was adopted because it was applicable in all instances since the review identified and included all types of studies. The tool is made up of sixteen (16) criteria, all the criteria were applicable to the mixed methods study while qualitative, and quantitative studies were assessed using fourteen (14) of these criteria. Each criterion on the list is allotted a score of zero (0) to three (3), where 0 represents 'criterion not mentioned at all', 1 represents 'very slightly mentioned' 2 for 'criterion moderately stated' and 3 was a 'vivid explanation' of the criterion. In view of this, the highest mark for the mixed methods study was 48 (16×3) and 42 (14×3) was the highest mark for qualitative and quantitative studies, respectively. Total scores of included studies were further converted to percentages. For example, a mixed methods study with a score 48 out of 48 equates to 100 percent (48/48×100 = 100). The percentage scores were further categorised into three (3) groups such that an article is considered excellent if the percentage score was 80 and above, good if scores ranges between 50 to 79 and low if score was below 50 percent (Table 2.4).

2.4 Results

Six thousand, nine hundred and ninety-five (6,995) articles were identified from five databases and a Google Scholar search. Two thousand seven hundred and forty-four (2,744)

duplicates were removed leaving 4,251 articles. Ninety-three (93) articles were retained after title and abstract screening. Thirteen (13) out of the 93 articles met all the inclusion criteria after full text screening (see Figure 2.1).

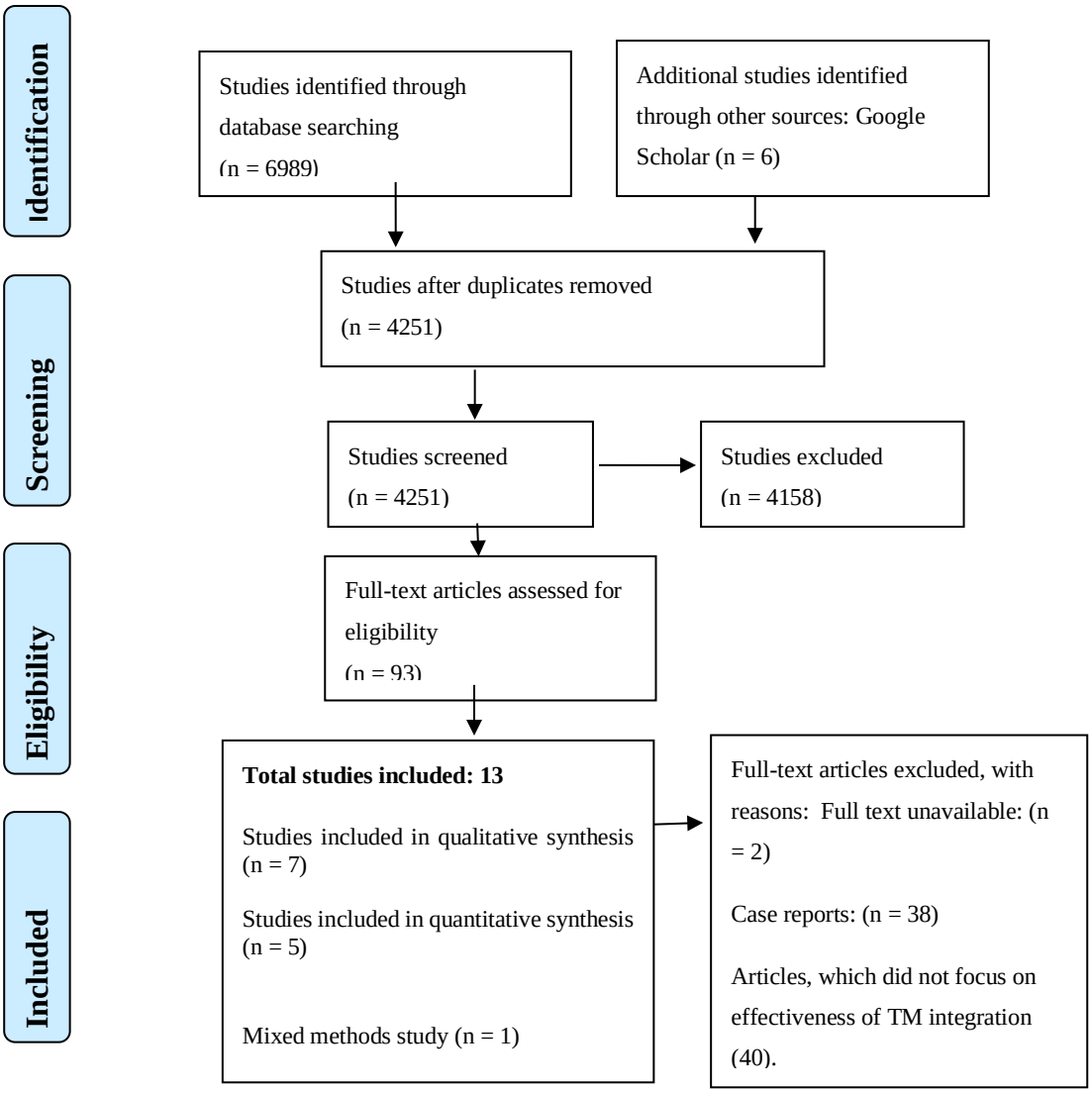

Figure: 2.1: PRISMA flow diagram of included studies (Moher et al., 2009).

2.4.1 Distribution of Reviewed Articles

Thirteen articles were included in the review. Five (38.5%) of the articles originated from Ghana (Agyei-Baffour et al., 2017; Ahenkan et al., 2019; Appiah et al., 2018; Boateng et al., 2016; Gyasi et al., 2017). Three studies (23.1%) were conducted in South Africa (Campbell-Hall et al., 2010; Maluleka & Ngoepe, 2019; Nemutandani, Hendricks, & Mulaudzi, 2016). The remaining

five studies were carried out in Burundi (Falisse, Masino, & Ngenzebuhoro, 2018), Botswana (Madiba, 2010), Cameroon (Agbor & Naidoo, 2011), Nigeria (Awodele, Agbaje, Ogunkeye, Kolapo, & Awodele, 2011) and Zambia (Kaboru et al., 2006). The reviewed studies were conducted over a period of thirteen years. The earliest study (Kaboru et al., 2006) was conducted in 2006 while the latest studies were carried out in 2019 (Ahenkan et al., 2019; Maluleka & Ngoepe, 2019). Figure 2.2 shows the number of included studies from different countries in Africa.

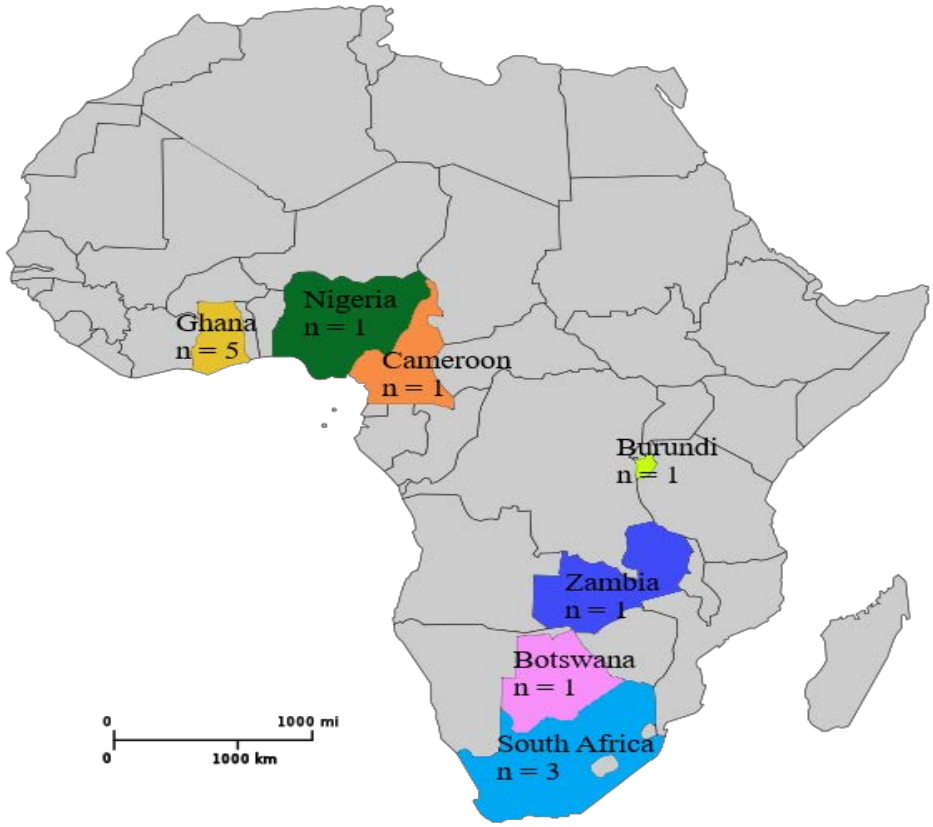

Figure 2.2: Map of Africa displaying the number of studies originating from various countries Wikimedia Commons (2019) Accessed: 16th December 2019.

2.4.2 Characteristics of Reviewed Articles

Of the 13 included studies (Figure 2.2), seven were qualitative and five quantitative studies. Only one was a mixed methods study. Two of the qualitative studies used phenomenology approach (qualitative research which emphasises on similarities in lived

experiences within a specific group of people) in achieving study objectives (Boateng et al., 2016; Maluleka & Ngoepe, 2019), while one study (Gyasi et al., 2017) used inductive reduction approach. Ethnography (qualitative research in which the researcher defines and interprets common and learnt forms of behaviour, values, beliefs and language of a culture-sharing group) was employed as research design for the qualitative aspect of the mixed method study (Falisse et al., 2018). However, three of the qualitative studies did not state the research design used (Appiah et al., 2018; Campbell-Hall et al., 2010; Nemutandani et al., 2016). All quantitative studies used cross-sectional design in achieving study objectives (Agbor & Naidoo, 2011; Agyei-Baffour et al., 2017; Awodele et al., 2011; Kaboru et al., 2006; Madiba, 2010).

As shown in Table 2.2, four studies targeted health practitioners and patients as study participants (Boateng et al., 2016; Campbell-Hall et al., 2010; Falisse et al., 2018; Gyasi et al., 2017). Two studies focused only on health practitioners (Ahenkan et al., 2019; Kaboru et al., 2006). Two other studies solely targeted TM practitioners (Awodele et al., 2011; Maluleka & Ngoepe, 2019); while another, two focused on orthodox medicine practitioners (OMPs) (Madiba, 2010; Nemutandani et al., 2016). One study assessed both TM practitioners and community members (Agbor & Naidoo, 2011). Another study also considered people interested in TM research as target population (Appiah et al., 2018). The last reviewed article targeted only patients (Agyei-Baffour et al., 2017). More focus was placed on TM practitioners as nine of included studies sampled TM health providers as study participants (Agbor & Naidoo, 2011; Ahenkan et al., 2019; Awodele et al., 2011; Boateng et al., 2016; Campbell-Hall et al., 2010; Falisse et al., 2018; Gyasi et al., 2017; Kaboru et al., 2006; Maluleka & Ngoepe, 2019). Only one study included key informants: Faculty of Pharmacy [FOP], Ghana Federation of Traditional Medicine Practitioners [GFTMP], Medical Herbalist Association [MHA], Hospital Management [HM] and Pharmaceutical Directorate of Ministry of Health [PDMH] as part of the study group (Boateng et al., 2016).

The sample size of quantitative articles ranged from 60 (Madiba, 2010) to 6, 690 (Falisse et al., 2018) participants. The most common sampling technique employed by quantitative studies was convenient sampling procedure (Agbor & Naidoo, 2011; Madiba, 2010). Other techniques used were systematic (Agyei-Baffour et al., 2017) and stratified sampling (Falisse et al., 2018). Two studies (Awodele et al., 2011; Kaboru et al., 2006) failed to state the sampling techniques employed in choosing participants for the study.

For qualitative studies, it ranged from 27 (Maluleka & Ngoepe, 2019) to 37 participants (Campbell-Hall et al., 2010). Purposive sampling technique was widely used among qualitative studies (Appiah et al., 2018; Boateng et al., 2016; Campbell-Hall et al., 2010; Nemutandani et al., 2016). Another sampling approach used was snowballing (Falisse et al., 2018; Gyasi et al., 2017). However, one study combined both snowballing and purposive sampling techniques in participant selection (Ahenkan et al., 2019). One qualitative study failed to mention the type of sampling technique employed in choosing participants for the study (Maluleka & Ngoepe, 2019).

Generally, all reviewed articles assessed the perception, knowledge, acceptability and satisfaction of study participants in relation to TM integration. The review inferred effectiveness of integrated health systems on the premise of participants' awareness, usage, satisfaction and acceptability of TM integration into formal health systems. Twelve of the studies disclosed that integrated health systems in Africa were not effective (Agbor & Naidoo, 2011; Ahenkan et al., 2019; Appiah et al., 2018; Awodele et al., 2011; Boateng et al., 2016; Campbell-Hall et al., 2010; Falisse et al., 2018; Gyasi et al., 2017; Kaboru et al., 2006; Madiba, 2010; Maluleka & Ngoepe, 2019; Nemutandani et al., 2016). Ineffective TM integration was appraised based on: low level of participants' knowledge about TM integration into health systems, minimal interaction among stakeholders within the integrated system, inadequate satisfaction derived from accessing or practicing in the system and power imbalance within the

integrated systems. Only a single study reported moderate/good indicators about the integrated health system among study participants (Agyei-Baffour et al., 2017).

Table 2.2: Characteristics of studies on effectiveness of integrated health systems in Africa.

Reference	Study setting	Target group/size	Study type	Study design	Aims/objectives	Sampling technique	Summary of findings
Boateng et al., 2016	Ghana: Kumasi South Hospital	1 FOP, 1 PDMH, 1 MHA, 1 GFTMP, 1 HM Patients: 10 (biomedical), 6 (TM clinic), 2 biomedical practitioners, 2 medical herbalist, 8 nurses (biomedical), 1 nurse (herbal clinic)	Qualitative	Phenomenology	Explored integration of traditional and biomedical health services within Kumasi South hospital	Purposive sampling	Stakeholders had varying understanding concerning integration. This was because of the non-existence of a well-defined protocol to guide the integration process.
Agbor & Naidoo, 2011	Cameroon: Bui division	21 Traditional Medicine Practitioners (TMPs) and 52 Inhabitants of Bui who sought treatment in hospitals or Traditional healers for oral problems	Quantitative	Cross-sectional	Evaluated the knowledge and practices of TMPs	Convenience sampling	TMPs play significant role in health delivery in Bui Province yet their integration into main health system is weak due to inadequate professional education on the part of TMPs.
Agyei-Baffour et al, 2017	Ghana: Kumasi	Patients from the 3 facilities with TM units in Ashanti region: 212 Kumasi South hospital 112 Tafo hospital 174 Suntreso government hospital	Quantitative	Cross-sectional	Determine client perception, disclosure and acceptability of integrating herbal medicine in mainstream healthcare in Kumasi	Systematic sampling	The practice of an integrated health system was reported to be feasible as satisfaction and acceptance level among participants were high.
Ahenkan et al., 2019	Ghana: Wenchi municipality	35 Orthodox and TMPs	Qualitative	Relational analysis	Aimed to bridge the existing information and knowledge gaps on the integration of two districts and competing health systems.	Snowballing/purposive	The integrated health system in Ghana was said to be inefficient because regulatory mechanisms were unknown to health practitioners. This according to the study was due to inefficient policy implementation, slow pace of executing

							regulations governing TM practice in Ghana.
Appiah et al., 2018	Ghana	22 KNUST 1 Centre for plant medicine research 2 piloted hospitals	Qualitative	Not stated	Identified the strengths and weaknesses of integration of traditional medicine into existing biomedical practice in Ghana.	Purposive sampling	Integrated health system in Ghana was recounted to be ineffective due to inadequate publicity, documentation and effort from policy makers.
Awodele et al., 2011	Nigeria: Mushin; Lagos	170 Traditional medicine practitioners (TMPs)	Quantitative	Cross-sectional	Explored TMPs disposition towards integration of Traditional medicine	Not stated	The willingness of TMPs to improve their practice was a factor identified to boost integration while lack of regulatory protocol undermined integration.
Campbell-Hall et al., 2010	South Africa: KwaZulu-Natal	15 Formal health practitioners 1 NGO workers 6 TMPs 15 Health users	Qualitative	Not stated	Explored perceptions of service users and providers of the current interactions and mechanisms for increasing collaboration between formal health practitioners and TMPs.	Purposive sampling	Willingness of TMPs was a positive indicator of collaboration. Yet, they felt unappreciated in the integrated system. TMPs were ready to learn the modern style of providing care to users to maximize their value in the integrated process.
Falisse et al., 2018	Burundi	12 Indigenous healers 36 Biomedical professionals 6,690 Healthcare users	Mixed method	Ethnography	Sought to advance the debate on the possibility and usefulness of integration within socio-politically unstable setting of Burundi	Stratified sampling and snowballing	The nature of integrated health system was deemed weak though the idea of integration was popular among participants. The weak nature of integration was attributed to skewed power

							dynamics in the integrated system
Gyasi et al., 2017	Ghana: Sekyere south district and Kumasi metropolis	16 Healthcare users 7 TMPs 6 Health professional	Qualitative	Inductive reduction approach	Explored health care users' and providers' experiences and attitudes towards the implementation of inter-cultural health care policy in Ghana	Snowballing	There was a positive attitude towards integration with high awareness level but inadequate institutional support and regulatory policies were revealed to impede the integration process.
Kaboru et al., 2006	Zambia: Ndola, Kabwe	172 Orthodox medicine practitioners 144 TMPs	Quantitative	Cross-sectional	Explored biomedical and TMPs experiences of ad attitudes towards collaboration.	Not stated	Low level of integration was reported in Zambia but perceived importance of the system was high among health providers. The ineffectiveness of the integrated system was attributed to policy on environment, logistics constraints and orthodox practitioners distrust in TMPs.
Madiba, 2010	Botswana: Tutume	60 Orthodox medicine practitioners	Quantitative	Cross-sectional	Determined biomedical health practitioners views on collaboration with TMPs.	Convenience sampling	Findings of the study disclosed that collaboration is skewed. The progress of collaboration is thwarted by absence of specific guidelines on integration.
Maleluka & Ngoepe, 2019	South Africa: Limpopo province	27 Traditional healers	Qualitative	Hermeneutic phenomenology	Developed a framework to integrate knowledge of traditional healing into mainstream healthcare system	Not stated	Demeaning TM practice by not providing adequate support undermined the effectiveness of the integrated system.
Nemutandani et al., 2016	South Africa: Vhembe district, Limpopo Province	77 Orthodox medicine practitioners	Qualitative	Not stated	Assessed the perception and experiences of	Purposive sampling	Findings of the study reported that allopathic practitioners thought

		allopathic health practitioners on collaboration with TMPs in the new Democratic South Africa.	of collaboration as compromising health of service users. Integrated health system in South Africa is not efficient because modern health providers look down on TMPs.

Faculty of Pharmacy [FOP], Ghana Federation of Traditional Medicine Practitioners [GFTMP], Medical Herbalist Association [MHA], Hospital Management [HM], Pharmaceutical Directorate of Ministry of Health [PDMH]

2.4.3 Evaluation of Effectiveness of Integrated Health Systems in Africa

2.4.3.1 Interventions Implemented to aid Integration of TM into Health Systems in Africa

The official practice of TM started in the early 1980's (Agbor & Naidoo, 2011). This means that the practice of integrated health system in Africa has being in operation for approximately 39 years (Table 2.3). All reviewed articles acknowledged that TM integration was initiated through the formulation and execution of health policies (Agbor & Naidoo, 2011; Agyei-Baffour et al., 2017; Ahenkan et al., 2019; Appiah et al., 2018; Awodele et al., 2011; Boateng et al., 2016; Campbell-Hall et al., 2010; Falisse et al., 2018; Gyasi et al., 2017; Kaboru et al., 2006; Madiba, 2010; Maluleka & Ngoepe, 2019; Nemutandani et al., 2016). Countries such as Burundi, Ghana and South Africa moved a step further by implementing other measures to facilitate the integration process. For example, in Burundi, the association of TM practitioners was formed and an integrative medicine unit was created in the ministry of health (Falisse et al., 2018). In Ghana, the government instituted the Traditional Medicine Practice Council (TMPC), established a TM directorate in the ministry of health and introduced TM into the tertiary education system (Agyei-Baffour et al., 2017; Appiah et al., 2018; Gyasi et al., 2017). In South Africa, a council was created to oversee the activities of TM practitioners (Maluleka & Ngoepe, 2019).

2.4.3.2 Awareness as Measure of an Effective Integrated Health System:

Varying levels of awareness was observed among review articles. Seven studies reported low level of awareness about the existence of integrated health systems in their countries (Agbor & Naidoo, 2011; Ahenkan et al., 2019; Awodele et al., 2011; Boateng et al., 2016; Kaboru et al., 2006; Madiba, 2010; Nemutandani et al., 2016). For example, Kaboru et al. (2006) recounted that a lower proportion (24%) of study participants claimed knowledge of the practice of an integrated health system in Zambia. A similar result was observed in the work

of Madiba (2010) where only 18.6% of participants knew of the integrated health system in Botswana. The knowledge gap was more profound in the area of availability of TM policy, which regulates activities of practitioners. However, six studies reported moderate level of awareness among study participants (Agyei-Baffour et al., 2017; Appiah et al., 2018; Campbell-Hall et al., 2010; Falisse et al., 2018; Gyasi et al., 2017; Maluleka & Ngoepe, 2019). For instance, a study conducted in Ghana reported that 42.2% of participants knew about the presence of TM units in the study sites (Agyei-Baffour et al., 2017) and 91% of orthodox medicine practitioners in Burundi were also aware of the integrated health system (Falisse et al., 2018). Participants attributed their source of knowledge to the interaction between traditional and orthodox health practitioners, but also admitted that integration was weak (Table 2.3).

2.4.3.3 Usage as Measure of an Effective Integrated Health System in Africa:

Usage of integrated health system was inferred as the interaction between stakeholders (orthodox medicine practitioners, TM practitioners, health care users) within the health system. A total of ten articles reported low usage of the health system among study participants (Agbor & Naidoo, 2011; Ahenkan et al., 2019; Appiah et al., 2018; Awodele et al., 2011; Boateng et al., 2016; Falisse et al., 2018; Gyasi et al., 2017; Madiba, 2010; Maluleka & Ngoepe, 2019; Nemutandani et al., 2016). Usage of integrated system was particularly low among orthodox practitioners as only 27% of participants have ever collaborated with TM providers and 10% were willing to refer clients to TM providers (Madiba, 2010). Under-utilisation of integrated health systems in Africa was attributed to the absence of protocol to publicise the integrated health system (Boateng et al., 2016), TM products and services not included in national health cover (Appiah et al., 2018) and unwillingness of orthodox practitioners to embrace the incorporation of TM practice into formal health systems (Ahenkan et al., 2019; Madiba, 2010).

Generally, inadequate evidence-based research to support TM practice was cited by orthodox health practitioners as reason for their resistance. Nonetheless, three studies reported moderate usage of integrated health systems (Agyei-Baffour et al., 2017; Campbell-Hall et al., 2010; Kaboru et al., 2006). A Ghanaian study reported that 42.2% of participants patronised health services offered at the TM units in the study settings (Agyei-Baffour et al., 2017). However, 13% of the participants stated that usage of the integrated system could increase through positive recommendation from orthodox practitioners. (Table 2.3). A study conducted in Zambia reported a moderate level of usage as 53% of TM practitioners interacted with the formal health system by advising clients to access certain biomedical services such as laboratory services before they (TM practitioners) commenced treatment (Kaboru et al., 2006). Usage was reported to be moderate in South Africa as health service users patronised both health systems simultaneously or at different periods depending on efficacy of treatment (Campbell-Hall et al. 2010). For example, a participant narrated; '*We commenced treatment at orthodox healthcare, and then progressed to TM providers but accessing TM worsened the ailment. So we stopped and returned to orthodox healthcare*' (Campbell-Hall et al. 2010).

2.4.3.4 Satisfaction as Measure of an Effective Integrated Health System in Africa:

Satisfaction was determined by level of fulfilment participants derived from integrated health systems. Ten reviewed articles reported low level of satisfaction among participants (Agbor & Naidoo, 2011; Ahenkan et al., 2019; Appiah et al., 2018; Awodele et al., 2011; Campbell-Hall et al., 2010; Falisse et al., 2018; Gyasi et al., 2017; Madiba, 2010; Maluleka & Ngoepe, 2019; Nemutandani et al., 2016). Satisfaction was recounted to be minimal because 70% of participants were not pleased with TM practice (Madiba, 2010). Low satisfaction was mainly due to failure of policy makers to enact and implement policies to promulgate the integration process, weak communication of the referral system between health care providers as well as lopsided power relations within integrated health systems. However, one study

reported that 53% of study participants were satisfied with the integrated health system because their preference for TM had increased due to its operation in health centres (Agyei-Baffour et al., 2017). Another study reported varying levels of satisfaction among participants. The variation ranged from 'being satisfied with the system' – [*The collaboration is very strong. There are sometimes intra referrals from TM units to orthodox and vice versa. Clients go to Out Patients Department, then to TM unit, we check vital statistics, then clients would be examined and recommended to do some laboratory test when necessary. We ensure constancy for the sake of report:* TM practitioner] to 'not satisfied with the system' – [*We have not admitted any client who patronise TM and orthodox medicine. I do not consider it as integration, because we are not working jointly with them*: orthodox medicine practitioner] (Boateng et al., 2016).

2.4.3.5 Acceptance as Measure of an Effective Integrated Health System in Africa:

Acceptance was closely linked to satisfaction of participants. While satisfaction evaluated fulfilment people derive from the integrated system, acceptance was deduced based on the value participants placed on their role and the role of other stakeholders in the integration process. Eight of the reviewed literature indicated that acceptance of integrated health systems in Africa was low among orthodox medicine practitioners (Agbor & Naidoo, 2011; Ahenkan et al., 2019; Boateng et al., 2016; Campbell-Hall et al., 2010; Falisse et al., 2018; Gyasi et al., 2017; Madiba, 2010; Nemutandani et al., 2016). For example, Falisse et al. found that although the majority of orthodox medicine practitioners in Burundi (91%) were aware of the integrated system, only 19% supported formal integration (Falisse et al., 2018). Related results were disclosed by a Ghanaian study where orthodox medicine practitioners were highly unprepared to refer clients to TM practitioners (Gyasi et al., 2017). Likewise, orthodox practitioners in South Africa frowned at the integration process because they (OMPs) perceived TM practice

as an obstacle to successful management of clients' health (Campbell-Hall et al., 2010). Differing levels of acceptance was observed among TM practitioners. While a Nigerian study (Awodele et al., 2011) reported high level (64%) of acceptance among TM practitioners at Mushin, Lagos, the findings of Maluleka and Ngoepe (2019) identified a contradictory report as acceptance of the integrated system was low among TM practitioners in South Africa. This was because they (TM practitioners) experienced marginalisation in the integrated system. One study found that perceived acceptance was reported to be high among both health practitioners in Ndola and Kabwe; in the Copper belt and Central provinces of Zambia. This was due to the fact that 77% of orthodox health providers and 97% of TM practitioners felt there was a potential prospect for them to learn from each other in order to work effectively (Kaboru et al., 2006). Overall, the practice of integrated health system was popular among health service users. Two studies reported high acceptance of integrated system among service users in Ghana (Agyei-Baffour et al., 2017; Gyasi et al., 2017). It also emerged that the practice of an integrated health system was highly favourable among scholars who are into TM research (Appiah et al., 2018).

Table 2.3: Studies on effectiveness of integrated health systems in Africa.

Reference	Country	Integration interventions	Year of inception	Total years of int.	Level of awareness	Level of usage	Level of satisfaction	Level of acceptance	Representative quotes
Boateng et al., 2016	Ghana	In the year 2001, a council was instituted in Ghana to standardise the practice of TM in the country. In order to legalise this, a policy on the practice of TM was entrenched in 2005 to that effect.	2001	19	Patients at the orthodox medicine unit were not aware of TM clinic in the hospital. Participants viewed the integrated health system in diverse ways.	Level of usage was low because there was no policy to regulate and publicise the integrated system	Level of satisfaction among participants was varied as views reported were contradictory but perceived satisfaction was high	Participants stated that the integrated system will be more acceptable if modern medical technologies such as research into efficacy, dosage, standardisation, laboratory services are properly introduced in TM practice.	"*Not aware of operation of TM clinic. Some ailments require TM*" (Client 2, orthodox unit) "*Frequently, we become confused collaboration and integration. It is not entirely integrated*" (Key informant) "*The flow of information is good. We have the prescribers' assembly. They agree on what to be done. They make delivery on what has happened*" (OMP 2)
Agbor & Naidoo, 2011	Cameroon	In 1981, Cameroon formally recognised and integrated TM into health system but the recognition was not controlled by the MOH. In July 1995, a governmental declaration with registration number (95-040) mandated	1981	39	Patients perceive the integrated system as orthodox health system tolerating traditional care. Therefore, knowledge on integration was low	Usage of integrated system is low because of inadequate scientific evaluation problems in TM practice.	Perceived satisfaction was high but actual satisfaction was low because level of integration was low.	Low acceptance of practitioners within the system was because 71% had no professional education as most were trained through apprenticeship and	

		Traditional Practitioners in Cameroon to form local and national associations to regulate the practice of TM.					had only primary education.	
Agyei-Baffour et al., 2017	Ghana	Formulation of policy on TM practice in 2005. Creation of TM Practice Council (TMPC) in 2007 and official TM integrated in 2012.	2005	15	42.2% of participants were aware of the existence of the herbal medicine unit in the study settings	Usage was moderate since 42.2% of participants used TM within the health facilities 13% believed positive recommendation of TM within the integrated system may increase usage of the system.	Participants were satisfied with the integrated system as 53% of the respondents indicated that their preferences for TM had increased due to its operation within hospital setting.	Acceptance of the integrated system was high among participants with high socio-economic status than those reported to have low income	
Ahenkan et al., 2019	Ghana	The passing of the TM Act in 2000.	2000	20	Awareness of regulations governing TM practice was low as participants especially TMPs, reported not having knowledge about rules and ethics governing their practice.	Level of usage was reported to be low particularly among orthodox medicine practitioners, since they were unhappy about people seeking medical care from TMPs. OMPs were unprepared to prescribe TM to clients.	Scarcity of trained TMPs was reported among participants which was seen to be a disincentive to the integrated system.	Level of acceptance was low among orthodox medicine practitioners due to exclusion of TM in medical school curriculum. However, acceptance was high among TMPs due to their positive attitude towards integration.	" *I feel bad, especially when you have the ability to treat a disease but the client kind of seeks care from TMPs*" (medical doctor) "*Who will prescribe TM even if they are added in national drug list? If we're to prescribe them, then they must be included in what we studied at medical school*." (medical doctor) "*Because I don't have equipment to diagnose to know what really*

								causes an ailment, normally I tell my patients to first go to the clinic to get examined, it makes my work easier." (TMP)
Appiah et al., 2018	Ghana	Inauguration of Bachelor of Science degree (BSc) in TM at Kwame Nkrumah University of Science and Technology (KNUST) in 2001. Creation of TM Directorate in Ghana's Ministry of Health in 2001. Health policy on safe practice of TM in 2005. Establishment of TM units in selected hospitals in Ghana	2001	19	Participants were aware of the existence of an integrated system and perceived it to be a step in the right direction, but they reported that administration of the integration procedure needs to be intensified.	Usage of the integrated health system was reported to be low since the national health cover did not embrace TM products and services.	Participants were displeased at the pace of the integration process was. Satisfaction was low because participants felt the integrated system should be more efficient than it was at the time of the survey.	Acceptance of the integrated system was high among participants. This was because they recommended that the number of health facilities with TM units should be increased.	"*There's a need to introduce a good legislative procedure.*" (Participant 2) "*The government should accelerate TM units so that teaching, municipal and district health centres will have them*" (Participant 7) "*Since the hospital board has not defined the exact role the TM unit are to play, TM services are financed by clients through cash and carry system*". (Participant 11)
Awodele et al., 2011	Nigeria	In 1999, during an ECOWAS special health conference in Abuja Nigeria, the President of the Federal Republic put forth the TM development programme and urged for its integration into the formal health system plan.	1999	21	Awareness was low because intervention put in place to aid collaboration was not well known among participants.	The lack of regulatory protocol to push the integration agenda has contributed to minimal usage of the system.	Low level of satisfaction due to inadequate support from policy makers	64% of the participants were willing to succumb to regulations governing the integration process. This depicted high acceptance among participants.	

Campbell -Hall et al., 2010	South Africa	Approval of Traditional Health Practitioner Bill	2003	17	Participants were aware of the existence of the integrated health system	Usage of the system was moderate since participants were aware of the existence of the system and accessed both concurrently or one at a time.	Level of satisfaction was low. Client felt services offered by TMPs are not effective. OMPs also thought of the services offered by TMPs were interfering with their activities. Communication barrier was reported as a challenge to integration.	Acceptance was low among OMPs because they felt clients accessing both health care causes a challenge to management of infirmities. TMPs were marginalised in the system but they were willing to learn improved ways of offering care to clients.	"*We started by accessing OM, then proceeded to TMP but utilising TM made the condition worse so stopped and returned to OM*" (Client) "*There is a rift in terms of coordination, interpretation, communication and method of offering health care to clients*". (OMP)
Falisse et al., 2018	Burundi	Burundi rejuvenated TM practice in the 1980s by seeking UNDP's support. At the same period, TMPs formed organisations and united with government to create the Centre for Research and Promotion of TM in Burundi (CRPMT). From 2002 to 2004, an Integrative Medicine (IM) entity was created in the Burundi's Ministry of Health (MOH) and it paved the way to lawful practice of integrated healthcare. Finally, a declaration (number: 100/253/2014) made by government was circulated to guide the practice of IM.	2002	18	91% of orthodox practitioners were aware of the integrated system	Usage of the system was low because of lopsided power dynamics within the integrated health system.	Satisfaction was low due to poor credibility resulting from inadequate measures to get rid of quack TM practitioners and unfriendly relationship between TMPs and churches.	Level of acceptance was low among orthodox practitioners as only 19% supported formal integration Acceptance rate among health users was high as 93% supported integration.	"*A few days ago, we had twin brothers in the paediatric unit, their health was not improving and the parents asked whether they could take them to a TMP. Certainly, we disallowed. Hence, they ran away with the children.*" (OMP 2) "*Not long ago, the Catholic Church organised a parade led by a cross of Jesus, the aim was to wipe out healers and their practices. I*

									am surprised. The priest-healer of Bururi, is he not Catholic? And is he not curing people himself? (TMP 1) "*Presently, children go to school and they get taught that TM does not heal. And they have a bad image of AM. But they are wrong*" (TMP 1)
Gyasi et al., 2017	Ghana	The MOH in partnership with the Ghana Federation of TMPs endorsed a strategic plan for the promotion of TM practice (2000-2004). The plan comprised the formation of a comprehensive training program in TM, therefore in line with this strategy; the KNUST is presently running a BSc degree in TM. Again, Centre for Scientific Research into Plant Medicine has been in operation since 1975 to promote TM practice	2000	20	Study participants were aware of the existence of integration between the two health systems but admitted that the system was not effective	Patronage of integrated health services was low because of a weak referral system	Satisfaction was low among orthodox practitioners due to inadequate credibility backing TM practice whereas healthcare users were satisfied with the system.	Acceptance was high among health care users but unpopular among TMPs and orthodox medicine practitioners.	*"When I told a midwife that I have utilised TM to ease my morning sickness like extreme vomiting, she was upset with me, and ordered me to go and access care somewhere else. You see! One nurse also blamed me of not acting properly having used TM, meanwhile the TM was efficient* (Health user 1) *"I don't refer my clients to the traditional healers and I don't think it's the right thing to*

									do at the moment. This is because I can't guarantee the quality of care they (the healers) will provide to the poor and the helpless patients. I know most of the healers depend on spirits, deities and witchcrafts which cannot be explained in the medical language I understand. If I don't understand and also can't be sure of the treatment outcomes of the patients, then there is no need to refer them to see a traditional healer for their problems (Health professional 1)
Kaboru et al., 2006	Zambia	Institution of the Traditional Health Practitioners Association of Zambia	Not stated	-	Awareness was low as 24% of participants reported of knowing and having experience with the integrated health system	Usage was reported to be moderate among TMPs as 53% reported of directing their clients to seek orthodox health care. The reverse was reported among OMPs because only 4% recommended TM to clients.	Perceived satisfaction was high among TMPs since 97% perceived their practice to be important in the health system.	Perceived acceptance was reported to be high among participants as 77% of OMPs and 97% of TMPs thought there was the possibility for OMPs to learn from TMPs. On the other hand, 97% of OMPs and 90% of TMPs reported a	

							likelihood to learn from OMPs.	
Madiba, 2010	Botswana	Enactment of the national health policy of Botswana stipulating the nature of integration through common grounds for learning and communication between the two health systems.	1995	25	Level of awareness was low because merely 18.6% of participants knew about the existence of an integration policy. However, knowledge about client usage of TM was moderate 50%	Usage of the system was recounted to be low since 90% of participants registered their unwillingness to refer clients to TMPs.	Satisfaction was also minimal because 70% of participants were not pleased with TM practice.	Acceptance of the integrated system was low due to skewed power relations where OMPs felt their role in the system was superior and were unprepared to welcome TM. About 73% of participants had at no time, cooperated with TMPs. Likewise, only 6% of participants perceived TMPs as co-workers.	
Maleluka & Ngoepe, 2019	South Africa	The Government of South Africa enacted a law on Traditional Health Practitioners (THP) Act in 2007 to serve as the foundation of TM practice and promote integration. Another measure was the institution of Traditional Health Practitioners Council of South Africa (THPCSA) to guide the activities of practitioners	2007	13	Both practitioners knew the existence of the integrated system. This was evident in the interaction between healers and orthodox practitioners (training and referrals)	Level of usage was low as participants reported of referring clients to hospitals but they did not receive referrals from hospitals.	Low satisfaction echoed in the views of participants as they claimed that integration was one-sided	Level of acceptance was low as TMPs felt marginalised. Again, orthodox practitioners did not accept the activities of the healers	"*Integration is skewed because health facilities do not refer clients to us but we do refer clients to health centres.*" (Respondent A) "*After referring clients to hospitals nurses sometimes fight with both clients and TMPs enquiring why they (clients) consulted TMPs first instead of going*

									to the hospitals." (Respondent C) "*I had a rapport with our local health centre and we had challenges when it came to issues of payment.*" (Respondent E)
Nemutandani et al., 2016	South Africa	Dissemination of Traditional Health Practitioners Act (Number 22)	2007	13	Level of awareness among participants regarding the existence of Traditional Health Practitioners Act was low.	Usage was low because TM practice was perceived to compromise the standard of health that should be delivered to clients.	Satisfaction was reported to be low among participants as some were concerned about the level of medical knowledge of TMPs	Acceptance was also recounted to be low among study participants.	"*Does it mean that TMPs are health employees like us? What is happening? Yet, we were not once asked about the Act. How will it function*? (Medical services manager 3) "*If TMPs are rightly educated, we will collaborate with them as treatment supporters. Won't TMPs combine the treatment with medicinal plants?* (Physician 1)

*Int: Integration

2.4.4 Assessment of Methodological Quality

As indicated in Table 2.4, the included studies were of good methodological quality and had QATSDD scores ranging from 57% to 86%. One study scored above 80%, hence was classified as having excellent methodological quality. Five studies scored above 70% and none of the studies was below 50%. The average methodological quality score of the included studies is 69% which equates to an acceptable standard based on the criteria of the QATSDD assessment tool. Overall, the included studies provided detailed information about sampling, data collection method, data analysis, strengths and limitations of the study.

Table 2.4: Quality assessment of included studies using the quality assessment tool for studies with diverse designs (QATSDD).

QATSDD criteria	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Total score	% of total score	Grade
Boateng et al., 2016	0	3	3	2	2	3	3	0	N/A	N/A	2	2	2	2	0	2	26/42	62	Good
Agbor & Naidoo, 2011	0	3	3	3	2	2	2	2	0	2	N/A	3	2	N/A	0	0	24/42	57	Good
Agyei-Baffour et al., 2017	0	3	3	3	3	3	0	3	0	3	N/A	3	2	N/A	2	2	30/42	71	Good
Ahenkan et al., 2019	3	3	3	3	3	1	3	2	N/A	N/A	3	3	3	3	0	0	33/42	79	Good
Appiah et al., 2018	3	3	3	3	2	3	2	3	N/A	N/A	3	3	3	3	0	2	36/42	86	Excellent
Awodele et al., 2011	0	3	3	3	2	3	0	3	0	2	N/A	3	3	N/A	0	0	25/42	60	Good
Campbell-Hall et al., 2010	0	3	3	2	3	3	1	1	N/A	N/A	3	3	1	3	0	0	26/42	62	Good
Falisse et al., 2018	0	3	3	3	3	3	2	1	0	3	3	3	3	3	1	0	34/48	71	Good
Gyasi et al., 2017	0	3	3	2	2	3	3	2	N/A	N/A	3	2	3	3	1	0	30/42	71	Good
Kaboru et al., 2006	0	3	3	3	3	2	2	3	2	3	N/A	1	2	N/A	0	3	29/42	69	Good
Madiba, 2010	0	3	2	1	2	3	1	3	2	1	N/A	3	2	N/A	3	0	26/42	62	Good
Maleluka & Ngoepe, 2019	0	3	2	3	3	3	2	3	N/A	N/A	3	2	2	3	0	2	31/42	74	Good
Nemutandani et al., 2016	0	3	3	3	3	3	1	1	N/A	N/A	3	3	0	3	0	3	29/42	69	Good

0 represents ‘criterion not mentioned at all’ 1 represents ‘very slightly mentioned criterion’ 2 represents ‘moderately mentioned criterion’ 3 represents ‘fully explained criterion’ and N/A means criterion not applicable.

2.5 Discussion

TM plays a significant role in health delivery which has led to its integration into health systems of various African countries (Antwi-Baffour, Ajediran, Adjei, & Mahmood, 2014). The rationale behind the integration of TM is to widen the scope of health delivery and improve health seeking behaviour among populations (Ahlberg, 2017). Published research has shown that integration can only be successful if contextual factors like health system architecture, socio-cultural characteristics and views of stakeholders are cautiously considered in the integration process (Park & Canaway, 2019). Other important determinants include those directly related to health practitioners, service users, and the broader socio-political structure within which health systems operate (Park & Canaway, 2019). Studies have also shown that the level of effectiveness of an integrated health system mostly relies on the nature of relationship that exists between all stakeholders in the health sector (Park & Canaway, 2019; Tudor Car et al., 2013).

This systematic review was therefore conducted to assess the effectiveness of integrated health systems in Africa. The measure of effectiveness was based on awareness, usage, satisfaction and acceptance of integrated systems. Reviewed articles reported that integrated health systems in Africa were ineffective. Knowledge about the existence of integrated systems was low in most countries and health service users favoured the integration of TM into formal health systems. This result is mirrored in the works of Ben-Arye, Karkabi, Karkabi, et al. (2009) and Jong, van de Vijver, Busch, Fritsma, and Seldenrijk (2012) where service users' agreed that orthodox practitioners should guide clients to choose appropriate TM and refer them to qualified and experienced TM practitioners when the need arises. Yet, the review identified that majority of users were uninformed about the official practice of TM in health centres, hence accounting for low usage of integrated systems in Africa. Ignorance of service users was attributed to the absence of explicit protocols/documents clearly describing the concept of integration as well as sensitising the people about the integration process (Boateng et al., 2016).

However, health professionals, particularly orthodox medicine practitioners, were conversant with the practice of integrated health but their disposition towards the system was poor (Falisse et al., 2018). Sewitch, Cepoiu, Rigillo, and Sproule (2008) confirms the finding that doctors have unfavourable attitude towards TM prescription and referral of clients to TM practitioners. Shallow knowledge about the practice of integrated systems in Africa might be a contributory factor to the undesirably low patronage integrated healthcare.

The review established that patronage of integrated health systems was unimpressive. This was due to ineffective communication as a result of non-functional referral system, absence of an official document to promote the integrated system, non-inclusion of TM products and services in national health cover and skewed power relations within the integrated system (Appiah et al., 2018; Awodele et al., 2011; Boateng et al., 2016; Falisse et al., 2018; Gyasi et al., 2017; Maluleka & Ngoepe, 2019). The unsuccessful collaboration between the two health systems affected the quality of services offered by the consolidated health delivery unit. Thus, the performance of integrated systems was reported to be unsatisfactory because health practitioners and service users as stakeholders, expressed dissatisfaction with the state of health systems in Africa.

Satisfaction is said to be achieved when health practitioners together with service users/clients derive fulfilment in practicing and accessing health services (Haas et al., 2000). Most health systems in Africa have not achieved this goal. The review indicated low satisfaction among stakeholders. The unsatisfactory state of health systems in Africa stem mainly from inadequately trained TM practitioners, slow rate of progress of the integration process, incompetent measures aimed at eliminating charlatan practitioners (Appiah et al., 2018; Falisse et al., 2018). Conversely, Agyei-Baffour et al. (2017) reported a rise in the use of TM among service users/clients because of moderate satisfaction derived from the integrated system. Orthodox medicine practitioners were not satisfied with the integration of TM into formal

health systems because they deemed TM practice as an obstacle to achieving a healthy population (Campbell-Hall et al., 2010). The absence of a common professional language between the two practitioners further deepened the displeasing state of integrated systems. This discovery is closely linked to the findings of Hollenberg (2006) in Canada where differences in terminologies created communication barriers between orthodox and TM practitioners and hindered professional collaboration in integrative healthcare facilities. This notwithstanding, TM practitioners were somewhat pleased with the system and acknowledged that there was hope for better integration of the two health entities. The review further assessed acceptance of the practice of integrated systems.

Acceptance of the practice of integration was low among health practitioners, particularly orthodox healthcare providers, but high among health service users. This mirrored in the findings of Falisse et al. (2018) as a relatively low percentage (19%) of orthodox practitioners supported formal integration, while a significant percentage (93%) of clients preferred integration. Likewise, results of Maluleka and Ngoepe (2019) identified that acceptance within the system was low among TM practitioners due to feelings of ostracizsation. The feeling of exclusion by TM practitioners was a product of a sense of superiority by orthodox providers in the integration process as well as exclusion of TM in educational curriculum. Taken together, this review has unravelled key factors responsible for the non-functionality of health systems in Africa. Clearly, for health systems to be effective requires more than mere lip service to policy formulations, and such policies should include other extraneous factors or interventions. Good health systems researches are needed to identify specific factors, which impede effective integration of TM into health systems. Future studies should focus on analysing the perceptions and experiences of stakeholders in relation to the integration process within wider socio-political context.

2.5.1 Strengths and Limitations

The review relied upon reported experiences from participants to highlight the state and effectiveness of integrated health systems in Africa. To the best of our knowledge, this is the first article to assess the effectiveness of integrated health systems and factors impeding the integration process in Africa. However, the included studies were not evenly distributed as majority of the studies were from Ghana (Agyei-Baffour et al., 2017; Ahenkan et al., 2019; Appiah et al., 2018; Boateng et al., 2016; Gyasi et al., 2017). The exclusion of grey literature and non-English articles created possible grounds for oversight. Furthermore, the QATSDD appraisal tool depends largely on reviewers' knowledge, therefore, there is a potential for bias (Sirriyeh et al., 2012). There is also the possibility of misclassification and recall biases since participants had to recollect their experiences with the integrated health system.

2.6 Conclusions

In Africa, the main step taken by countries to integrate TM into formal health systems is through policy formulation and the creation of TM practice councils. Some countries have managed to establish institutions responsible for assessing the efficacy of TM and introduced TM practice into tertiary educational system. Existing health policies are not working hence the integration of TM has not been successful. It is critical to uncover the bottlenecks in the health systems by exploring perceptions and experiences of stakeholders to offer solutions for better integration of the two health systems.

Contributions of Chapter 2 to thesis

The systematic review presented in **Chapter 2** answered **RQ1**: How effective are integrated health systems in Africa? Findings from this review revealed that theoretical frameworks and mixed methods research designs are underutilised in integrated health studies, particularly in Ghana. In addition, service users were highly interested in the practice of integrated healthcare. However, their receptiveness did not translate to usage. Therefore, it would be vital to assess the knowledge, preference, and experiences of Ashanti region community members in relation to TM integration using a theoretical framework. The review findings formed the basis for the study presented in **Chapter 3**.

Chapter 3: The Practice of Integrated Healthcare and the Experiences of People in Ghana's Ashanti Region (https://doi.org/10.1186/s12913-021-07340-0)

3.1 Chapter Overview

Abstract: The Ghanaian government has implemented interventions that integrate traditional medicine (TM) into its national health system in response to the high prevalence of TM use. However, empirical evidence of the experiences of service users and the practice of integrated health in Ghana is scanty. Therefore, this study explored the experiences of people with TM integration into the formal health system in Ashanti region using an adapted TM integration framework. A sequential explanatory mixed methods study design comprising survey administration and in-depth interviews for data collection was utilised to address the research objective. Framework analysis was used in analysing the qualitative data and for triangulation of results.

Participants were aware of licensing and training of TM practitioners in a science-based university in Ghana. However, knowledge of the existence of TM units in selected hospitals in the region was minimal. Integration knowledge was largely influenced by sex, marital status, household size and residential status; where males and urban dwellers were more familiar with the process than females and rural dwellers. Low patronage of integrated health services in the region was attributable to weak cross referrals. However, service users who had engaged with the integrated system recounted a satisfactory outcome. Service users' unfamiliarity with the presence of integrated facilities in Ghana could be an impediment to the practice of integrated healthcare. Sensitisation of the public about the practice of an integrated system could refine the Ghanaian integrated system. Regular evaluation of patient satisfaction and outcome measures might also serve as an effective strategy for improving health services delivery since evaluation is becoming an important component of health service design and implementation. There is the need for future studies to focus on exploring the perceptions and experiences of health practitioners regarding the practice of integrated health in Ghana.

3.2 Introduction

An integrated health system is a system where healthcare services are expanded through interaction, participation, adaptation and partnership building between orthodox (training, knowledge and method of medicine in westernised cultures (Osemene et al., 2011)) and traditional health systems, however indigenous medical knowledge is maintained (Sambo, 2003). In Ghana, TM comprise the use of medicinal plants and faith/spiritual healing (Abel & Busia, 2005; Gyasi et al., 2017). However, in this study, TM refers to the use of products such as medicinal plants, barks, roots whether processed or not for healing purposes.

Boosting collaboration between the two health systems could help orthodox and traditional medicine (TM) practitioners to complement each other, thereby improving the management/treatment of disease conditions (Sambo, 2003). Integrative medicine has a patient-centred approach to healing and a comprehensive emphasis on healthcare rather than an ailment-centred approach (Allam, Moharam, & Alarfaj, 2014; Astin, 1998). As oppose to curing, orthodox medicine should aim to adopt a more patient-centred approach to treatment as well. Integrated health system practice has been reported in various countries such as Australia (Lin, Canaway, & Carter, 2015), Canada (Hollenberg, 2006), China (World Health Organization, 2019), Israel (Allam et al., 2014), Ghana (Agyei-Baffour et al., 2017; Boateng et al., 2016).

The integration of TM into mainstream health systems are classified into integrative, inclusive and tolerant systems depending on the degree of the integration, particularly in the areas of health financing, TM regulation, formal education as well as monitoring (Vasconi & Owoahene-Acheampong, 2010; World Health Organization, 2002). Countries such as China Korea, Vietnam, Sri Lanka and Singapore have successfully merged traditional and orthodox health systems (World Health Organization, 2000, 2019, 2020), therefore, noted to be practising an integrative health system. For example, some Chinese hospitals have TM units where ancient

Chinese medicines are used in treating millions of people yearly (World Health Organization, 2000).

A country implements a tolerant health system if the health system is exclusively based on the orthodox health system, nonetheless, some aspects of TM are accepted (Vasconi & Owoahene-Acheampong, 2010; World Health Organization, 2002). Conversely, countries with inclusive health system officially accept TM as a medical practice; however, TM is not entirely integrated into the mainstream health system. For example, formal training on TM at the tertiary educational level might not be available and traditional health system not included in the country's health financing scheme (Vasconi & Owoahene-Acheampong, 2010). Some developed (Australia, Canada, United Kingdom) and developing (Ghana, Mali, Nigeria) countries practice an inclusive health system (Vasconi & Owoahene-Acheampong, 2010; World Health Organization, 2002). An inclusive health system as practiced in Ghana means that TM practitioners are recognised as health service practitioners and TM products/medications are accessible at some public health facilities (Agyei-Baffour et al., 2017; Vasconi & Owoahene-Acheampong, 2010). Hence, traditional and orthodox health practitioners are supposed to cooperate and work in a complementarily manner to offer adequate health services to the population (Appiah et al., 2018).

Inclusive health system as practiced in Africa is not efficient due to a number of factors such as weak collaboration between both orthodox and TM health providers and lack of support from government in terms of training opportunities (Gyasi et al., 2017; Kretchy et al., 2016). This is particularly prevalent in Ghana (Gyasi et al., 2017). Therefore, there is a need to explore factors influencing integrated health systems within Africa with a focus on Ghana.

The government of Ghana initiated the incorporation of TM into the mainstream health system through the formulation of a TM policy in 2005, the creation of a TM Practice Council and establishment of TM units in some selected hospitals across the country (Agyei-Baffour et

al., 2017; Aries, Joosten, Wegdam, & van der Geest, 2007). Directly related to the creation of TM units, is the fact that recommendations were made by the TM Directorate to public hospitals in Ghana to prescribe TM products to service users (Appiah et al., 2018). Other interventions introduced include the inauguration of a TM department in a science-based university in Ghana (Kwame Nkrumah University of Science and Technology) in the year 2001 to train TM practitioners (Agyei-Baffour et al., 2017; Essegbey & Awuni, 2016; Gyasi et al., 2017; James et al., 2018). Likewise, an institution established in 1975 was charged with the verification of TM services and product safety before being released into the Ghanaian market, and/or prescribed for human consumption (Agyei-Baffour et al., 2017; Gyasi et al., 2017; Vasconi & Owoahene-Acheampong, 2010).

The government implemented all these interventions to incorporate TM practice into the mainstream health system and ensure its integrity. In 2013, it was reported that approximately 70% of Ghanaians rely on TM for healthcare (Yarney et al., 2013). The integration of TM into the Ghanaian health system was triggered by the high prevalence of TM use among the populace (Ampomah, Malau-Aduli, Malau-Aduli, & Emeto, 2020). In Ghana TM is used to cure and manage ailments such as fevers, cuts, foot rots, stroke, cancer, and diabetes (Agyei-Baffour et al., 2017; Boadu & Asase, 2017; Yarney et al., 2013). In most parts of the country, TM alone is sometimes used in treating malaria, while other times it is used to complement the orthodox anti-malarial therapies (Affum, Shiloh, & Adomako, 2013; Agyei-Baffour et al., 2017; Buabeng, Duwiejua, Dodoo, Matowe, & Enlund, 2007; Wilmot, Ameyaw, Amoako-Sakyi, Boampong, & Quashie, 2017). For example, nibima a medicinal plant also known as *Cryptolepis sanguinolenta* is a commonly used and scientifically proven treatment for malaria (Bugyei, Boye, & Addy, 2010). Nibima's tea formulations branded as Phyto-Laria, were reported to provide 93.5% healing with no side effects (Bugyei et al., 2010; Wilmot et al., 2017). A Ghanaian study focused on expectant mothers accessing antenatal health services has

also recounted the use of TM for the treatment of abdominal discomfort, constipation, safeguarding pregnancies and safe deliveries (Peprah et al., 2019).

Although, TM is widely utilised in Ghana, it is not entirely nontoxic (Oreagba et al., 2011). Careless and unregulated use of TM might jeopardise the health of consumers (Abt, Oh, Huntington, & Burkhart, 1995; Addo, 2007; Nnorom, Osibanjo, & Eleke, 2006). There are reports of negative health reactions following the use of TM alone or alongside orthodox therapies (Langlois-Klassen, Kipp, Jhangri, & Rubaale, 2007; Obebi Cliff-Eribo et al., 2016). For example, research has shown an association between the use of raspberry leaves and increased risk of caesarean delivery (Nordeng, Bayne, Havnen, & Paulsen, 2011).

Several African studies have been conducted to examine peoples' engagement with integrated health system (Agyei-Baffour et al., 2017; Campbell-Hall et al., 2010; Gyasi et al., 2017). For example, two previous studies in Ghana assessed the familiarity of service users and health practitioners with TM integration and suggested that engagement with the integrated health system is unsatisfactory (Boateng et al., 2016; Gyasi et al., 2017). However, these studies had a narrow scope and targeted service users within only one of the piloted integrated facilities in Ghana. Both studies also adopted a qualitative approach in achieving their research objectives and presented mostly descriptive findings that are not supported by a theory. Hence, there is the need to extend the scope of these previous studies by conducting a mixed methods research within communities to grant the majority of Ghanaians the opportunity to present their views on the practice of integrated health system. The Ashanti region is one of the cosmopolitan region in Ghana with the largest population size of 4, 780, 380 (GSS, 2013a). The region is noted for its diverse socio-economic and cultural backgrounds (GSS, 2013a; Gyasi et al., 2017).

Therefore, the current study sought to address the research question: what are the experiences of community members in Ashanti region in relation to TM integration into the health system? The study primarily explored the knowledge, involvement and satisfaction of

residents of Ashanti region concerning the practice of integrated health using the conceptual framework for integrating TM into national health systems cited in Park and Canaway (2019). The use of a theoretical framework in this study could enhance the transferability of results and direct the way to more efficient strategies to improve the Ghanaian integrated health system.

3.2.1 Theoretical Framework

The framework for integrating TM into national health systems describes the following six major elements influencing TM integration: Contextual/population characteristics, consumer experience, health governance and financing, health architecture, integrated healthcare models and health system type (Park & Canaway, 2019). The framework for integration TM into national health systems was developed to explain the role of TM in the Asian Pacific countries and demonstrates how TM integration could lead to the achievement of universal health coverage. The framework was adapted because its constituents were suitable and precisely relevant to the study. It recognises the population/contextual factors and consumer experiences as important catalysts for successful TM integration. Thus, the sections of the framework, which explains integration, was applied to the study.

The contextual/population characteristics describe the influence of demographic features, residential status and notable use of TM on the practice of integrated health. Significant use of TM among a given society could positively influence the integration process. Socio-cultural and economic characteristics vary across countries (Park & Canaway, 2019). Therefore, TM use tend to be extensive in some countries than others. The historic use of TM in each setting could serve as a catalyst to integration through social influence – peoples' familiarity with the traditional health system. For example, 40% of all health services delivered in China originate from the traditional health system and the system is used to treat approximately 200 million Chinese every year (World Health Organization, 2002). Clearly, it is not surprising that China is one of the Asian countries with well-established integrated health system (Park & Canaway, 2019).

Consumer experience on the other hand, explores the relationship between service users and the integrative team of orthodox and TM practitioners (Park & Canaway, 2019). This means that an improved integrated system ensures that service users engage with both orthodox and TM practitioners at a formal level rather than independently patronising a blend of the two health systems (Park & Canaway, 2019). Consumer experience is impacted by the accessibility of health systems, knowledge about integration, preference for integration and satisfaction derived from accessing the health systems (Park & Canaway, 2019). To enhance people's experience in accessing healthcare would require harmony and / or complementary roles of the orthodox and traditional health system since both systems have their strengths and weaknesses in offering the best of care to service users.

The health governance and financing element focuses on how policy makers influence health systems through funding, education, training, and regulations as shown in Figure 1.2. For example, governments' ability to cover TM products and services under national health insurance schemes could boost the integration process by providing continuous funding (Park & Canaway, 2019). Lastly, health architecture talks about the nature of health delivery in each country. Health practitioners' appreciation of the role TM plays in health delivery could positively influence the practice of integrated health (Park & Canaway, 2019). That is, the positive attitudes of both TM and orthodox health practitioners towards integration might enhance communication within the system (Park & Canaway, 2019).

The authors of the framework determined the connexion between the framework components, where they proved that contextual/population characteristics shape service users' experiences through the health system, which consist of health architecture, health governance and financing (Park & Canaway, 2019).

The current study is part of a larger study assessing the enablers and barriers to TM integration into the Ghanaian health system by exploring the views of community members,

health practitioners and hospital administrators in Ashanti region. This paper focuses on only two elements of the framework – population/contextual characteristics and consumer experience of the community members who are the consumers / users of the integrated health services. The study concentrated on the two components because the influence of notable use of TM and experiences of service users can be assessed adequately through the views of community members/health service consumers, which is the target population for this study. The framework has been used to study TM integration in Asia and the Western Pacific (Park & Canaway, 2019). However, to the best of our knowledge it has not been employed to assess integrated systems in West Africa, specifically Ghana (Figure 1.2).

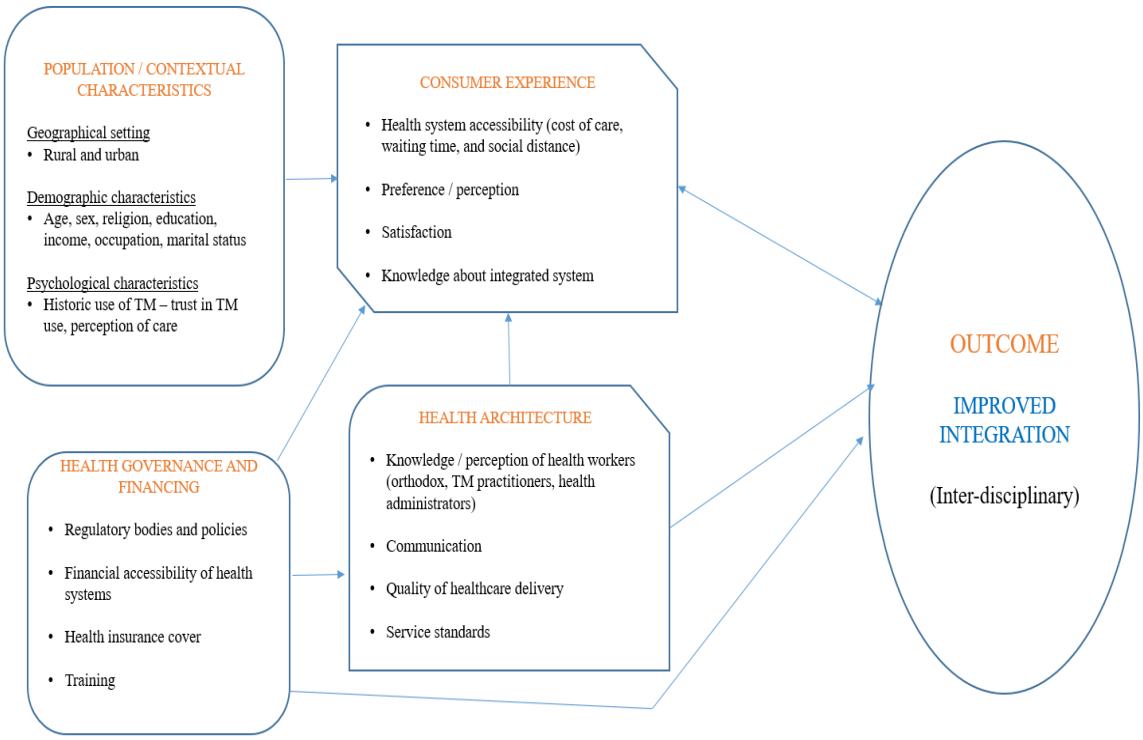

Figure 1.2: Conceptual framework for integrating TM into national health systems.

Source: Adapted from Park and Canaway (2019).

3.3 Methods

3.3.1 Study Setting and Target Population

The Ashanti region is located at the southern part of Ghana and captures 10.2% of the total land areas of Ghana (GSS, 2013a). It shares boundaries with the Brong Ahafo, Western,

Eastern and the Central regions. The Ashanti region is divided into 30 administrative districts. Four of the districts are municipalities with one metropolis that is Kumasi, the regional capital (GhSS, 2013a). The Kumasi metropolis is surrounded by the Ejisu-Juaben municipal district, Atwima Kwanwoma, Atwima Nwabiagya and Kwabre districts. In the region, the Offinso North district shares boundaries with Offinso south, Mampong and the Ejura-Sekyeredumase districts. The central or strategic location of the region enables the transportation and delivery of goods and services in Ghana and beyond (GSS, 2013a). The majority of the region lies within the semi equatorial forest sector in Ghana. The Ashanti region has a population of 4, 780, 380 accounting for 19.4% of the total population of Ghana and a population density of 196 residents per square kilometer (GSS, 2013a). Due to the central location of the region, it serves as a destination place for travelers from other parts of Ghana (Gyasi et al., 2017). In view of this, various ethnic groups such as Mole-Dagbon (11.3), Ewe (3.8), Gurma (2.8), Grusi and Mande (2%), Guan (1.5%), and Ga-Dangme (1.2%) have been identified in the region. However, the predominant ethnic group in the region is the Akans representing 74.2% of the total population in the region and the widely spoken language is the Asante Twi (GSS, 2013a). The multi-cultural nature, high population size and diverse socio-economic status in the Ashanti region make findings from researches conducted in the region a reasonable portrayal of what pertains in Ghana.

To examine if there are variations in experiences of community members relating to TM integration into the health system, two contrasting districts (Kumasi metropolis and Offinso North district) were selected for the study. Kumasi metropolis was chosen as the urban locality because it is the regional capital and the most populous area accounting for 36.2% (1, 730, 249) of total population of the Ashanti region. Offinso North district was chosen as the rural setting since almost 58.8% of its residents live in agrarian areas (GSS, 2012, 2013b). The study population included inhabitants of Kumasi metropolis and Offinso North district who were aged

18 years and above. People who consented to participate were recruited for the study. Overall, 10 communities (5 communities from each district) were randomly selected from the study districts using the electoral registers. For Kumasi metropolis, the communities selected were Anloga, Asawase, Asafo, Kwadaso and Tarkwa Maakro, while Afrancho, Akumadan, Asuoso, Kobreso and Nkenkaasu were chosen from Offinso North (See Figure 3.1). The rationale for the selection of these communities was to ensure fair representation of the selected study settings given that the Kumasi metropolis has been further divided into sub health districts (Gyasi, Tagoe-Darko, & Mensah, 2013; Kumasi Metrolpolitan Assembly, 2015).

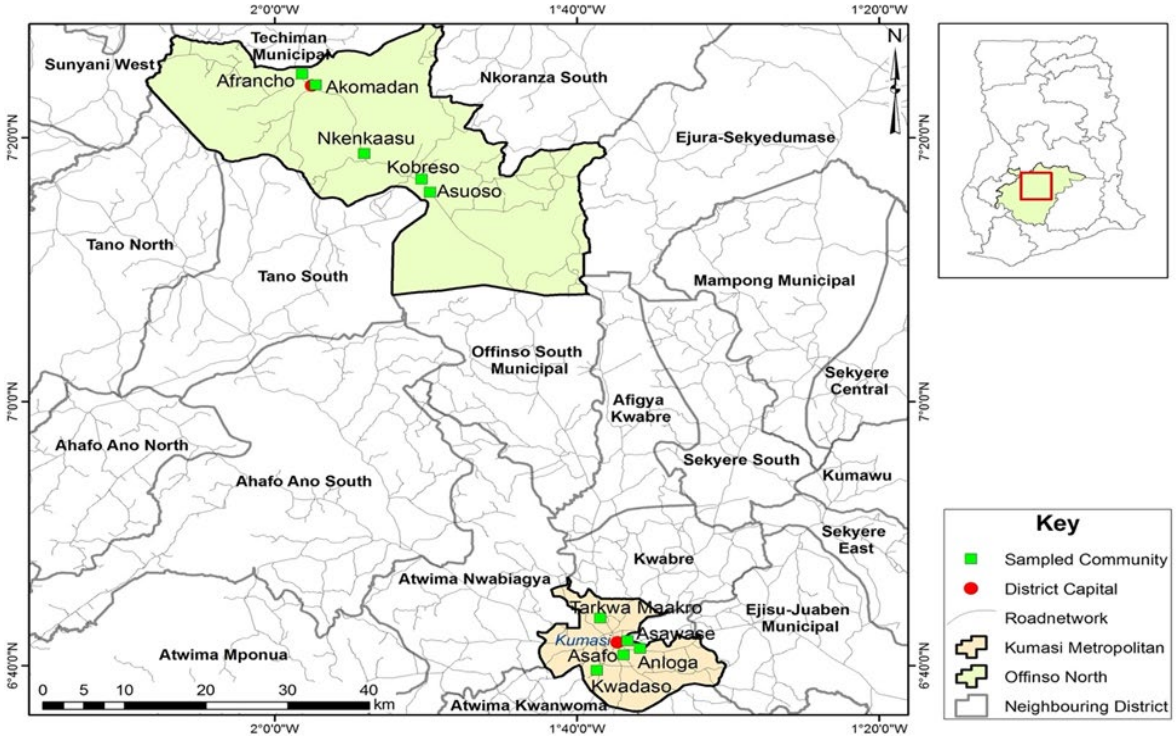

Figure 3.1: Map of Ashanti region showing the specific study settings (Kumasi Metropolis and Offinso North district).

Source: GIS unit of Department of Geography and Regional Planning (2020)

3.3.2 Study Design

A sequential explanatory mixed methods design comprising both quantitative and qualitative methods was employed to achieve the study's aim. This design applies a systematic merging of quantitative and qualitative research methods within a single study to offer detailed

interpretation of results (Creswell & Plano Clark, 2011). Explanatory design involves the initial collection and analysis of quantitative data followed by the collection and analysis of qualitative data in order to offer further explanation or expand the first phase quantitative findings (Creswell & Plano, 2018). Hence, the first phase of the study focused on the quantitative survey whilst the second phase was a qualitative one. For the quantitative phase, a cross-sectional design investigating demographic and use of TM was used, while a qualitative research approach through in-depth interviews was used to describe the lived experiences of people in relation to the practice of integration. Thereafter, findings of the quantitative phase informed the development of the interview protocol for the qualitative phase. The qualitative results offered deeper meaning or further explanation of the quantitative findings (See Figure 3.2). The mixed methods approach was adopted to strengthen the validity of the study findings by neutralising biases associated with both quantitative and qualitative approaches (Creswell & Plano Clark, 2011; Greene, Caracelli, & Graham, 1989).

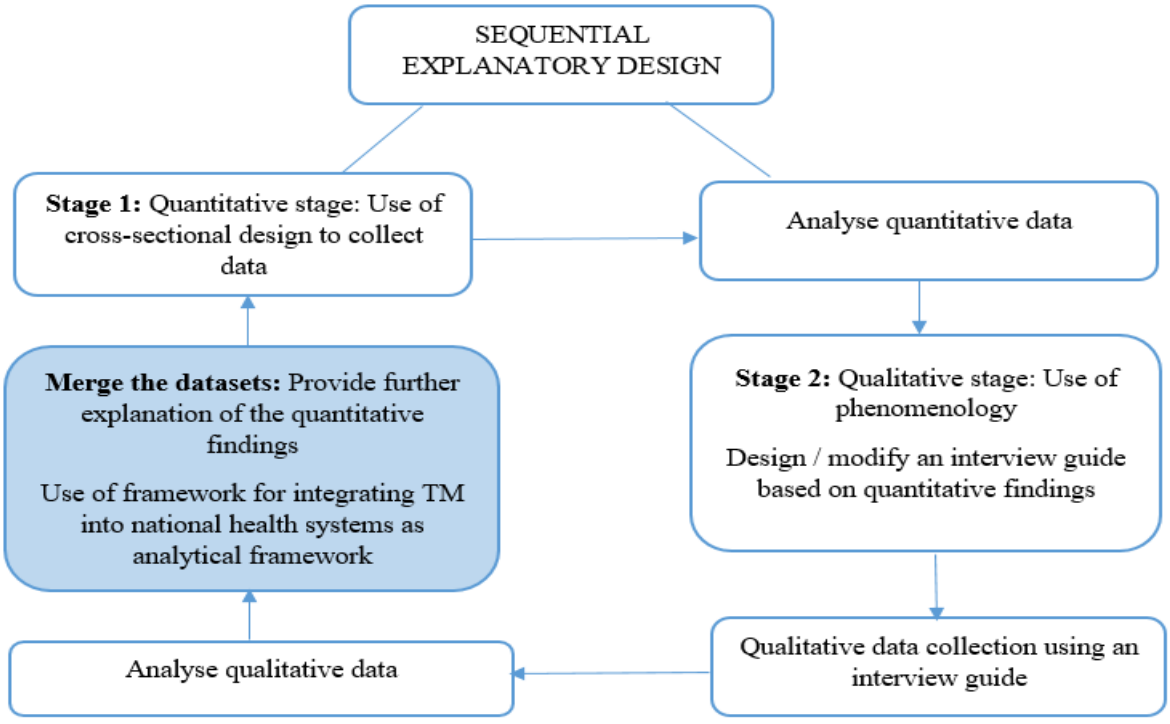

Figure 3.2: Study Design: Sequential Explanatory Design

3.3.3 Data Collection

Data were gathered from September 2020 to January 2021. Ten research assistants were enlisted and trained by the first author (IGA) to assist in the collection of both quantitative and qualitative data. Research assistants were enlisted from the University of Cape Coast and the Kwame Nkrumah University of Science and Technology. They held bachelors and master's degrees in the field of Public Health as well as Geography. All the assistants had undertaken some form of research through dissertations and theses writing.

The training of the assistants was conducted on two separate days and each session lasted for five hours. The study questionnaires and interview guides were used as materials/modules for the training. The assistants were familiar with both quantitative and qualitative research methods and had experience in data collection. However, they were trained to enable them understand the aim of the study and acquaint themselves with the study instruments. The study was executed in two phases, quantitative and qualitative phases.

3.3.4 Quantitative Phase

For the quantitative phase of the study, sample size was calculated using Lwanga, Lemeshow and World Health Organization (1991) formula for sample size determination, given as $n = z^2\ pq/d^2$ where p=prevalence of TM use in Ashanti Region, d= level of uncertainty (5%/0.05), z^2= 95% level of confidence and $q = 1-p$ (Lwanga et al., 1991). This formula gave a total of 323 community members as required participants. Therefore, one hundred and sixty-two participants were randomly chosen from the five selected communities within the Kumasi metropolis, while 161 were recruited from the five Offinso North settlements. Systematic random sampling technique (a quantitative sampling technique where the initial unit is randomly selected in an ordered population and subsequent selection is based on a fixed sampling interval from the random start point (Bellhouse, 2005) was applied in recruiting houses for the study. Participants were then selected from the household units using simple

random sampling. In a circumstance where a household had more than one eligible participant, voting was conducted to elect one person.

3.3.5 Survey Instrument

A tool adapted from Allam et al. (2014) and Adjei (2013) was used for the quantitative data collection. The adapted instruments have been used in Saudi Arabia and Ghana respectively. The Ghanaian study targeted residents of the Wassa Amenfi district in the Western part of the country. The instrument was a structured questionnaire developed along the lines of the theoretical framework of the study. It consisted of two major sections – contextual/population characteristics and consumer experience. The population/contextual characteristics section assessed socio-demographic characteristics of participants, while the consumer experience section examined issues related to health systems accessibility, such as attitude towards safe TM practice, preference for integration, knowledge/perception about TM integration and involvement/satisfaction with health systems.

Mean scores were computed from patronage, One point (1) and zero (0) were awarded for the ‘yes’ and ‘no’ responses, respectively. Higher scores indicated positive attitude towards TM integration. For example, participants who reacted positively to all the five preference questions were deemed to have a high inclination towards TM integration (Allam et al., 2014). A 2.5 mark was designated as the median score. Therefore, all scores above the median mark were considered high preference for TM integration and the scores below 2.5 inferred low preference. The survey instrument was pilot tested in Suame and Daaso in Kumasi metropolis and Offinso North district, respectively (n = 32). Pilot testing was carried out to determine participants’ understanding of the questions before commencement of the actual fieldwork. Participants were surveyed for the quantitative phase of the study.

The questionnaires were administered face to face with the help of research assistants. The assistants read and translated the survey questions to participants in the dominant local Twi dialect. Assistants then documented the answers from the participants accordingly. Informed

consents were sought from participants before interviews started. Study participants were also assured of confidentiality of the information given. All participants were interviewed in their homes, under conducive environments and the interviews lasted for a period of 30 to 40 minutes. Results from the quantitative phase were then used in formulating and modifying questions for the qualitative phase. In addition, participants were asked to indicate their interest in participating in the qualitative phase by providing their contact details and availability.

3.3.6 Qualitative Phase

The qualitative phase explored community members' experiences with the Ghanaian integrated health system. Twenty community members were selected from the 10 communities using purposive sampling procedure. Two research assistants (male, female) who are familiar with qualitative research conducted all the 20 face-to-face individual in-depth interviews. Since the issue under study was not sensitive, gender-based interviews were not conducted. For example, the female participants were not strictly interviewed by the female research assistant. The first author (IGA) trained assistants on the aim of the study using interview guide as training material. A mock interview was then organised between the first author (IGA) and the research assistants to ensure consistency in the interview process. The interview guide was developed by the research team and included topics on health systems accessibility, knowledge about the integrated system and satisfaction derived from accessing the various health systems.

The interview guide was pre-tested before actual data collection to ensure that questions were well defined and presented in a logical manner to aid participants' understanding. Pre-testing was conducted among five people, three from an urban community (Suame) and the remaining from a rural setting (Daaso). Questions were reported to be adequate, understandable with a coherent flow of the issues. During the actual data collection, I was present in the first four interviews to ensure precision and consistency. There was no communication between IGA and the participants. The research assistants were located within the study area (Kumasi

metropolis and Offinso North district) at the time of data collection. Both verbal and written informed consents were sought from all participants before commencement of the interviews.

All interviews were conducted face to face and every participant was interviewed in the comfort of his/her home. The duration of the interviews was between 25 to 45 minutes and each interview was audio recorded. Data saturation was achieved when explicit concepts/opinions kept iterating (Guest et al., 2006) after the 16th interview. Nonetheless, assistants interviewed the remaining four participants who had already showed interest in the study to prevent unintended elimination of new concepts. Assistants also made notes on their observations during the data collection period. Repetition of the interview sessions was not needed, but follow-up or clarifications were sought from some of the participants after the data collection period.

3.3.7 Data Analyses

Quantitative data were analysed using Statistical Package for Social Sciences (SPSS) Version 24 software. Socio-demographic characteristics of participants were presented using descriptive statistics (frequencies and percentages). Associations between categorical variables were determined using Chi square or Fisher Exact test as appropriate. Multivariable regression analysis was ran to identify predictors of preference for TM integration among study participants. All statistical tests were considered significant at a p-value of $p<0.05$.

For qualitative analysis, recorded interviews were transcribed by two qualified transcribers and reviewed by IGA. IGA listened to the interviews and compared them with the transcribed data to ensure preciseness of the data. The transcribed data were read out to the participants during follow-up meetings for authentication and rectification when required. Framework analysis was employed in analysing the transcribed data in NVivo version 12 software. This approach utilises both inductive and deductive analytical techniques and entails five stages; familiarisation, defining thematic framework, indexing, charting, mapping and interpretation (Appiah et al., 2018). Familiarisation is the stage where the transcripts were read

severally, and salient points noted. Thematic framework (identification of main concepts from data) was formed based on notes taken while familiarising with the data. At this stage, key concepts/ideas that had been expressed by the participants were identified through an inductive approach. Indexing, the third stage was carried out by highlighting sections of the data as belonging to certain themes/topics. We maintained open minds during the development of thematic framework and indexing stages, which allowed themes to emerge freely. The pieces of marked information were then organised in charts in line with the themes and quotes relevant to the themes were identified. Lastly, mapping and interpretation were performed by organising the charted data to describe participants' experiences in relation to healthcare accessibility, knowledge/perception about TM integration, and satisfaction derived from accessing the various health systems.

The first eight transcripts were coded and I generated initial themes before the data collection exercise continued. This was to allow for new probes or questions that incorporated insight gained after initial review of the data. To increase credibility and trustworthiness of findings, transcribed data, codes and themes were independently assessed by BSMA. Additionally, data were crosschecked, and a 90% degree of consistency existed between both authors' identification of themes, coding and classification. Discrepancies were settled through discussion and mutual agreement. The other three authors (AEOMA, AAS and TIE) reviewed the quotes and themes to enhance trustworthiness of the results. Themes were presented together with illustrative quotes attached with participants' socio-demographic characteristics (for example, Participant 1, Afrancho, female, 49 years). The performance of an inter-coder reliability enhanced the rigour and transparency of the study analysis and its application to the data (O'Connor & Joffe, 2020). The COREQ checklist (Tong et al., 2007) for reporting qualitative studies was used to appraise the final version of the qualitative aspect of the manuscript (See Supplementary file 1, COREQ Checklist).

3.3.8 Positionality Statement

According to Scharp and Thomas (2019), critical researchers should evaluate their own experiences, which might contribute to the interpretations of the experiences of other people. In light of this, none of the authors have experienced or patronised integrated health services in the study area. Instead, the first author has conducted research on the utilisation of healthcare services among residents of a Ghanaian community and reported that TM use was prevalent and appeared to be the preferred healthcare system among the study population. The first author maintains that having this knowledge about preference for TM makes her relate to the study participants' desire for TM integration. More so, not identifying as TM users or advocate for TM use permitted the research team to protect themselves from being bias in the interviewing process as well as the presentation of study participants' experiences. To avoid speaking for the data, notes were made on all presumptions that arose about the target population and study setting. This was done to bracket the existing suppositions during the data collection exercise and data analysis procedure.

3.3.9 Ethics

The Ghana Health Service Ethics Review Committee (GHS-ERC003/05/20) and the Human Ethics Committee at the James Cook University, Australia (H8239) granted approval for this study. During the data collection, both written and oral informed consent were obtained from all the participants. In addition to the ethical approval and informed consent, all methods were performed in accordance to the Declaration of Helsinki on ethical principles in conducting human research.

3.4 Results

Quantitative Phase

Contextual Characteristics/population characteristics

3.4.1 Socio-Demographic of Participants

A total of 323 participants completed the survey. The socio-demographic attributes of the participants are presented in Table 3.1. The mean age was 33.6 ± 15.9, with a range of 18 to 80 years. The majority of the participants were within the ages of 20-29 years (42.7%). Males constituted 52.6% of the total population. Most of the participants (58.2%) were not married. Only 9% attained tertiary level of education, 34.7% completed secondary/senior high school education, primary education (9%) while 18% had no formal education. A greater proportion of the participants were traders (30.7%), while only 4% were government employees. Christianity is the dominant religion in the study area (74.3%). Participants were mostly (65.3%) from the Akans ethnic group. Half (50.2%) of the participants reside in urban settlements. A majority of households (59.1%) comprise of five or more members. Most, of the study participants (79.2%) had a household monthly income of less than 1,000 GH Cedi (USD 172.4) (Table 3.1).

Table 3.1: Socio-demographic characteristics of study participants (N = 323)

Variables	**Frequency (n)**	**Percentage (%)**
Sex		
Males	170	52.6
Females	153	47.4
Age (years) Range: 18 - 80 Mean ± SD: 33.6, 15.9		
Below 20	44	13.6
20-29	138	42.7
30-39	54	16.7
40-49	30	9.3
50+	57	17.7
Marital status		
Unmarried	188	58.2
Ever married	135	41.8
Educational level		
Secondary/Senior High School	112	34.7
Middle/Junior High School	95	29.4
No formal education	58	18.0
Primary	29	9.0
Tertiary	29	9.0
Occupation		
Trading	99	30.7
Other Specify	68	21.1

(driver, mechanic, shop attendant)		
Artisan	62	19.2
Student	51	15.8
Farming	29	9.0
Government employee	14	4.3
Religion		
Christian	240	74.3
Non-Christian (Islam and Traditional)	83	25.7
Ethnicity		
Akan	211	65.3
Mole Dagbani	98	30.3
Ga/Ewe/Guan	14	4.3
Geographical location		
Urban (Kumasi metropolis)	162	50.1
Rural (Offinso North)	161	49.9
Household size		
5 or more	191	59.1
Below 5	132	40.9
Household monthly income (GH Cedis)		
0-499	148	45.8
500-999	108	33.4
1000-1499	40	12.4
1500+	27	8.4

GH= Ghanaian; SD= standard deviation

3.4.2 Health System Accessibility

As shown in Table 3.2, the majority (98.5%) of participants perceived traditional medicine to be culturally acceptable. Likewise, 54.5% and 56.7% reported that TM was more accessible from a geographical location and monetarily point of view, respectively.

Table 3.2: Healthcare accessibility among participants

	Frequency (n)	**Percentage (%)**
Financially accessible medical system		
TM system	183	56.7
Orthodox system	140	43.3
Total	323	100
Geographically accessible medical system		
TM system	176	54.5
Orthodox system	147	45.5
Total	323	100
Culturally acceptable medical system		
TM system	318	98.5
Orthodox system	5	1.5
Total	323	100

3.4.3 Patronage, Knowledge, Attitude, Preference about TM Integration and Engagement with the Integrated Health System

The quantitative findings on participants' patronage of, knowledge about, preference for, attitude to TM and engagement with the integrated health system are shown in Table 3.3. All constructs had acceptable reliability or internal validity as determined by Cronbach's alpha; attitude (0.673), preference (0.820), knowledge (0.6885), experience (0.699) and patronage (0.385).

Patronage of and Knowledge about TM Integration.

An overwhelming majority (95%) of the participants had used TM. However, nearly none of them consulted their physicians (95%) or pharmacists (96.1%) before TM usage. Additionally, only 59.6% of the participants who had used TM reported that they sought healthcare advice from TM practitioners, meaning some participants used TM based on their own discretion. Participants had some form of knowledge about TM integration into the Ghanaian health system. Most (95.8%) participants were aware of licensing and existence of laws governing TM practice in Ghana. Nonetheless, only 46.3% had knowledge about the presence of TM directorates in selected hospitals in Ashanti region and Ghana as a whole.

Attitude towards Safe TM Practice

The majority of participants believed that TM practitioners should have a degree in the profession (83.6%) and should acquire certification from the Ministry of Health before they are allowed to practice (97.8%). Ninety-eight percent (98%) of participants insisted that the production and sale of TM products needed to be controlled by the Ministry of Health. Almost all participants (99.1%) felt that TM products are considered safe if they have license and registration number. All participants, (99.4%) believed that TM containers/packages must specify names of active ingredients, required dosage, expiry date and instructions on how and when to use the product. They (99.7%) also believed that TM products should be labelled with an approval note from the Food and Drug Authority (FDA). All study participants (100%) maintained that TM containers/products should have a warning of possible adverse effects and

contraindications. A majority of participants (64.7%) felt pharmacists could offer useful advice about traditional therapies.

Preference for TM Integration

Most participants demonstrated a positive preference for TM integration. For example, 96.6% want physicians to follow up/check with them when they are using TM to avert side effects; 80.5% want to receive advice from physicians about safe usage of TM products/services and 79.3% felt a physician can monitor their health better if the physician knows the type of TM they use and the prescriber. A significant percentage of participants (77.1%) would feel safer to patronise TM products and services if traditional therapy was properly integrated into the formal health system.

Engagement with the Integrated Health System

Generally, it was reported that cross-referrals rarely occurred between orthodox and TM practitioners in the Ashanti region. When participants were asked about their interaction with the integrated system, 92.9% and 97.8% of participants had never been referred by a medical doctor to TM practitioners or vice versa, respectively. In terms of prescription of medication, 96.9% of participants recounted that TM had never been prescribed to them at hospitals/clinics or by a medical doctor. Likewise, 98.8% also stated that a TM practitioner had never prescribed orthodox medicine to them.

Table 3.3: Participants' Patronage, Knowledge, Preference, Experience and Attitudes towards TM Practice and its Integration into the Formal Health System.

Variables/Questions	**Yes**		**No**	
	n	%	n	%
Patronage of TM				
Have you ever used TM? (By TM, I mean the use of plant seeds, berries, roots, leaves, bark, flowers for medicinal purposes)	307	95.0	16	5.0
Do you seek health advice from TM practitioners?	183	59.6	124	40.4

Do you ask your physician about TM when you want to use them?	15	5.0	292	95.0
Do you ask the pharmacist about TM when you want to use them?	12	3.9	295	96.1
Knowledge about TM integration				
Do you have knowledge about the incorporation of TM into health system?	214	66.2	109	33.8
Is there a license for TM practice in Ghana health system?	205	95.8	9	4.2
Are there laws to regulate TM in Ghana?	205	95.8	9	4.2
Are you aware of the introduction of TM directorate in some hospitals in Ghana/Ashanti region?	99	46.3	115	53.7
Attitude towards safety of TM practice				
Should TM container have a warning of possible side effects and interaction with other medications?	323	100.0	0	0.0
Should TM container have a clear note if the medicine is approved by FDA as a safe medication?	322	99.7	1	0.3
Should TM container be labelled with the name of active ingredients, required dose and instruction on when to use?	321	99.4	2	0.6
Should TM container be labelled with the expiry date?	321	99.4	2	0.6
Should TM container have a license and registration number?	320	99.1	3	0.9
Does the production and selling of TM products need to be regulated by Ministry of Health?	317	98.1	6	1.9
Should TM practitioner be certified from the Ministry of Health?	316	97.8	7	2.2
Should TM practitioner have a degree in this profession?	270	83.6	53	16.4
Do you think the pharmacist can give useful advice to you if you want to use TM?	209	64.7	114	35.3
Preference for TM integration				
Do you prefer TM integration into the formal health system?	314	97.2	9	2.8
Do you want your physician to follow up when you are using TM to avoid any side effect?	312	96.6	11	3.4
Do you want your physician to give you advice about safe use of TM?	260	80.5	63	19.5
Do you think a physician can monitor your health better if he/she knows the kind of TM you are using and who prescribed it?	256	79.3	67	20.7
Would integrating TM practice into health system make you feel safer to use TM?	249	77.1	74	22.9

Engagement with the integrated health system				
Have you ever been referred by a medical doctor to a TM practitioner?	23	7.1	300	92.9
Have TM ever been prescribed for you at the hospital/clinic by a medical doctor?	10	3.1	313	96.9
Have you ever been referred by a TM practitioner to a medical doctor/hospital/clinic?	7	2.2	316	97.8
Have orthodox medicines ever been prescribed for you by a TM practitioner?	4	1.24	319	98.8

3.4.4 Satisfaction from Health Systems

Of the total sample, 81.4% of participants indicated that traditional therapies are highly effective, while 9% were neutral (Table 3.4).

Table 3.4: Satisfaction from health systems based on effectiveness.

Effectiveness of health systems		
	Frequency (n)	**Percentage (%)**
TM system	263	81.4
Orthodox system	31	9.6
Indifferent	29	9.0
Total	323	100

3.4.5 Socio-demographic Characteristics and Knowledge about TM Integration

Table 3.5 shows the association between socio-demographic characteristics of participants and knowledge about TM integration into the Ghanaian health system. There was sufficient evidence of a positive association between knowledge about TM integration and sex ($p<0.001$), marital status ($p=0.013$**)**, place of residence (0.001), household size ($p<0.001$.). This implies that more males (76.5%) than females (54.9%) knew of the integration process; unmarried participants (71.8%) exhibited more knowledge about TM integration than their married counterparts (58.5%) did. Similarly, majority of the urban dwellers (75.3%) and those with less than five household members (78.8%) were more knowledgeable about TM integration than the rural residents (57.1%) and participants with five or more household members (57.6%).

Table 3.5: Socio-demographic characteristics and knowledge about TM integration into health system

Variables	Yes		No		p-value
	n	%	n	%	
Sex					**<0.001**
Male	130	76.5	40	23.5	
Female	84	54.9	69	45.1	
Age					**0.731**
Below 20	30	68.2	14	31.8	
20-29	96	69.9	42	30.4	
30-39	35	64.8	19	35.2	
40-49	19	63.3	11	36.7	
50+	34	59.6	23	40.4	
Marital status					**0.013**
Unmarried	135	71.8	53	28.2	
Ever married	79	58.5	56	41.5	
Educational level					**0.378**
Secondary/Senior High School	78	69.6	34	30.4	
Middle/Junior High School (JHS)	66	69.5	29	30.5	
No formal education	34	58.6	24	41.4	
Tertiary	20	69.0	9	31.0	
Primary	16	55.2	13	44.8	
Occupation*					**0.901**
Trading	63	63.6	36	36.4	
Other Specify	47	69.1	21	30.9	
Artisan	42	67.7	20	32.3	
Student	35	68.6	16	31.4	
Farming	17	58.6	12	41.4	
Government employee	10	71.4	4	28.6	
Geographical location					**0.001**
Urban (Kumasi metropolis)	122	75.3	40	24.7	
Rural (Offinso North)	92	57.1	69	42.9	
Religion*					**0.055**
Christianity	167	69.9	73	30.4	
Islam	46	57.5	34	42.5	
Traditional	1	33.3	2	66.7	
Ethnicity					**0.126**
Akan	148	70.1	63	29.9	
Mole Dagbani	58	59.2	40	40.8	
Ga/Ewe/Guan	8	57.1	6	42.9	
Household size					**<0.001**
5 or more	110	57.6	81	42.4	
Below 5	104	78.8	28	21.2	
HH monthly Income (GH Cedis)*					**0.119**

0-499	99	66.9	49	33.1	
500-999	66	61.1	42	38.9	
1000-1499	26	65.0	14	35.0	
1500+	23	85.2	4	14.8	

*Fisher exact test

3.4.6 Predictors of Preference for TM Integration into Formal Health System

A multivariable regression analysis was used to determine predictors of preference for TM integration into the health system adjusting for all possible confounders (Table 3.6). Household sizes of five or more and lower incomes of 500-999 were associated with preference for TM. Thus, in comparison to household sizes less than five, the odds of household sizes of five or more having a high preference for TM integration was 0.47, 95%CI (0.23, 0.95), p=0.034. Similarly compared to other income brackets, odds of participants who earn monthly incomes between 500 and 999 having high preference for TM integrations was 0.37, 95%CI (0.18, 0.75), p=0.006. Male participants and unmarried participants were more likely to have a high preference for TM integration, but there was insufficient evidence to reject the null hypothesis.

Table 3.6: Predictors of preference for traditional medicine integration into health system

Multivariable analysis			
Variable	AOR	[95%CI]	p-value
Sex			
Male	1.81	[0.96-3.41]	0.067
Age			
Age	0.98	[0.96-1.00]	0.222
Marital status			
Unmarried	2.06	[0.85-5.02]	1.112
Household size			
5+	0.47	[0.23-0.95]	0.034
Income (GHC)			
500-999	0.37	[0.18-0.75]	0.006
1,000-1,499	0.44	[0.17-1.18]	0.104
1,500+	0.67	[0.20-2.31]	0.528

*AOR = Adjusted Odds Ration *CI = Confidence Interval *GHC = Ghana Cedi

Qualitative Phase

Twenty participants comprising 11 males and 9 females, aged between 20-81 years were involved in the interviews. Eight themes emerged from the data. These themes have been

mapped under two constructs of the framework – psychosocial factors (trust in TM use, modernised TM products/services, quality of care) and consumer experience (healthcare accessibility, preference/perceived benefits of integration, knowledge about TM integration, satisfaction derived from health systems, recommendations for better integration).

Psychosocial Factors

3.4.7 Trust in TM Use

Participants irrespective of their geographical location stated that they trusted the use of TM and attributed their trust to the 'natural' nature of TM and its ability to offer total healing for one's health condition without side effects.

> *"I trust TM a lot because they are natural, it does not give side effects and it cures our sickness completely."* [Participant 3, Akumadan, Female, 45 years]

> *"The TM are the best and they are natural. I trust the usage. They help in total healing from a disease a person might be suffering from without any side effects."* [Participant 15, Kwadaso, Male, 64 years]

3.4.8 Modernised TM Products / services

Furthermore, participants described services offered by the traditional health system to be improved. They indicated that current TM practice in Ghana is modernised with advanced ways of processing and packaging TM products as well as the use of machines in diagnosing diseases before treatment.

> *"TM these days are not like what it used to be in the olden days. We are now in modern Ghana and everything has been modernised. Things have changed. When you look at some TM, the way they have packaged them tells you that things have really changed. It is not like the time that they only put it in a pot for you and you have to just boil it and be taking it every day. Now, they make some like capsules and when you go to the traditional herbal clinics, they have machines that they use to check you before they even give you drugs. Pre Nkwa herbal centre for instance has a lot of machines there. They treat you just like you have been to an orthodox hospital."* [Participant 14, Kobreso, Male, 38 years]

> *"Almost all the TM practitioners are also using the modern method of processing drugs. Now, they have a lot of machines to detect diseases."* [Participant 8, Anloga, Male, 81 years]

3.4.9 Quality of Service

Majority of the participants recounted that TM practitioners have a more humane attitude towards patients than their orthodox counterparts do. Thus, they (patients) receive quality healthcare when they patronise services at TM centres. To users, this humane attitude of TM practitioners serves as a catalyst for therapy usage.

> *"When you go to the TM centres, they will keep calm and listen to you and even ask you to be using the TM the way they have asked you to do. They will pamper you and you will feel very happy. That one alone motivates you to use the medicine they have given you unlike the hospitals where from the nurses to the pharmacies all of them will be shouting at you like you are not a human being."* [Participant 2, Afrancho, Female, 50 years]

> *"The orthodox health providers don't care about human beings. When you go and you are dying, they will allow you to die. The nurses especially are not respectful…I told you that I have been visiting a TM centre right; the people there are very good. From the nurses to the doctor and even the security man there. They are all very good and treat clients with much respect."*
> [Participant 20, Tarkwa Maakro, Male, 65 years]

Consumer Experience

3.5.0 Health System Accessibility

Three issues relating to healthcare accessibility were identified. These issues include availability of services, financial accessibility and faster delivery of service. Participants' choice of healthcare was largely influenced by these factors. We found that the majority of the participants regardless of their geographical location deemed traditional health system more accessible in terms of physical location.

> *"Now, we have TM clinics and they are all close. They sell TM products in cars and in every corner."*
> [Participant 6, Anloga, Female, 40 years].

> *"Hospitals can recommend certain medicines for you and you will roam from pharmacy to pharmacy without getting the medicine unless you pick a car to places like Kumasi or Accra. It makes it difficult hence inaccessible. However, a TM doctor can just go to the bush, gather some plants, and prepare for me. Therefore, the TM is more accessible to me."* [Participant 4 Akumadan, Male, 24 years].

When discussing the financial accessibility of health systems, participants stressed that, orthodox health services tend to be more economical due to the presence of the National Health Insurance Scheme.

> *"The hospital that is the orthodox system since they are covered by the government (health insurance), I do not have to spend much money. The government have taken care of some of the cost so when I add something small (my money) I get the drugs I need."* [Participant 13, Asuoso, Male, 43 years]

In addition, some participants clarified that the cost of TM is dependent on the nature of practice. Thus, TM tends to be cost-effective when delivered within informal settings (community-based practice). However, services are expensive when offered in formalised settings such as clinic because TM products and services are uninsured.

> *"You see there are TM centres that have been opened like a hospital or clinic…When you go to such places, they take a lot of money from you because of what they do. Their clinics are privately owned, and they do not get money from the government (not under health insurance scheme), so they do everything by themselves and that makes their services more expensive but TM that are offered by those in houses are really cheap."* [Participant 12, Asuoso, female 38 years]

One of the biggest incentives to accessing traditional health system as stated by participants is the faster delivery of service/care. This makes traditional healthcare desirable to the populace.

> *"If it is about how quickly you get access to care, then the TM centres are the best. When you get there, they attend to you on time. All the test they have to do they make sure they do it fast for you. The TM clinic that I visited, there was a queue but it is not as long as the one at the hospitals. As for the hospital, when you are going make up your mind that you are going to spend the whole day there. There is always a long queue there and you do not get treatment on time."* [Participant 20, Tarkwa Maakro, Male, 65 years].

> *"When I go to the TM clinic, I don't waste time. They attend to me quickly whenever I go there. The queue is not long so you get the chance to meet the doctor on time. This makes accessing care at TM centres very pleasant to me"* [Participant 10, Asawase, Female, 80 years]

3.5.1 Preference / Perceived benefits of TM Integration

Participants expressed their preference for TM integration and perceived that integrating TM into the Ghanaian health system could lead to generation of income and preservation of indigenous medicine. While participants from urban setting focused on the financial benefits, participants from the rural setting emphasised the preservation of indigenous medicine.

> *"It will help us as a country. It will help to reduce the amount of money we spend on drugs that are imported into the country. If we are using our own TM, then there would not be the need to import a lot of the foreign drug into the country. TM practitioners will also get money because they will be employed to work in the various hospitals. Therefore, both their products and services will be marketed and they will earn money."* [Participant 16, Kwadaso, Male, 43 years]

> *"Through integration, the TM would not fade out of the system. It will help us to preserve our indigenous medical knowledge."* [Participant 14, Kobreso, Male, 38 years]

3.5.2 Knowledge about TM Integration

The study showed that participants had limited knowledge about TM integration into the Ghanaian health system. Participants were familiar with the recommendation of TM to patients by medical doctors, training of TM practitioners at the Kwame Nkrumah University of Science and Technology (KNUST) and licensing of TM practitioners. The media, particularly television and radio were reported to be the common source of information.

> *"Ok it has been going on because when you go to the hospital and you have a disease like Hepatitis B, they (medical doctors) can recommend TM for you"* [Participant 4, Akumadan, Male, 24 years]

> *"I am aware some people are being trained at KNUST to become TM doctors. I got to know about it from a doctor who was on radio. He said it when he was talking about TM practice in Ghana, so for that one I know."* [Participant 17, Kwadaso, Male, 50 years]

> *"Oh! I have heard of registration of TM practice on radio and television. I know some of the TM practitioners in Ghana here are working with licenses. The TM practitioners who are working underground are those who do not have licenses."*[Participant 11, Asawase, Male, 24 years]

Nonetheless, the majority of participants were unfamiliar with the presence of integrated health facilities in Ghana. Despite participants' exposure to the media, many of them had no

clue about the presence of TM clinics in some selected public hospitals in the Ashanti region and the country as a whole.

> *"I have no news about TM clinics situated at hospitals. I always listen to the radio and television but I have not heard anything like that before."*
> [Participant 7, Anloga, Female, 44 years]

> *"I do not know health facilities that have some (TM units). I am not even sure that they have done the integration."* [Participant 18, Nkenkaasu, Female, 24 years]

3.5.3 Satisfaction Derived from Health Systems

Participants measured their satisfaction based on efficient collaboration between health practitioners in administering care and effectiveness of therapy. Two themes emerged: helpful collaboration between health practitioners and potency of TM. Although, most of the participants support the practice of integrated health, only few have had the opportunity to interact with the system. The few participants who have, utilised integrated healthcare recounted positive and satisfying outcomes. Thus, users of the integrated system demonstrated that the merging of the two health systems could offer timely and appropriate healthcare to the populace.

> *"I was happy the medical doctor referred me to a TM provider. The reception alone from the two providers was just great. The initiative of the medical doctor to refer me to the TM doctor and the timely and appropriate treatment from the TM provider were extremely fulfilling to me. You can see that through the proper interaction between the two providers, I am now very healthy again."* [Participant 3, Akumadan, Female, 45 years].

> *"The cross referral has helped me a lot. I do not know what would have happened to me if the specialist at Okomfo Anokye did not refer me to the TM doctor. In fact, the way both practitioners came together and offered the best of care was excellent. The specialist did not look down on the abilities of the TM doctor and indeed the TM provider also lived up to expectation. Now, I am healthy again due to communication between these two health providers."* [Participant 20, Tarkwa Maakro, Male, 65 years].

Other participants also gave a positive account regarding the use of the traditional health system. According to them, TM are potent in treating maladies.

"When I got pregnant to my third child, I was having pressure (hypertension). It was very serious and I did not know what to do. I was always sending it to the hospital and they always gave me drugs that will help me but I was not really seeing any serious changes. I was still in pain until I took a TM…When I took it, I could see a lot of changes in my body. The pressure has stopped." [Participant 6, Anloga, Female, 40 years]

"I felt sick and I was asked by a friend to see a TM provider so I went to the TM centre. The TM was good….I took it and within the first week, I started seeing improvement. The TM was really good for me and I was healed from that health problem totally." [Participant 18, Nkenkaasu, Female, 24 years]

3.6 Recommendations from Participants to promote Proper Integration of the two Health Systems

To wrap up, participants shared their opinions on how the integrated system could be improved. These recommendations include sensitisation of the public about the operation of an integrated system through the media, proper processing, packaging and certification of TM products/services, style of implementation and professional training of TM practitioners.

"When you implement an intervention and you advertise it, it makes people aware of the existence of that intervention. When people do not know, they wouldn't use it so they (policy makers) should make sure the advertisement becomes more through the media particularly radio and television stations." [Participant 11, Asawase, Male, 24 years]

"When you look at containers of TM products from countries like China, you will notice that they have written the expiring dates of the drugs on containers. Some of the TM here do not have that. Some of them are just packaged in plastic bags…they do not look attractive at all and they do not have any description on them too. No expiring date, nothing! Practitioners just write the names of the drugs, and what they are meant for on pieces of papers and that is it. They will not write the expiring date and even how to take them (dosage). It makes using them a bit dangerous. Therefore, they should package them very well. They should write the expiring dates and even how the drugs should be used. That way, it will meet the standard and can easily fit into the formal health system." [Participant 3, Akumadan, Female, 45 years]

"They have to train more people in the field of TM and make sure that they are good at what they do. Then, post them to the various hospitals and clinics. Now, TM doctors are not many but if they train more people, there will be more experts in the field and every health facility will have a TM doctor. Therefore, getting access to an integrated health facility/care will be easy." [Participant 10, Asawase, Female, 80 years]

Currently, Ghana is practicing an inclusive integrated health system. When participants were asked to suggest an appropriate integration approach, most of them opted for full

integration/inclusion of TM in the national health insurance scheme. They envisaged that a fully integrated health system has the advantage of making healthcare geographically and financially accessible to all.

> *"Integration should be done as a whole. It should be a nationwide thing….They should not say that let us integrate it at bigger facilities such as Okomfo Anokye teaching hospital and leave the smaller hospitals behind. They should take it to every hospital in the country. If this is done, everyone regardless of place of residence can get access to proper healthcare."* [Participant 5, Akumadan, Male, 57 years]

> *"TM offered at clinics are very expensive. If you do not have money, you cannot really patronise their services. Therefore, they should make it in such a way that TM products/services will be covered under the national health insurance scheme. That way, insurance will cover some of their charges just like it covers that of the hospitals/orthodox healthcare. If we do that, it will help everybody."* [Participant 7, Anloga, Female, 44 years]

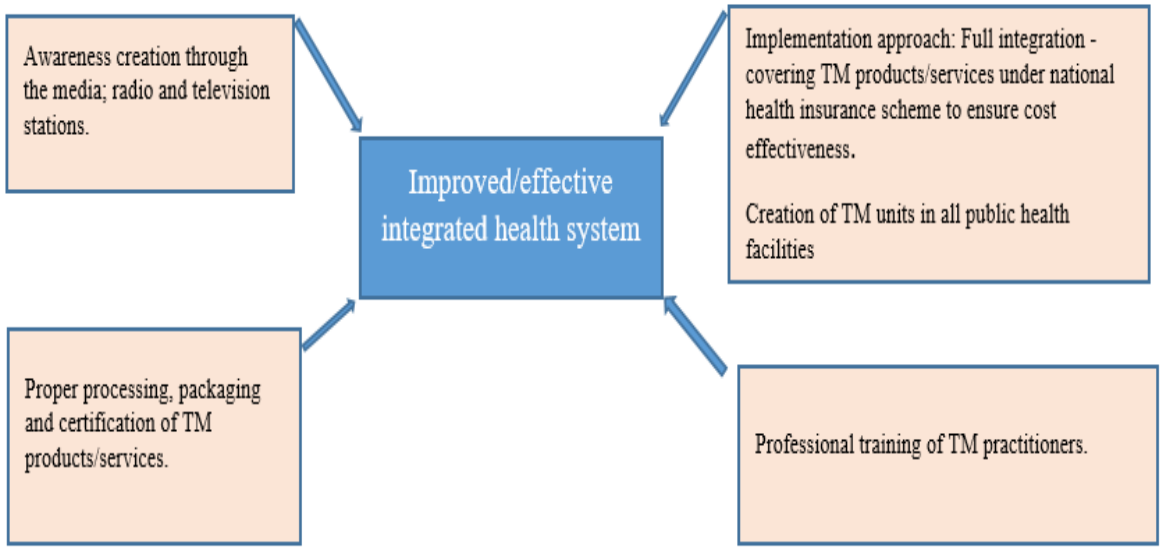

Figure 3.3: Participants' recommendations to ensure proper integration of TM into the health system.

3.7 Triangulation of Study Results

Table 3.7 presents the integration of quantitative and qualitative findings informed by the conceptual framework for integrating TM into national health systems.

Table 3.7: Merging of survey and qualitative results, guided by framework for TM integration.

Domain of the framework for TM integration into national health systems	Concept/theme	Concept/theme description	Quantitative findings	Illustrative qualitative response:
Contextual characteristics **(psychosocial factors):** Contextual characteristics/psychosocial factors describe the historic use or trust associated with TM usage in a given society.	Trust in TM use	Significant use of TM among residents of Ashanti region. Key reason cited for high use of TM among participants was trust in TM due to its natural state and negligible side effects.	High usage of TM among participants: Yes = 95.0% No = 5.0%	*I have much confidence in traditional therapies because you do not get any problems after taken them and it heals you completely, so I use them a lot.* [Participant 18, Nkenkaaso, Female, 24 years]
Consumer experience: Consumer experience is influenced by health system accessibility – physical, financial, cultural (Park & Canaway, 2019).	Physical availability of healthcare	Participants narrated how healthcare is geographically available to them.	The majority of participants considered TM geographically accessible. TM = 54.5% Orthodox = 45.5%	*The TM are very close. They take it around and if you want it, you just buy and use it. As for the orthodox medicine, no one will bring it to your shop or your work place. You have to look for pharmacy shop and buy.* [Participant 1, Afrancho, Female, 49 years]
	Culturally acceptable healthcare	Furthermore, TM appeared to be the traditionally acceptable health system among participants.	A considerable percentage of participants deemed TM as a culturally acceptable medical system: TM = 98.5 % Orthodox = 1.5%	*In the olden days…there were no hospitals and no clinics. Everything concerning our health was dependent on TM. When you are sick, they tell you that take traditional drugs and we are still using it. So, TM to me is culturally acceptable.* [Participant 20, Tarkwa Maakro, Male, 65 years] *Now, we have TM clinics and they have made it like the hospitals with their nurses and others…those TM clinics are expensive but if*

	Financial accessibility	Cost of care was dependent on nature of services delivered. In that, modernised TM practice was reported to expensive, while local TM services were deemed economical.	More than half of participants recounted TM to be less expensive: TM = 56.7% Orthodox = 43.3%	*you visit an old woman in the house to prepare some TM for you, that one is less expensive.* [Participant 19, Nkenkaaso, Male, 20 years]
Consumer experience: Consumer experience is impacted by satisfaction derived from utilising the various health systems as well as motivation for usage (Park & Canaway, 2019).	Satisfaction from health systems	Satisfaction from health systems was based on effectiveness of therapy.	More than three-quarters of the participants reported that they gain satisfaction from accessing TM because it is effective in treating ailments. TM = 81.4% Orthodox = 9.6% Indifferent = 9.0%	*The best medicine I can talk about is TM. If not for TM, I know I would not be alive by now. I was very sick. It was not easy for me at all but TM has saved my life.* [Participant 10, Asawase, Female, 80 years]
Consumer experience: Consumer experience is influenced by knowledge about the integration process (Park & Canaway, 2019).	Knowledge about TM integration	Participants demonstrated their familiarity with the integration process. Knowledge about integration varied among sex of participants.	More males (76.5%) than females (54.9%) were aware of TM integration into the Ghanaian health system p-value <0.001	*So yes, I have heard that TM has been integrated into our healthcare system. I am a man so I keep track of issues especially health related issues. Even our current president Nana Addo met some of the experts to find out from them how well they can implement that. So, I am aware of it.* [Participant 17, Kwadaso, Male, 50 years]
		Knowledge about integration differed in terms of marital status of participants.	Participants who were not married (71.8%) exhibited more knowledge about TM integration than their ever married	*I know there are some pharmacies that sell TM products. When you visit such a facility, the TM provider will tell you to go to the*

		counterparts (58.5%) p-value = 0.013	*hospital for the doctors to examine you before he starts treatment. That way, the provider will be sure of what you are suffering from and know the kind of drugs to give to you. I am young and single oo but I know a lot of things about health* [Participant 19, Nkenkaasu, Male, 20 years]
	Participants' residential status influenced their knowledge about TM integration.	A greater proportion of urban dwellers (75.3%) were more knowledgeable about TM integration than the rural residents (57.1%). Hence, being a city dweller was perceived to be advantageous. p-value = 0.001	*Oh yes, I have heard about TM integration on the radio, that is Peace FM. My brother, I feel lucky to be in the city because any new intervention starts from the city…They said that, now the hospitals have been made in such a way that when you visit the facility and you prefer TM, they will send you to a TM centre to be treated there. For instance, if you are suffering from malaria, they have some TM at the hospital that can treat malaria and they will prescribe that for you.* [Participant 16, Kwadaso, Male, 43 years]
	The size of participants' households influenced their knowledge about integration.	Participants with less than five household members (78.8%) were familiar with TM integration than those with five or more household members (57.6%).	*Currently, there are people at KNUST who are learning TM. That is what they have gone to school to study. We are only two in this house, I told you one of my grandchildren is staying with me*

			p-value = <0.001	*and he is the one who told me. He said it when I was sick and receiving care at a TM centre. Therefore, many facilities will have it (TM units) in few years to come.* [Participant 20, Tarkwa Maakro, Male, 65 years]
Consumer experience: Consumer experience is shaped by people's preference for integration (Park & Canaway, 2019).	Preference for TM integration	Larger household as a predictor of preference for TM integration. Participants with larger households were more likely to choose TM integration.	In comparison to household size less than 5, the likelihood of service users with household size five and above having preference for integration is [0.47; 0.23-0.95] p-value = 0.034	*I support integration with all my heart because with integration people like me who have larger families can have access to good healthcare. I have a large family my sister! In all, we are nine that is wife, seven children and myself. So do you understand why I prefer integration?* [Participant 13, Asuosu, Male, 43 years]
		Participants who had lower household monthly income have a high propensity to prefer integration.	The possibility that a participant who earned between 500 and 999 Ghana Cedis to prefer TM integration was lower than those who earned below GHC 500. **500-999:** [0.37; 0.18-0.75] p-value = 0.006 **1,000-1,499:** [0.44; 0.17-1.18] p-value = 0.104 **1,500+:** [0.67; 0.20-2.31]	*I prefer integration because if I go to the hospital and they are unable to cure me, then I can get treatment from a qualified TM doctor without having to spend much. I do not earn much; I earn just 300Gh Cedis a month so through TM integration, even with my little income, I will get proper care and can patronise quality TM products and services when the need arises.* [Participant 14, Kobreso, Male, 38 years]

p-value = 0.528

3.8 Discussion

This study investigated community members' experiences with TM integration into the Ghanaian health system using Kumasi metropolis and Offinso North district as study sites. The contextual/population characteristics and consumer experience components of the framework for integrating TM into national health systems (Park & Canaway, 2019) provided the theoretical underpinning for this research. Majority of the study participants were familiar with TM use and attributed their fondness for traditional therapies to its 'natural' nature and minimal side effects. They also noted the advanced nature of TM practice in Ghana. The high prevalence of TM use as reported in this study is consistent with the findings of Ghana statistical Service (GSS), which stated that 70% of people residing in Ashanti region patronise TM (GSS, 2012). Earlier studies in Ghana also reported high prevalence of TM use among expectant mothers, cancer patients, HIV positive patients and urban-periphery settlers (Gyasi et al., 2013; Mensah & Gyasi, 2012; Peprah et al., 2019; Yarney et al., 2013). The immense use of TM and improved nature of the practice in the Ashanti region and Ghana as a whole could be an incentive to the integration process because significant and cultural use of TM is identified as one of the indicators/contextual factors needed to promote successful TM integration into mainstream health systems (Park & Canaway, 2019).

The study established that access to healthcare is dependent on physical, financial and cultural factors. The common presumption in the integration discourse is that people in middle/low income countries continue to utilise TM because such medicines/services are inexpensive (World Health Organization, 2002), but this is arguable in our findings. The study suggests that the cost of TM is dependent on the nature of practice. Thus, modernised TM products/services are deemed costly owing to absence of insurance cover. However, community-based TM practice continues to be economically affordable. Some service users perceived orthodox healthcare to be inexpensive due to the presence of national health

insurance scheme. Exorbitant prices charged at TM clinics could be a hindrance to integration if policy makers do not have the political will or intention to include traditional health services in the national health insurance scheme (Appiah et al., 2018; Park & Canaway, 2019). However, effective listening, trust, respect, sympathy, prompt delivery of services, effectiveness of therapy, receptiveness and effective communication between clients and TM practitioners could boost the integration process. Service users often evaluate satisfaction based on the effectiveness of therapy, responsiveness of service providers (efficient collaboration) and timely delivery of health services (Mosadeghrad, 2012).

Participants had a high preference for TM integration into the formal health system. Similar results have been recounted in the works of Agyei-Baffour et al. (2017) and Boateng et al. (2016) where service users preferred and were pleased with the practice of integrated health in the Ashanti region. The authors reported that service users felt safe patronising TM services and products from qualified and licensed TM practitioners (Agyei-Baffour et al., 2017). In another study, community members demonstrated strong preference for integration by urging policy makers to intensify education to unify the two health systems as well as promote proper enforcement of policies governing the integration process (Gyasi et al., 2017). Service users' strong desire for collaboration between the two health systems could improve the process of integration by increasing consumers' patronage of traditional health services at formalised health centres thereby eliminating consumer-led integration and promote safe TM practice (Agyei-Baffour et al., 2017).

Additionally, some demographic characteristics of participants were significantly associated with preference for TM integration in the regression analysis. For example, the present study has shown that people who earn less than GHC 500 are more likely to prefer TM integration than people who earn higher monthly incomes. The qualitative phase affirms this outcome as a similar trend was also observed. Results from both phases of the study clearly

indicate low-income earners' enthusiasm for the practice of integrated healthcare. These results however, contradict evidence from another study in Ghana where preference/usage of integrated services was reported to be largely associated with high-income earners (Agyei-Baffour et al., 2017). We speculate that low-income earners' preference for TM integration could be useful in expanding their knowledge about the practice of integrated health and improve their health-seeking behaviour. The use of Food and Drug Authority reporting system on Adverse Drug Reaction (Food and Drugs Authority, 2016) serves as a monitoring system used in informing and improving the delivery of health services in Ghana particularly in the field of TM practice.

The study found that knowledge concerning TM integration is low among service users. Some participants were familiar with the licensing and/or regulations of TM practice in Ghana as well as training of TM practitioners at KNUST. However, the majority of participants were ignorant of the presence of TM clinics in selected public hospitals in the Ashanti region. This finding corroborates the results of studies conducted at one of the integrated health facility in the Ashanti region where clients reported not having knowledge of the presence of TM unit at the facility (Agyei-Baffour et al., 2017; Boateng et al., 2016). This knowledge gap could be because of the absence of a written protocol or an agency to publicise the presence of TM departments in some government hospitals in Ghana (Appiah et al., 2018; Boateng et al., 2016).

The non-existence of a protocol/agency might be an obstruction to the integration process because it could lead to 'consumer-led' integration and misconceptions about the system in its entirety, which can mar the quality of integrated healthcare practiced in Ghana (Boateng et al., 2016; Park & Canaway, 2019). Our study suggests that sex, marital status, household size and residential status of participants were significantly associated with knowledge about TM integration. For example, findings from both quantitative and qualitative phases of our study show that males' and urban settlers' are more familiar with the practice of

integrated healthcare in Ghana. This finding seems to support the pluralist model which postulates that gender and ethnicity/sub-groups should be core elements in defining and designing any future strategies regarding TM integration into national health systems to ensure greater involvement (cross-referral) and satisfaction for all stakeholders within the health system (Ben-Arye, Karkabi, Shapira, et al., 2009; Lagro-Janssen, 2016).

Cross-referral is a tool needed to integrate TM effectively into formal health system (Gyasi et al., 2017; Park & Canaway, 2019). However, study participants disclosed weak cross-referrals between the two health systems. Weak referral as reported in the current study is not surprising. A previous study in Ghana showed that orthodox health providers were only prepared to collaborate with TM practitioners on the condition that the Ministry of Health offers a well drafted document/blueprint describing roles and standard operating procedures, which apply to all stakeholders in the system (Asante & Avornyo, 2013; Boateng et al., 2016). Likewise, referrals from TM practitioners to orthodox providers were also low. This could mean that to some TM practitioners, integration is a strategy to control TM practice by favouring those with a tertiary degree over those who practice within communities just as portrayed in a survey conducted in rural Nepal (Poudyal et al., 2003). The minimal understanding and enthusiasm from both groups of health practitioners could make the integrated system unproductive hence produce unsatisfactory outcomes. This could impede the interaction between service users and synergistic teams of biomedical and traditional health providers.

The few service users who had interacted with the integrated system together with TM users narrated a satisfactory outcome. Satisfaction means that diagnosis, care or therapy achieves the preferred outcome from service users' perspective (Mosadeghrad, 2012). The expectations of service users about the systems were met in this study. This means that quality of care attributes such as: conducive environment, empathy of practitioners as well as effectiveness of therapy were effectuated (Mosadeghrad, 2012). Satisfactory reports of clients

might improve the Ghanaian integrated system through increased knowledge and patronage of integrated health services.

Generally, study participants regardless of their geographical location, demonstrated their support for TM integration. However, preferences have not yet migrated into engagement with the integrated system. The level of preference and tolerability from service users could facilitate successful practice of integrated health system in Ghana if manned properly. Countries such as China, Japan and Republic of Korea have successfully improved collaboration between the two health systems (World Health Organization, 2000). These Asian countries have emerged as the best health systems similar to standards in the developed world, due to effective absorption of traditional healthcare into mainstream health systems (World Health Organization, 2000). The success of these countries illustrates that with the availability of standardised knowledge, wide-ranging methodologies and rich scientific experiences in TM, the field could be a competent and efficient component of the Ghanaian health system. Therefore, study participants suggested that the Ghanaian integrated system could be enriched through proper processing, packaging and certification of TM products/services, professional training of TM providers as well as sensitisation of the service users through the media.

3.8.1 Strengths and Limitation

The study presents relevant findings on healthcare accessibility, knowledge about integration and satisfaction derived from the various health systems in Ghana's Ashanti region using a mixed methods approach. The existence of such knowledge is essential to inform and guide policy makers to modify existing policies, which might improve the implementation of the intervention. The selection of participants from both rural and urban districts increases the generalisability of the study results thereby making it useful for policy advice. However, participants could over-estimate or exaggerate their narrative given that TM use is prevalent in the study area.

3.9 Conclusion

In conclusion, a considerable number of residents in Ashanti region patronise TM. The efficacious nature of TM and empathetic attitude of its practitioners show a positive indication or an enabler to the integration process. However, most of the participants were not aware of the presence of TM clinics in selected hospitals in the region, therefore, accounting for low level of engagement with the integrated system. Service users' unfamiliarity with the presence of integrated health facilities in Ghana could be an impediment to the practice of integrated healthcare. Measures such as professional training of TM practitioners, proper processing, packaging and certification protocols, correct implementation approach and sensitisation of the public about the practice of an integrated system and its associated benefits (using a drafted protocol/authorised agency/media) could be helpful in refining the Ghanaian integrated system. If TM is integrated properly into the health system, it might create an opportunity for service users to access both TM and orthodox healthcare in a formalised setting, which is the highly preferred option on the part of service users. Likewise, the practice of integrated healthcare could guarantee the provision of quality healthcare for users since the system will draw on the strengths of both health systems to create an all-inclusive healthcare unit that will secure the safety and satisfaction of service users. Regular evaluation of patient satisfaction and outcome measures could be an effective strategy for improving health services delivery since evaluation is becoming an important component of health service design and implementation. With this in mind, there is the need for future studies to explore the perceptions and experiences of other stakeholders such as health practitioners in relation to the practice of integrated health in Ghana.

Contributions of Chapter 3 to thesis

The mixed methods study presented in **Chapter 3** addresses **RQ2**: What are the knowledge, preference and experiences of Ashanti region community members/service users in relation to TM integration into the health system? Findings from this study highlighted that participants were aware of the licensing and training of TM practitioners. However, knowledge of the existence of TM units/clinics in some public health facilities in the study area was minimal. The inadequate knowledge about the practice of integration coupled with weak cross referrals accounted for low patronage/usage of integrated healthcare services in the Ashanti region. To fully appreciate the experiences of service users/community members required investigating the involvements of other stakeholders in the health system. Therefore, the findings from this research aided the development of the interview guides used in **Chapter 4** to explore the perceptions, experiences and recommendations of orthodox health practitioners (Medical doctors, Pharmacists, Nurses) and hospital administrators in the Ashanti region regarding TM integration into the Ghanaian formal health system.

Chapter 4: Perceptions and Experiences of Orthodox Health Practitioners and Hospital Administrators towards integrating Traditional Medicine into the Ghanaian Health System (https://doi.org/10.3390/ijerph182111200)

4.1 Chapter Overview

Abstract: The government of Ghana has been piloting traditional medicine (TM) integration in 17 health facilities across the country. However, the nature of current practice of integrated healthcare has not been thoroughly explored. This paper sought to explore the experiences and recommendations of orthodox health practitioners and hospital administrators in Ashanti region regarding the practice of integrated healthcare in Ghana. The study adopted a qualitative, phenomenological approach involving 22 interviews. Purposive sampling technique was used in selecting study participants. Framework analysis was used to draw on the experiences of participants relating to TM integration.

Participants were knowledgeable about the existence of integrated health facilities and stated that TM integration has created options in health services. However, participants deemed the integrated system ineffective and attributed the inefficiency to poor processing and certification of TM products, opposition of medical doctors to TM usage, absence of a protocol to guide the integration process and inadequate publicity. Professional training of TM practitioners and inclusion of TM in medical school curriculum could improve collaboration between the health practitioners. Future research should focus on assessing the opinions and involvements of TM practitioners about the integration of traditional therapies into national health systems.

4.2 Introduction

Traditional medicine (TM) comprises ways of treating, preserving and/or promoting health before the existence of orthodox health care (World Health Organization, 2000). The World Health Organization defines TM as the sum total of knowledge, and practices, whether explicable or not, used in the diagnosis, prevention and elimination of physical, mental and social imbalance relying exclusively on practical experience and observation handed down from generation to generation, whether verbally or in writing (World Health Organization, 1978). TM includes a range of health practices that incorporate plant, animals, vegetables (mineral-based medicines), spiritual/faith healing and exercise applied solely or in combination to promote or maintain wellbeing as well as treat, diagnose or prevent ailments (World Health Organization, 2002). In Ghana, TM comprise the use of medicinal plants and faith/spiritual healing (Abel & Busia, 2005; Gyasi et al., 2017). However, in this study, TM refers to products such as medicinal plants, barks, roots whether processed or not for curative purposes.

Global communities have extensively used TM as part of primary healthcare (Park & Canaway, 2019). Statistics have shown that about 80% of the world's population rely on TM as first line of healthcare (WHO, 2002); (World Health Organization, 2011). The utilisation of TM in low/middle income countries including Ghana has increased over the years (Gyasi, Siaw, & Mensah, 2015). However, only a negligible proportion of health service users disclose their use of TM to orthodox health practitioners (Davis, Oh, Butow, Mullan, & Clarke, 2012; Gyasi et al., 2013; Robinson & McGrail, 2004). Similarly, the majority of orthodox health practitioners are minimally equipped to appropriately guide service users on TM use (Clement et al., 2005; Pirotta et al., 2010; Suchard, Suchard, & Steinfeldt, 2004).

Patients' demands coupled with political influence, have contributed to the current interest in merging traditional and orthodox health systems, into what is now labelled an integrated health system (Hsiao et al., 2006). For example, in most Asian countries, the use of

TM is prevalent, although the orthodox health system is readily available. In China, TM accounts for about 40% of all healthcare delivered and is used to treat about 200 million service users yearly whereas in Japan, 60-70% of orthodox medical doctors prescribe TM for service users (World Health Organization, 2002). For developing countries such as Zambia, Nigeria, Mali and Ghana, TM is used particularly among rural residents in treating children with fever at home because of readily availability of TM in rural settings (World Health Organization, 2002).

The inclusion of complementary and traditional medicine (TM/CAM) in medical schools' curricula in the United Kingdom and United States of America has also been highlighted in the literature (World Health Organization, 2002). Clearly, TM is increasingly being adopted into the orthodox health system as well as the medical curriculum (Hsiao et al., 2006; Wetzel, Eisenberg, & Kaptchuk, 1998). This implies that the orthodox health system (knowledge, practices, organisation and social roles of medicine in westernised cultures (Osemene et al., 2011) has moved from an opposing viewpoint to a gradual acceptance of integration with TM (Coulter, Singh, Riley, & Der-Martirosian, 2005; Hsiao et al., 2006).

The practice of integrated health system engages the orthodox and traditional health systems in delivering health service to populations. TM integration into formal health systems are categorised into three groups (integrative, inclusive and tolerant health systems) based on the level of incorporation, mainly in the areas of regulation, education, monitoring and health financing schemes (World Health Organization, 2002).

A country is said to be practicing a tolerant health system if the national health system is solely based on the orthodox health system; however, certain aspects of TM are tolerated (Vasconi & Owoahene-Acheampong, 2010; World Health Organization, 2002). In contrast, in integrative health systems, TM is officially accepted and utilise TM in all aspects of healthcare delivery (Vasconi & Owoahene-Acheampong, 2010; World Health Organization, 2002).

Integrative health systems are noted for ongoing research, training and education geared towards TM practice as well as proper inter-professional partnership between orthodox and TM systems (Kwame, 2021; Wiese, Oster, & Pincombe, 2010). Some Asian countries such as Korea, China, Hong Kong, Singapore and Vietnam have effectively incorporated TM into their formal health system (Chang & Basnyat, 2015; Hussain & Malik, 2013; Kwame, 2021; Vasconi & Owoahene-Acheampong, 2010). In the aforementioned countries, service users have the option of accessing solely traditional health therapies or a combination of the two healthcare services at formalised settings. In these settings, TM therapies such as Chinese TM, acupuncture (World Health Organization, 2002) and services such as diagnosing, and prescription of TM medications are not only available in both government and privately owned health facilities but also included in the national health scheme (Vasconi & Owoahene-Acheampong, 2010).

Conversely, in other countries, an inclusive health system approach is utilised where TM is officially accepted but not completely included in national health schemes and formal training on TM at tertiary educational level might not be available (Vasconi & Owoahene-Acheampong, 2010). For example, some high income countries (Australia, Canada, United Kingdom) and low/middle income countries (Ghana, Mali, Nigeria) ascribe to the inclusive health system (Vasconi & Owoahene-Acheampong, 2010; World Health Organization, 2002).

An inclusive health system is characterised by prevalent challenges such as minimal regulation, education/training, and research in the TM practice (Vasconi & Owoahene-Acheampong, 2010; World Health Organization, 2002), particularly in low/middle income countries. For example, an inclusive health system as practiced in Ghana means that TM practitioners are recognised as healthcare providers and TM products are available in selected government hospitals (Agyei-Baffour et al., 2017). Therefore, both the TM and orthodox health practitioners are expected to collaborate and work within an environment of mutual trust and

respect (Vasconi & Owoahene-Acheampong, 2010). However, evidence depicts that the Ghanaian integrated health system is not as functional as expected (Gyasi et al., 2017).

The nature of the Ghanaian health system is such that the orthodox health system is well established and supported, while the traditional health system, although widely patronised, is less supported (Boateng et al., 2016). The orthodox health system receives government or political support and funding, and serves as the mainstream health system with developed infrastructures and human resources (Kretchy et al., 2016). TM was introduced into the orthodox health system through series of health interventions. These interventions include formulation of a TM policy in 2005, establishment of the TM council in 2010 to oversee the activities of TM practitioners, inauguration of TM into the tertiary educational system and the establishment of the Centre for Scientific Research into Plant Medicine in 1975 (Agyei-Baffour et al., 2017; Ampomah et al., 2020; Gyasi et al., 2017). Since 2012, TM units have been created in 17 health facilities across the country (Appiah et al., 2018).

All these attempts were made to standardise TM practice and promote its incorporation into the formal health system. However, the Ghanaian integrated system is non-functional due to weak cross-referral within the system (Gyasi et al., 2017), inadequate knowledge about the practice of integrated health among service users, absence of written document about integration (Boateng et al., 2016) and poor attitude of orthodox health practitioners towards TM usage (Ahenkan et al., 2019).

Some orthodox health practitioners in Ghana view the traditional health system as unscientific and dishonest; therefore, they refrain from referring service users to its practitioners (Ahenkan et al., 2019). It is reported that orthodox health practitioners often intimidate service users when they patronise TM before utilising orthodox health services (Gyasi et al., 2017). Evidence from the literature has also indicated that health service users in Ghana access both TM and orthodox treatments without informing orthodox health practitioners (Agyei-Baffour

et al., 2017). The clinical effect of such client-initiated integration might be unsafe (Fugh-Berman, 2000; Hsiao et al., 2006). Therefore, the practice of an integrated health system without strong contributions from orthodox health practitioners could result in poor delivery of health services, which could negatively affect the health of the population. Furthermore, a study has highlighted that the government of Ghana recognises the operations of only few TM-oriented institutions. That is, the Centre for Scientific into Plant Medicine (CSPM) and the TM department at Kwame Nkrumah University of Science and Technology (KNUST) (Gyasi et al., 2017). The activities of many TM practitioners are not recognised and/or regulated. Hence, the traditional health system is poorly governed. Based on the above discussions, the inclusive health system in Ghana is clearly not effective. The ineffectiveness of the health system might render the government's efforts to achieve an integrative system futile. An effective TM integration into the Ghanaian health system would not only boost the development of the traditional health system but also broaden the scope of health delivery in Ghana. To achieve this, a holistic approach to evaluating the nature of integration is required, including the exploration of the experiences and recommendations of orthodox health practitioners and hospital administrators regarding TM integration into the Ghanaian health system.

It has been reported that integration is achieved at three levels - the individual (patient/client level, health practitioners), institutional (health facilities) and societal (professional/regulatory level/health policy/system) levels. Integration at the individual level comprise the interaction between and among service users, orthodox medicine (OM), TM practitioners, while institutional integration is achieved at the health facilities level where hospital administrators also operate. Societal integration focuses on political will – health policy frameworks (Gyasi et al., 2017; Hsiao et al., 2006; Mignone, Bartlett, O'Neil, & Orchard, 2007; Vandebroek, 2013). The acceptance of TM integration by orthodox health practitioners and hospital administrators regardless of their place of operation is critical to the success of the

integration because they are key stakeholders in the health delivery system (Park & Canaway, 2019). A successful TM integration in Ghana at the local and national level would demand active collaboration between all stakeholders (Kwame, 2021). Ghanaians should be enlightened on the official integration of TM into the health system as well as monitor the operations of TM practitioners and products to ensure quality of healthcare.

Earlier integrated health studies conducted in Ghana (Boateng et al., 2016; Kretchy et al., 2016) targeted orthodox practitioners within urban settings (Accra and Kumasi metropolis), excluding those who practice in rural and remote areas. This emphasises the needs for more inclusive studies that explore the experiences of orthodox health practitioners in both urban and rural settings. Furthermore, previous integrated health research conducted in Ghana focused mainly on the interaction between the two health practitioners (TM and OM) and service users (Boateng et al., 2016; Gyasi et al., 2017; Kwame, 2021; Peprah, Agyemang-Duah, Arimiyaw, Morgan, & Nachibi, 2021). In this study, we extend the scope of integrative health researches to include the experiences and recommendations of hospital administrators since their managerial roles such as disseminating information, supporting change by encouraging employees to partake in implementing a health intervention and distribution of resources within health facilities (Kumah, Ankomah, & Antwi, 2016) could influence the success of TM integration.

The merits associated with the practice of an integrated health system could only be achieved when stakeholders in the health system including, orthodox health practitioners and hospital administrators, share common and coherent goals towards the practice of integrated healthcare (Hsiao et al., 2006). Therefore, this study explored the perceptions, experiences and recommendations of OM health practitioners and hospital administrators regarding TM integration into the Ghanaian health system using Park and Canaway's conceptual framework for integrating TM into national health systems (Park & Canaway, 2019). The adaption of a

conceptual framework in this study could help explain the relationship among the main concepts of integration as well as offer directions on how the Ghanaian integrated system might be enhanced.

4.2.1 Theoretical Framework

The conceptual framework for integrating TM into national health system was formed to explain the vital role TM plays in various health systems, which is crucial to the achievement of universal health coverage (Park & Canaway, 2019). The framework was employed in the study because it considers broader elements, which affect TM integration. Such elements include population/contextual characteristics, consumer experience, health architecture, health governance and financing, integrated healthcare delivery models and health system type (Park & Canaway, 2019), however, it was adapted where four of the components were utilised - population/contextual characteristics, consumer experience, health architecture, health governance and financing. These components were adapted because they relate directly to the study and the target population are qualified to answer issues relating to the adapted components. The framework explains that population/contextual characteristics of a country such as population structure, geographical setting, socio-cultural beliefs, historic use of TM and perceptions about care can either hinder or promote TM integration (Park & Canaway, 2019). For example, when a given population is familiar with TM and trust its use, then TM integration would be accepted.

Consumer experience describes the level of TM integration into the health system. The framework indicates that consumer experience is impacted by health accessibility or capability, the type of health practitioners' available, individual preferences and the fulfilment users derive from the health system (Park & Canaway, 2019). This means that an improved integrated health system connects service users to a team of traditional and orthodox health practitioners. This helps service users to experience integration and stability in accessing healthcare (Lin et al., 2015; Park & Canaway, 2019).

Health governance and financing element of the framework emphasises how political administration shapes health systems through policies and financing. For example, the inclusion of TM into national health cover as well as the enactment of TM policies could positively influence integration. Finally, health architecture explains the quality of healthcare delivery in a country. This includes the influence and involvement of healthcare practitioners in the integration process. The involvement of health practitioners reflects in their perceptions and knowledge about integration, exposure to TM practice and communication within the health system (Figure 1.2) (Park & Canaway, 2019). The framework has been previously employed to study the practice of integrated health in Asia and the Western Pacific (Park & Canaway, 2019). However, to the best of our understanding, it has not been used to investigate integrated health systems in sub–Saharan Africa, particularly Ghana.

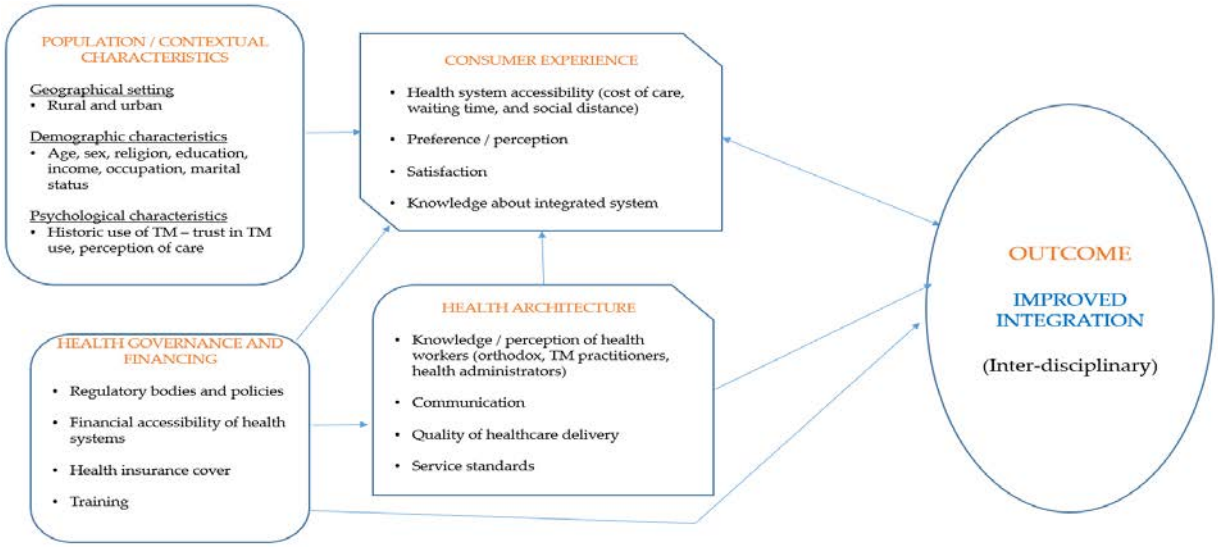

Figure1.2: Conceptual framework for integrating TM into health systems
Source: Adapted from Park and Canaway (2019).

This study is a component of a larger research that evaluated the enablers and barriers to TM integration into the formal health system of Ghana by investigating the experiences and recommendations of community members/service users, health practitioners and hospital administrators in the Ashanti region. This study focuses on two components of the framework: (1) Health governance and financing (2) Health architecture.

4.3 Materials and Methods

4.3.1 Ethics Approval

Ethics approval for the study was obtained from the James Cook University Human Ethics Committee; Australia (H8239) and the Ghana Health service Ethics Committee; Ministry of Health, Ghana (GHS-ERC003/05/20). All methods and procedures involved in the study were conducted in accordance with the Helsinki declaration on ethical principles in conducting human research.

4.3.2 Study Design

This study adopted a qualitative research method, which allowed the participants to freely express their lived experiences (Creswell, 2007) pertaining to TM integration in Ghana. The adoption of a qualitative approach facilitated maximal interaction between the researchers and the participants leading to emergence of a meaningful collaborative effect (Guba & Lincoln, 1994; Peprah et al., 2019). Qualitative research design was suitable for the study because it helped in establishing a combined description of the nature of experiences of the study participants relating to the phenomenon under study. This description comprises of 'what' participants experienced and 'how' they went through it (Creswell, 2007).

4.3.3 Study Setting

The study setting was the Ashanti region of Ghana. The region is located in the middle belt of Ghana with latitude 5^0 50'N and $7^0$30'N, longitude 0^0 15'W and $2^0$20'W (Ashiagbor, Ofori-Asenso, Forkuo, & Agyei-Frimpong, 2020). The region was chosen because it is the most populous region in Ghana encompassing every socio-economic, ethnic and cultural background in the country, and accounting for 19.4% of the total population (Ashiagbor et al., 2020; GSS, 2012). The Kumasi metropolis is the capital of the Ashanti region with three integrated health facilities and a TM training department at the KNUST (Agyei-Baffour et al., 2017; Gyasi et al., 2017), while Offinso North district represent the district with the least population size in the region, with no integrated health facilities. The Kumasi metropolis and Offinso North district

were selected as exact study sites with the intention of establishing rural-urban differences or similarities relating to the perceptions and experiences of study participants to the practice of integrated healthcare in Ghana (See Figure 1.4).

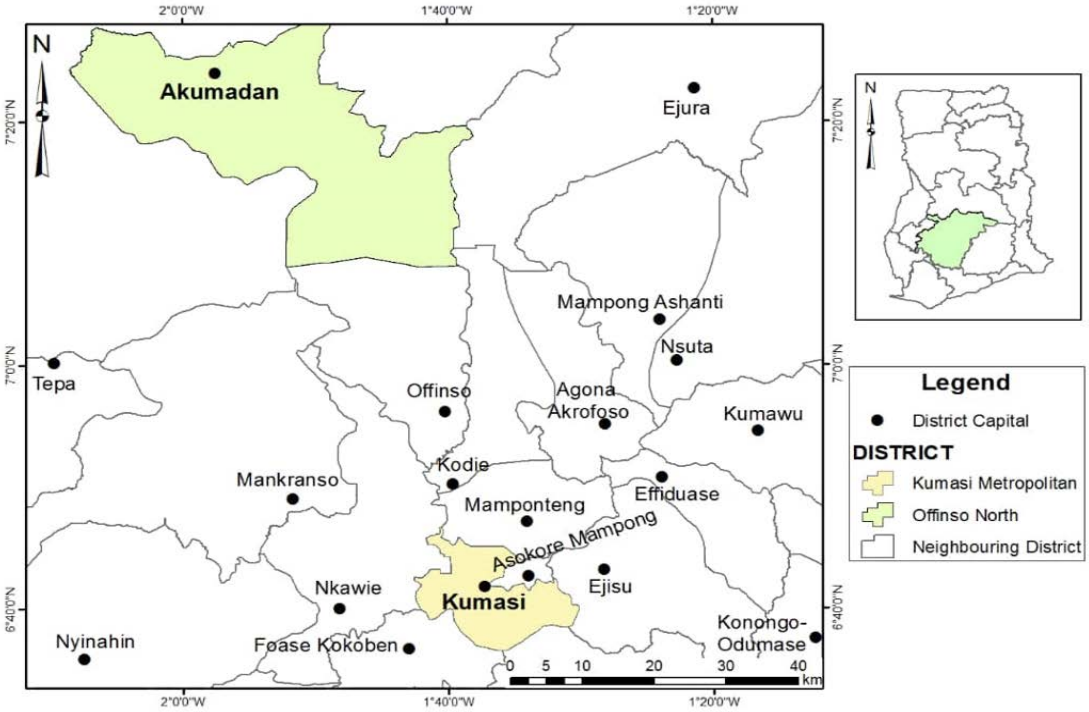

Figure 1.4: Map of Ashanti region showing the study sites (Kumasi metropolis and Offinso North district).

Source: GIS unit of Department of Geography and Regional Planning (2019)

4.3.4 Target Population and Recruitment Strategy

The study targeted orthodox health practitioners (Medical doctors (MD), Pharmacists (PM), Nurses (NS) and hospital administrators (HA) in the Kumasi metropolis and Offinso north district. These groups were targeted because they are stakeholders in the Ghanaian health system. Hospital administrators are responsible for implementing government policies/initiatives such as dissemination of health administration information, distribution of resources, encouraging employees to participate in the execution of health programmes at the health facility level (Kumah et al., 2016), while orthodox health practitioners also deliver healthcare services to users. The roles these stakeholders play in the health system make them

eligible to provide responses relating to health governance, financing and health architecture components of the framework. Hence, their perceptions and experiences would truly reflect the nature of integrated healthcare practiced in Ghana. Participants were recruited using purposive sampling technique. Purposive sampling used in the recruitment process offered the flexibility required to select eligible participants and maximise differences in the sample (Boateng et al., 2016).

4.3.5 Data Collection Period

The data collection period spanned from February to May 2021. Three research assistants (two males, one female) were trained in a 5 hours workshop and provided with interview guides to help with data collection. The training helped the research assistants to understand the objective of the study and aided adherence to the interview protocol.

4.3.6 Data Collection Procedure

Data were collected using in-depth interview procedure. This method was used because it offered the flexibility and privacy for the participants to air their views. The interviews were conducted in English at conducive places devoid of third-party intrusions. All the interviews were conducted in the offices of the study participants. The interviews lasted between 45 to 90 minutes and all interviews were audio recorded.

Both verbal and written informed consents were sought from participants before the commencement of each interview. Since TM use is prevalent in the study area, the issue of bias was neutralised by using a training manual to train and guide research assistants as to how the study questions should be asked. This helped in avoiding introduction of interviewers' personal preferences as far as TM integration is concerned. Additionally, the first author (IGA) was present at the first five interviews to ensure exactitude and uniformity in the interview process. However, no interaction transpired between IGA and the participants.

The research assistants are conversant with qualitative research approaches. Therefore, the interviews were conducted according to acceptable standards in qualitative research.

Assistants were stationed at the study area at the time of the research. Research assistants also prepared field notes by noting their observations and interactions with participants.

At the beginning of the interview, participants were asked to provide demographic details (sex, age, years of practice and specialty) about themselves. Semi-structured interview questions were used to explore participants' views about TM integration into the formal health system. Interview questions were developed based on the framework for integrating TM into national health systems and included questions such as perceptions about the health systems, knowledge about TM integration, communication within the health system, merits of integration, barriers to integration and measures to promote proper integration among others. Prompts and probes were developed concerning the interview topics, when necessary, to kindle further responses from the participants. Data saturation was reached at the 20th interview, after which two more interviews were conducted, totalling 22 interviews.

Saturation occurred at the 20th interview because the additional data gathered did not have unique properties to form a new category (Guest et al., 2006). Numbers were assigned to participants to aid anonymity. The data collection instrument was pilot tested before actual data collection commenced. Pilot testing was conducted to ensure that the interview questions were well defined and delivered in a consistent way to avert ambiguity. Reiteration of the interview sessions was not required; however, elucidations were obtained from some of the participants after the data collection period.

4.3.7 Data Analysis

A professional transcriber transcribed all the 22 interviews, and IGA read the transcripts thoroughly. The transcribed data were analysed using NVivo version 12 software, and framework analysis was the analytic approach employed to identify the perceptions and experiences of the participants in relation to TM integration into the Ghanaian health system. This approach involves five stages of analysis where both inductive and deductive methods were applied.

The steps involved in the framework analysis are familiarisation; identification of thematic frameworks; indexing; charting and mapping and interpretation (Appiah et al., 2018; Srivastava & Thomson, 2009). With the familiarisation stage, IGA read the transcripts and made notes on the major issues. Thematic frameworks (discovery of key concepts in the data) were developed based on the notes made during the familiarisation stage where the main ideas expressed by study participants were discovered inductively. Indexing was the third stage, where portions of the data were marked as belonging to specific themes or concepts. This stage was also conducted using the inductive approach; hence, the themes emerged freely. The portions of the marked data were arranged in charts corresponding to the identified themes. Finally, mapping and interpretation were conducted by arranging the charted information to illustrate the participants' knowledge about TM integration as well as their experiences regarding the practice of integrated healthcare in Ghana. At the mapping and interpretation stage, a deductive approach was used by grouping the themes under the main tenets of the framework for integrating TM into national health systems.

Preliminary coding and generation of themes were conducted independently by IGA and BSMA to promote trustworthiness of the results. Crosschecked data had a 90% degree of uniformity and differences were resolved through deliberations and mutual agreement at a consensus meeting. Three authors (AAS, AEOMA and TIE) reviewed the themes and quotations to increase the trustworthiness or credibility of the results. Themes have been presented along with representative quotes affixed with study participants' characteristics (For example, Participant 1, MD, Offinso North). The COREQ checklist (Tong et al., 2007) for reporting qualitative studies was employed in this study (See Supplementary file 1, COREQ Checklist).

4.4 Results

4.4.1 Characteristics of Participants

There were 22 participants in the study, 16 of whom were orthodox health practitioners (7 Medical Doctors, 7 Pharmacists, and 2 Nurses) and six hospital administrators. Twelve participants were from the Kumasi metropolis, while 10 were from the Offinso North district, and most (17) of the participants were males. The ages of the participants were between 24 to 49 years. Thirteen of the participants belonged to the Akan ethnic group, while the rest were from the Mole-Dagbani (7), and Ga-Adangbe (2) ethnic groups. In terms of years of experience, this ranged from 1 year to 19 years of practice.

4.4.2 Themes

Nine themes emerged from the data. These themes have been mapped under the two components of the conceptual framework. Health governance and financing (regulatory bodies and policies, financial accessibility of health systems, national health insurance cover and training) and health architecture (knowledge about TM integration, perceptions about TM and orthodox health system, communication, quality of healthcare delivery, service standards).

4.4.2.1 Regulatory Bodies and Policies: Regardless of professional background, participants were aware of the existence of a TM policy/Act, the Food and Drug Authority (FDA) as a regulatory body, and performance of the regulatory bodies. Participant stated that a law had been passed that led to the creation of the TM Act, which spells out how TM should be practiced in Ghana. They also understood the role of the FDA and indicated that the FDA is a body, which supports and regulates TM practice in Ghana because it is tasked with evaluating and certifying the safety of TM products before the products are released into the Ghanaian market for sale. However, the participants were not pleased with the manner in which the regulatory bodies executed their duties. Most of the participants felt that the regulatory bodies were performing abysmally and based their assessment on the presence of uncertified or unlicensed TM products in the health system as well as poor monitoring and evaluation of activities of private TM practitioners.

"I know there is a law that has set up the TM Act; it captures all issues relating to TM practice in Ghana" [Participant 4, PM, Offinso North].
"…after production, the FDA will come and check the procedures used and once the practitioner is done, they will test the safety of the medicine before they accept it and release it onto the market for sale" [Participant 1, PM, Offinso North]

"From where I sit, I do not think they are doing much. As a facility, the regional health team comes to do monitoring and evaluation. When you look at those in the private practice, I think most of them do not have the license to practice and I am not aware of the council going to monitor their practice [Participant 2, HA, Kumasi]

4.4.2.2 Financial Accessibility of Health Systems: The participants voiced that the informal delivery of traditional health products, particularly by community-based practitioners, tend to be inexpensive. However, they explained that TM products offered within official or recognised settings such as licensed chemical/pharmacy shops and clinics are expensive. An example was cited that malaria treatments offered at formalised TM healthcare settings were costly than orthodox malaria medications. Hospital administrators also clarified that the high prices of TM products is a key challenge hindering TM integration in Ghana. They explained that clients who patronised TM at formal health settings such as TM clinics (both private and integrated facilities) pay out of pockets, which to them, is a barrier to the full patronage of integrated healthcare services because most of the service users are economically challenged.

"Those TM that are in pharmacies and licensed chemical shops or clinics are expensive. TM treatments for malaria from these avenues are more costly compared to orthodox malaria treatment" [Participant 1, NS, Offinso North]

"Comparatively, the TM clinic that my relative attends; it appears that the cost is higher compared to the orthodox clinics. The medications that she received there for two weeks cost about ghc1,200 which is on the high side if you compared to the orthodox medicine where the medications given were not expensive, not even up to ghc300" [Participant 2, HA, Kumasi]

"When people come for TM services/products, except for the folder, they pay for everything including the TM products. These products are expensive. So clients paying out of pocket is challenging because most of these people come here without holding even 10ghc or 20ghc. They (clients) are unable to afford the TM at the TM unit hence accounting for low patronage" [Participant 6, HA, Kumasi]

4.4.2.3 Health insurance cover: Study participants considered health insurance as a key strategy in financing health policies. Participants irrespective of their profession or place of operation admitted that the National Health Insurance Scheme (NHIS) is high in the Ashanti region with most subscribers being poor or economically disadvantaged. Although the NHIS is high, participants stressed that it covers only the mainstream or orthodox health system and contributions from the scheme form a considerable proportion of health facilities' internally generated funds (IGF). Since premiums from the health insurance contribute greatly to the IGF of health facilities, the inclusion of TM products in the NHIS could serve dual purpose by positively influencing the finances of public health facilities as well as aid health accessibility among users, particularly the poor.

> *"The health insurance coverage is high, a lot of people are having the cards but the insurance covers only the cost of orthodox treatments and drugs"* [Participant 5, MD, Offinso North]

> *"It is very high. In terms of percentage, it will be like 70% because when you come in here to our hospital, about 90% of our IGF is from the health insurance. The insurance includes only the mainstream health services"* [Participant 6, HA, Kumasi]

4.4.2.4 Training: Participants deemed professional training of TM practitioners an important issue in the integration discourse. They were concerned that TM practitioners did not have formal education and professional training and stated that most TM practitioners acquired knowledge on the practice through informal means as they learnt the profession from their fathers or grandfathers. This according to participants has contributed to orthodox medical doctors not regarding the TM practice as authentic. All the participants believed that medical doctors' opposition to the traditional health system stemmed from their unfamiliarity with traditional health therapies, making it difficult for them to work with TM practitioners. The medical doctors explained that their non-exposure to TM is creating a barrier to effective integration. They indicated their understanding of how orthodox malarial medications work but felt the same could not be said of the traditional means of treating malaria.

> *"Some TM practitioners are not well educated. They will say they inherited the skill from their fathers or grandfathers. Their level of formal training is not too encouraging. So why wont the doctors look down on TM practice"* [Participant 1, NS, Offinso North]

> *"When it comes to the TM, the training is low, people are calling themselves doctors and pharmacists but you do not know where they acquired their knowledge. They just spend some time with their grandparents and they call themselves doctors. So, there is no certificate!"* [Participant 1, HA, Kumasi]

> *"I know how an anti-malarial works but I do not know how the traditional anti-malarial works. I have never been exposed to it but you want me to accept it; I will never accept it and work with them. That is the barrier we are having"* [Participant 3, MD, Offinso North]

4.4.2.5 Knowledge about TM integration: This theme addressed the knowledge level of study participants. Generally, most of the participants regardless of profession or places of operation were familiar with some of the interventions implemented to promote TM integration into the formal health system. Participants demonstrated their familiarity with the creation of a TM Department at the Kwame Nkrumah University of Science and Technology (KNUST) and the presence of integrated health facilities in the region. For example, hospital administrators felt that the creation of the TM Department at KNUST serves as a means of training people to be experts in traditional therapies. Similarly, medical doctors and pharmacists explained that the TM Department is under the Faculty of Pharmacy and conducts research into TM with the sole purpose of making the traditional health system an apposite one.

> *"There is a TM department at KNUST and it is a four-year program. I know the program is still going on. It is under the Faculty of Pharmacy"* [Participant 4, PM, Offinso North]

> *"At KNUST, there is a department for TM. They train people to become experts in the TM area"* [Participant 5, HA, Offinso North]

> *"At KNUST, there is a department for TM. They are into researching TM and how it can serve as an appropriate healthcare. I know they are under the Faculty of Pharmacy"* [Participant 2, MD, Kumasi]

Most integrated health facilities in the Ashanti region are located in the Kumasi metropolis, yet, participants irrespective of location of their affiliated health facilities, knew

about the existence of such facilities in the region. They believed that the creation of TM departments at public health facilities was an initiative from the Ghana Health service. Participants attributed their sources of information to both formal and informal channels. As pharmacists received information through formal means such as the circulation of a memo stating the creation of TM unit in the facility, medical doctors and nurses learnt about integration through informal interaction with colleagues. However, hospital administrators became aware of integrated facilities because they work in such facilities. Study participants affirmed that the Kumasi South, Tafo government and Suntreso government hospitals are the public health facilities with TM departments in the metropolis. They explained that the TM departments are part of the hospital with a separate reporting system. However, all activities at the department are managed and supervised by the facility's medical director.

> *"Tafo government hospital and I think Kumasi South hospital have this system. I mean the integrated system. I think it is something that the Ghana Health Service is trying to bring on board. I got to know about the integration through my interactions with colleagues"* [Participant 7, MD, Kumasi]

> *"I know of three facilities that operate this integrated system: Suntreso government hospital, Tafo government hospital and Kumasi South hospital. They sent a circular or memo around that from this day; they are bringing TM practitioners so that they would practice in the hospital/facility"* [Participant 3, PM, Kumasi]

> *"I know that they have started in some hospitals but not all health facilities. I think the integrated facilities in the region are three. I cannot really remember the source of the information; maybe it was through a conversation"* [Participant 1, NS, Offinso North]

> *"The TM unit is part of the hospital; it is part of the units in the hospital. They have their reporting system and at the end of the day, everything gets to the medical director. So, as an administrator I know that there is a structured TM clinic in this facility, therefore we are one of the facilities that deliver integrated services in the region. I became familiar with integrated facilities because I happen to work here"* [Participant 1, HA, Kumasi]

4.4.2.6 Perceptions about traditional and orthodox health systems: In discussing their perceptions of the health systems, the participants described TM as the oldest form of healthcare in Ghana. They believed that TM existed before the advent of colonialism and was

effective in treating ailments because the users were getting positive results. Some of the participants concluded that most Ghanaians would seek TM first when the need arises because of their familiarity with the traditional health system. This assertion was popular among participants in the rural setting. Hospital administrators on the other hand were of the view that TM are associated with minimal side effects. According to them, orthodox medicines are synthetic or unnatural; however, the human body tends to be more responsive to TM because it elicits a similar response to food that is consumed.

> *"In the past, before the coming of the Whites (Westerners), our ancestors were using these TM and they were getting the results. So TM has been with Ghanaians for a long time. That is the oldest form of care in Ghana"* [Participant 3, MD, Offinso North]

> *"That has been our way of treating illnesses. The typical Ghanaian or African will not seek modern healthcare if they have an issue. They will try what they know first, that is the traditional therapies. When I was a child, I was asked to take the TM called 'Acheampong'. So, it has been part of us for a long time"* [Participant 5, PM, Offinso North]

> *"I can even say that most of them (TM) come with little or no side effects because they are like the foods that we eat. We all know paracetamol has side effects and so do other orthodox medicines. If you do not read the instructions carefully and you take the medicine, then you would feel dizzy. However, when it comes to the TM, although some of them come with little side effects, most of them do not have side effects"* [Participant 1, HA, Kumasi]

One of the strengths of the orthodox health system as mentioned by study participants is that the system is evidence-based and supported by science or research. Participants elucidated that orthodox related health activities and treatments could be explained scientifically, and their practitioners act in line with laid down principles in the practice. However, they felt that the same could not be said of the traditional health system. An example was stated that healthcare activities such as conducting laboratory test are not considered in traditional healthcare delivery.

> *"So, the orthodox system comprise of activities that are supported by science. I cannot do whatever I like because I am a medical doctor. My actions should be science-based. But with the traditional way of treating diseases, laboratory tests are not taken into*

consideration before certain medications are given to the person who is accessing the care" [Participant 7, MD, Kumasi]

In addition to the strengths of the two health systems, participants identified opportunities for TM integration. They perceived the availability of medical plants and already existing market for TM as opportunities for promoting TM integration into the Ghanaian health system. Medical doctors declared that Ghanaians' familiarity with the traditional health system could influence the integrated health system because it is a positive reinforcement. Pharmacists and nurses also considered the availability of medicinal plants as an advantage to integration. They explained that the availability of medicinal plants has the potential of sustaining the integration through constant supply of raw materials for the production of TM products.

"See, TM is already in existent in our system so people already know of it. So, there is ready market, which is somewhat good for the integration because it will not be new to people" [Participant 5, MD, Offinso North].

"The availability of medicinal plants is an opportunity to boost integration. We do not have to export materials to sustain the TM field. Medicinal plants are already there. We making use of such plants and other things in our ecosystem is a great opportunity for integration" [Participant 4, PM, Offinso North].

"These medicinal plants are all around us. Just look at even our health facility here, there are many plants around us. Most of them are medicines including the Nim tree so we cannot run out of raw materials for TM products, which to me could sustain the integrated system" [Participant 1, NS, Offinso North].

4.4.2.7 Communication: Participants were displeased with the nature of communication within the Ghanaian health system. They narrated that service users seldom shared information on TM use with orthodox health practitioners. Medical doctors and pharmacists believed that the reason for the non-disclosure of TM use by service users is to prevent being judged by the practitioners or the perception that orthodox health practitioners frown at TM usage. Contrarily, nurses believed that service users would only disclose their use of TM upon further probing, especially at the time of taking their medical history. The orthodox health practitioners, particularly, the medical doctors, felt that they do not offer service users

enough health education regarding how, where and when to seek healthcare. This they believe put service users in a situation where they resort to all forms of treatments when the need arises.

> *"Patients hardly tell us their use of TM. I do not know whether it is because patients have the notion that, generally health workers at the hospital frown on TM usage"* [Participant 2, MD, Kumasi].

> *"You have to ask the client's past medical history. If the patient has taken or applied any TM, they will tell you. So, you have to ask them and they will tell you* [Participant 1, NS, Offinso North].

> *"…sometimes I feel like we the medical doctors are to be blamed in a way. The part that we do not do well is that we do not offer people enough information on what and when to do what and that is what the patients want. So, we sort of put them (patients) in a state where they have to find other means of care"* [Participant 6, MD, Kumasi].

Most of the participants agreed that the key to delivering appropriate healthcare services to users is through timely referrals. However, orthodox health practitioners admitted that they do not refer service users to TM practitioners. It emerged from the interviews that TM practitioners usually delayed in referring service users to orthodox health practitioners and such referrals were unofficial, mostly by word of mouth. They further clarified that the delay in referring service users to the hospitals usually leads to deterioration of the health conditions of the clients.

> *"I have not referred any of my patients to seek care from any TM practitioner. I have not done that before. What I have realised is that, TM practitioners do not refer cases on time. They delay until the patient's condition has deteriorated before they refer and they do that just by word of mouth"* [Participant 5, MD, Offinso North].

In terms of publicity, hospital administrators recounted that integrated health facilities were publicised through health education programmes using the media, particularly the radio, as a channel for information dissemination. The key messages delivered during such health programmes include the creation of TM unit in public health facilities and education on the entire TM integration process. Even though hospital administrators narrated the means through which TM integration is publicised in the region, participants felt that publicity about TM integration was not adequate; hence deeming it a challenge to the integration process.

According to participants, people cannot access a non-existent service. Hospital administrators openly admitted that institutions including those that offer integrated healthcare services have not done enough to publicise the official integration of TM into the Ghanaian health system because of the absence of directional signs for the integration.

> *"We buy airtime and go to the radio station to talk about the integration. So we talk about the creation of TM unit in our facility"* [Participant 1, HA, Kumasi].
> *"I only got to know about the integrated system because of the TM department within the hospital. Aside that, I have not heard of the integration of TM from any other place, which I think is a problem. How do you practice something you do not know? How can people also access a service that they do not know it exist?"* [Participant 4, MD, Kumasi].
>
> *"As for the publicity, I think it is one of the challenges. Most people do not even know that when they come to the facility, they can have access to TM, except for the clients that are already aware. In this hospital and the others, we have not done enough to publicise the integration. I am the administrator and I know that we do not have directional signs. The publicity is not there"* [Participant 4, HA, Kumasi].

4.4.2.8 Quality of healthcare delivery: Some participants reported that the orthodox health system is founded on laid down scientific principles and procedures such as triaging and medical examinations. They stated that conducting such health activities improve the quality of healthcare delivered to service users, which in most cases leads to the identification of the root causes of illnesses. Other participants also narrated that the procedural nature of the orthodox health system aid in the identification of gaps in the healthcare delivering chain, since decisions regarding the type of healthcare a client needs do not rest on one health practitioners but on a range of other orthodox health practitioners.

> *"Before a medical officer will get to you, there is something we do called triaging. We try to assess your medical situation and condition to get to the bottom of things. So, we ask couple of questions, do physical examinations and if necessary conduct laboratory tests to get to the root of ailments. We do all these things with the aim of delivery quality healthcare to the patient"* [Participant 7, MD, Kumasi].
>
> *"…mostly I call the doctors and tell them that I have realised that they are prescribing something to patients but I think it should be this or that. I am able to do that because of some commonalities in the practice. For example, there was a pregnant woman who*

came from a facility, different from ours. They had prescribed 'ergometry'. If a pregnant woman takes that drug, then it is likely to cause an abortion. So, sometimes, it is not that the doctor does not know what he/she is doing but there might have been a slip of hand where the mind is going faster than the hand. So, I went to the facility and told the doctor that with all due respect, I saw 'ergometry' but I think it is 'ergotamine', and so he should confirm, so that the patient will come back and he did. You see! At the end, the patient received the best of care. We usually get favourable results where both the doctors and patients will come back to say thank you" [Participant 2, PM, Kumasi].

Considering the delivery of integrated healthcare service in the region and Ghana as a whole, all participants mentioned that TM integration has led to availability of options in healthcare services. They believed that TM integration into the formal health system has been beneficial because it makes TM services and products available to service users at approved health facilities, hence, increasing the number or range of medications at accredited health facilities for people to choose from. Hospital administrators commented that TM integration has led to the production and delivery of safe TM products and services. To administrators, approved TM undergo strict scientific scrutiny or evaluation at research centres, therefore guaranteeing the safety of such products. They believed that TM integration has paved a way for a gradual disengagement from counterfeit TM products. They further explained that people who patronise TM services at integrated health facilities go through acceptable and standard ways of healthcare delivery. Hence, the availability of TM departments at the hospitals has led to the delivery of safe health services associated with the TM practice. Interestingly, medical doctors also felt that the inclusion of TM in the formal health system is a strategy for the preservation of indigenous medicines.

"The patients who patronise services in this facility are open to make a choice whether they want the TM or orthodox medicine. So, there are options for them to choose from. Patients have access to alternative healthcare" [Participant 3, PM, Kumasi].

"Before a TM product is accepted within the integrated system, it goes through some tests and research. It passes through the research centre at Mampong to meet all the standards for the FDA to give approval, so gradually we are separating the good TM from the fake ones" [Participant 1, HA, Kumasi].

> *"Because it is at the hospital, it helps to promote the safety of TM services. At the end of the day, we do not just give TM anyhow. It is according to acceptable standards in healthcare. When a patient comes to the hospital, he/she will go for the folder and go through all the normal things/triaging before he/she sees the TM doctor"* [Participant 6, HA, Kumasi].

> *"In fact, the integration is a way of maintaining our indigenous medicines. It is serving as a way to come back to our traditions and culture"* [Participant 5, MD, Offinso North].

Participants emphasised that integration has led to boosting of database on health accessibility. They explained that the practice of integrated healthcare has created an avenue for data gathering on health accessibility, especially on service users that patronise TM. They felt that through triaging at Out Patients Departments (OPDs), data on TM users are collected, that help to track and know the category of people who usually use TM products / services.

> *"When a client comes here for TM, he/she goes through the normal health checks at the Out Patient Department for them to check the vitals, weight and pressure. That way, we are able to collect information on people who access TM services, which is improving database on health accessibility"* [Participants 6, HA, Kumasi].

Despite the positive impact of TM integration on health delivery, orthodox health practitioners and hospital administrators felt that the claim of a particular TM treating a host of diseases is problematic. Pharmacists described this action of TM practitioners as being dangerous to the medical field. To medical doctors, the claims made by TM practitioners about their products put them in a state of confusion and reduces their desire to work with them. Similarly, hospital administrators also added that the claim of one TM treating a number of diseases has discredited the TM system and concluded that once trust has diminished, active collaboration between the two health practitioners becomes challenging.

> *"Some people will come and they have hypertension and another person coming with erectile dysfunction. Yet, they will present one TM that can treat all these problems. I think about it and I ask myself how this is possible? So I do not trust those claims; hence do not have the desire to work with them (TM practitioners)"* [Participant 6, MD, Kumasi].
>
> *"TM people at times make many claims about TM. They make so many claims that one TM can cure multiple diseases…. You see! These claims are dangerous to the practice of medicine"* [Participant 5, PM, Offinso North].

> *"You will see so many TM practitioners around claiming that one medicine can cure almost everything. So, you wonder if that is truly so. So, it affects how other health practitioners trust the TM system, and if trust is diminished, it affects collaboration"* [Participant 4, HA, Kumasi].

4.4.2.9 Service standards: The participants were of the view that TM products were poorly processed and their certifications were not up to the expected standard. As orthodox health practitioners were more concerned about certification and standardisation of TM products, hospital administrators were mainly displeased with the unhygienic conditions in which some TM products were prepared. Medical doctors and pharmacists perceived poor certification or standardisation of TM products as a challenge to integration because they viewed proper certifications as a requirement to making informed decisions on healthcare delivery.

> *"The challenge I have with TM is the quantification of their doses, and probably the hygienic state of its preparation. In addition, they (TM practitioners) do not normally state the side effects of the TM; neither do they provide an antidote to overdose. So, in the case of overdose, what do you do? You do not get answers to these questions. So how do you work with people in a field that they do not give you enough information to work with?"* [Participant 1, MD, Offinso North].

> *"The problem I have as a pharmacist is its (TM) standardisation. How do I know that this is the dosage? Sometimes, they will tell you to use a cup to measure and drink, which is not right"* [Participant 4, PM, Offinso North].

> *"Sometimes, the way it is prepared, the environment, the tidiness and all those things make it non-standardised"* [Participant 3, HA, Offinso North].

When deliberating on the conditions needed for effective implementation of the integration, pharmacists felt that there was no document or protocol that described into details the dynamics or scope of the integration. Participants viewed the absence of such a protocol as a flaw in the implementation process, hence making TM integration in Ghana being far from perfect. They reported that the intervention was imaginary and attributed their assertion to the absence of a documented protocol detailing when and how cross referrals should be conducted and/or how TM practitioners should be integrated into the progression and salary structure

within the Ghanaian health system. Participants felt that the absence of a written protocol has created laxity in the system where everyone does what he or she perceives to be right. Pharmacists in the urban study setting mainly raised this concern.

> *"There is lack of protocol for integration. We know that there is integration but when do I refer patients. We should know that you have to refer a patient when the temperature is above this or that. The TM practitioners should know that they have to refer if their (clients) are having this or that symptoms. How do we know when to refer to a TM practitioner or a medical doctor? The absence of such a protocol makes interaction in the system problematic. Everyone is doing his/her own thing"* [Participant 2, PM, Kumasi].

> "*The issue is that, how do we integrate them into the salary structure and all that? So, fair wages and salaries commission would have to look at the progression for TM practitioners. The absence of a document spelling out all these dynamics make the integration far from perfect. It is as if institutions are acting per their understanding, which is a big hindrance to integration*" [Participant 4, PM, Offinso North].

4.4.3 Recommendations made by participants to enhance TM integration into the Ghanaian health system

Based on the above observations, participants proposed four recommendations to stakeholders including legislation on how to promote effective integration of TM into the Ghanaian formal health system. These recommendations include stringent and well implemented TM regulatory system, a comprehensive health insurance scheme, training on TM and improved communication strategy. Figure 4.1 sums up the recommendations from study participants.

Figure 4.1: Participants' recommendations to enhance TM integration into the Ghanaian health system

4.4.3.1 Stringent and well implemented TM regulatory system: All participants stressed that proper implementation of TM regulatory rules by the appropriate regulatory bodies is required to enhance TM practice and consequently promote its integration into the formal health system. Participants were knowledgeable about the existence of regulatory bodies; however, they were not satisfied with their performance. They proposed that the regulatory bodies particularly the FDA could be more decentralised in their operations by establishing sub offices across the country in order to improve monitoring of TM practice and market surveillance.

> *"The FDA can have sub associations that can monitor some of these things. I think the law enforcement agencies too can also help. Once a while, the FDA can send people to the pharmacy stores to check if the board has accepted those drugs"* [Participant 2, MD, Kumasi].

> *"I think more stringent measures should be placed on TM preparation. It always comes out that the FDA has approved it. Yet, occasionally, you will see that the FDA will ban certain products. Even with the products that the FDA says have been banned, you will still find them on the market. This do not make people take its integration seriously. So, the post-market surveillance should be more. It will put the TM practitioners on their toes and they will not just release anything on the market. Once there is sanity in the TM system, people will endorse the integration"* [Participant 2, PM, Kumasi].

In addition, some of the participants suggested that TM practitioners should state important health information such as expiry dates, dosage, storage of TM products and therapeutic effects of TM products. They believed that the availability of such information would ensure users' safety and improve the integration process. Medical doctors added that the provision of such information would make health practitioners aware of the diseases TM products can treat and they would accept its integration.

> *"For every product, there is the grand ml, the manufacturing date, expiry date, and how you will take it, the storage and those things. Therefore, when these things are clearly labelled on TM containers, then it will ensure that the user do not go beyond or below the dosage and it will improve TM practice and its integration"* [Participant 1, PM, Offinso North].

> *"…it is very critical to label TM with the expiry date. When practitioners do that, they boost the public's confidence in taking TM products and it can fit well in the formal health system"* [Participant 7, MD, Kumasi].

> *"We should know the specific ingredients a TM product contains and the specific therapeutic effect it can address rather than being all over the place. When therapeutic effect is known then we will know, the specific disease conditions it will treat and its integration will be welcomed"* [Participant 4, MD, Kumasi].

4.4.3.2 Comprehensive health insurance: Participants recommended that government should expand the national health insurance to include TM products and their justification for a more comprehensive health insurance scheme was to increase patronage of approved TM products. They further explicated that incorporating TM in education and research would expose health practitioners to the scope and dynamics in both traditional and orthodox health systems.

> *"It is like the hospital; when a pregnant woman comes to the hospital, I will take her to the maternity unit, which is not the hospital. We have different wings but we are all working in concert to achieve a common goal for our clients. So, if you have two different systems, then merging them in all spheres, be it education, research and service delivery would be great. So, I think integrative approach is the best because both practitioners would be exposed to the two systems"* [Participant 3, MD, Offinso North].

> *"TM inclusion in the NHIS will help! I told you that some of the TM are costly. I am referring to the approved ones at pharmacies and clinics. So, if the insurance can cater for that, then it will be good. It will enable people to patronise the approved TM products"* [Participant 1, NS, Offinso North].

4.4.3.3 Training on TM: One important suggestion made by the participants is that the government should include TM in the medical school curriculum. Participants believed that the inclusion of TM in medical school curriculum would help orthodox health practitioners to familiarise themselves with issues relating to the TM field. Closely related to TM inclusion in medical school curriculum is increase in TM departments. Hospital administrators indicated that it is necessary for policy makers to expand the institutional base of TM by creating TM departments in all universities in Ghana, so that the number of TM departments or schools would increase. Moreover, some of the participants concluded that for integration to work

effectively there is the need for TM practitioners to receive professional training. Professional training of TM practitioners was seen as a means to expand the human resource in the field of TM and lead to the availability of such practitioners in various health facilities.

> *"For integration to work, then they need to include the TM in our medical school curriculum. That way, I can appreciate what that field of medicine is about and working with TM practitioners would not be a problem"* [Participant 4, MD, Kumasi].

> *"It will be great to establish TM departments in all universities in Ghana. We have many people who want to go to the university so, if we increase the number of TM departments, we will get more professionals in the field of TM, and the system will be improved"* [Participant 5, HA, Offinso North].

> *"There is also the need to increase the human resource. We need to train more people in TM so that we will have more qualified TM practitioners to practice in the various hospitals"* [Participant 7, PM, Kumasi].

4.4.3.4 Improved communication strategy: Given that the nature of communication in the health system was not encouraging, participants recommended that the government must develop a communication strategy to improve sensitisation of the public about TM integration into the formal health system. They stated that both audio and audio-visual means of communication could be used for the circulation of the information. Participants believed that publicly explaining and promoting TM integration could make people understand the practice of integrated healthcare and make informed decisions by determining the kind of health service they want.

> *"There should be more education through the media; especially radio and television to sensitise the people about the integration. So that people will come to understand that, there is an established health system where users can decide the type of healthcare they want"* [Participant 1, HA, Kumasi].

> *"We need to increase publicity about the integration of the two health systems. There is no point for the integration if it only exist on paper. We can sensitise health users and practitioners about the system through community radio stations and even television stations"* [Participant 2, NS, Offinso North].

4.5 Discussion

This study explored the experiences and recommendations of orthodox health practitioners and hospital administrators on the practice of integrated healthcare in Ghana

within the Kumasi metropolis and Offinso North district. One key contribution of the study to existing literature is the participants' recommendation for improved TM integration in Ghana. The health governance, financing, and health architecture sections of the framework for integrating TM into national health systems (Park & Canaway, 2019) served as the theoretical basis for the study.

Regarding the Ghanaian health governance and financing structure, study participants acknowledged the existence of the TM regulatory bodies and Act, but were not satisfied with the implementation of the policies governing TM practice in Ghana. This finding confirms the results of other Ghanaian studies (Ahenkan et al., 2019; Buor, 2004; Gyasi et al., 2017) where inefficient implementation of TM policies and regulations were identified as some of the factors hindering the practice of integrated healthcare in Ghana. The ineffective implementation of TM policies as well as unsatisfactory performance of TM regulatory bodies could be an obstruction to TM integration into the Ghanaian health system. This is because well implemented regulations by specialist bodies are identified as a pre-condition for effectively integrating TM into national health systems (Park & Canaway, 2019).

It is reported that financial accessibility promotes equity in accessing healthcare (Park & Canaway, 2019). The popular notion that TM is affordable (Kale, 1995; World Health Organization, 2002) is debateable in this study. The current study has indicated that the cost of TM products and services is reliant on the nature of practice. Thus, TM products offered within formal health settings tend to be expensive, whereas community-based TM products were considered cheaper. This result is in line with the work of Ahlberg (2017), which reported that that some TM products are more expensive than orthodox healthcare, yet, service users patronised them because such product/services tended to satisfy their healthcare needs (Ahlberg, 2017). The basic goal for integrating TM into formal health systems is to expand the scope and access to health services (Park & Canaway, 2019; World Health Organization, 1978)

among populations. The affordability of community-based TM products might promote the attainment of this goal; however, it could expose users to health complications due to safety issues. On the other hand, the expensive nature of approved TM products might thwart the success of TM integration since users would pay out of pocket.

Directly related to financial accessibility of TM is the nature of NHIS coverage in Ghana. Participants noted that NHIS subscription is high with most subscribers being economically challenged. It was reported that the scheme covers only the orthodox health system. Clearly, TM integration was not considered to fit into the key national healthcare financing scheme. In Ghana the NHIS has positively influenced health service utilisation among the populace (Appiah et al., 2018; Blanchet, Fink, & Osei-Akoto, 2012; Dixon, Tenkorang, Luginaah, Kuuire, & Boateng, 2014; Singh et al., 2015) because service users do not pay for medicines on the NHIS drug list. This evidently shows that the inclusion of TM in national health cover remains a sure way of properly integrating TM into formal health systems (Park & Canaway, 2019). China and Korea with effective integrated health systems have included TM in their national insurance cover, thereby leading to a reduction in out of pocket refund for TM products and services (Park & Canaway, 2019; World Health Organization, 2017). Possibly, the exclusion of TM products from the Ghanaian NHIS might have contributed to the inefficient state of the country's integrated health system since service users have to pay for TM products out of pocket.

A common concern raised by the study participants is the low level of professional or formal training among TM practitioners. Orthodox health practitioners and hospital administrators were concerned about TM practice because of the presumed inadequate professional training and knowledge among TM practitioners. Participants reported that most practitioners in the TM field acquired their knowledge informally from generation to generation. This observation is consistent with earlier studies in Africa (Buor, 2004; Gyasi et

al., 2017; Meissner, 2004; Wreford, 2005) that orthodox health practitioners disregard TM practice due to the low level of medical education among its practitioners. The presumed inadequate level of professional or formal education among TM practitioners could be an obstacle to effective integration of TM into the Ghanaian health system. Well-trained TM practitioners as well as sound educational systems on TM are needed to develop a firm and efficient integrated system (Park & Canaway, 2019). Therefore, the government of Ghana could expand TM training institutions to promote robustness in TM regulations and training.

It seems that the practice of inclusive health system in Ghana is more about paying lip service. Ideally, in an inclusive health system, TM regulation as well as training of TM practitioners should improve, while the cost of healthcare decreases. However, this is not the case in Ghana as participants recounted that TM products offered at formalised settings including integrated health facilities are expensive. The high cost of TM products at integrated health facilities and TM clinics and the exclusion of such products from the NHIS might continue to plague the Ghanaian health system. However, an appropriate health governance and financing structure could provide financial support for TM practice and aid proper training of TM practitioners to promote trust and respect between and among the health practitioners.

Reflecting on the Ghanaian health architecture, the study shows that knowledge about the practice of integrated healthcare is high among study participants. Participants, irrespective of professional background and location of affiliated institutions were aware of the presence of integrated health facilities and the TM Department at KNUST. This finding confirms the result of a Ghanaian study (Boateng et al. 2016) and a systematic review, which assessed the effectiveness of integrated health systems in Africa (Ampomah et al. 2020). The framework for integrating TM into national health systems clearly specifies that the availability and acquisition of health information is crucial to the building of an effective integrated system (Park & Canaway, 2019). This means that the awareness of orthodox health practitioners and hospital

administrators about the practice of integrated health could be a positive reinforcement to the implementation of the integration intervention.

Most participants perceived TM as the oldest health system. A similar finding has been reported by Tabi et al. (2006) who indicated that TM is part of the Ghanaian culture. In addition, some of the participants deemed TM use associated with minimal side effects. This report has also been observed in other studies (Galabuzi et al., 2010; Mensah & Gyasi, 2012). The perception that TM use presents the least form of adverse reactions was popular among hospital administrators. Acknowledgement of TM as the oldest form of healthcare in the Ghanaian setting coupled with its perceived minimal side effects could serve as enabling factors to TM integration, because notable and historic use of traditional therapies among a given population is a motivation to promote the integration process (Park & Canaway, 2019).

Similarly, participants also considered the availability of medicinal plants and ready market for TM as opportunities or prospects that could cause TM integration to flourish. They envisaged that the incorporation of TM has the potential of increasing patronage of health services and making the integrated health unit sustainable. This observation has also been noted in a study (Krah et al., 2018). The availability of TM in the Ghanaian ecosystem serves as a facilitator to its integration into the formal health system because resource availability as well as communication are some of the key elements needed to build a functional integrated health system (Park & Canaway, 2019).

Communication about and within the integrated system was found to be poor. Study participants reported that service users do not willingly disclose their use of TM to orthodox health practitioners. The works of Agyei-Baffour et al. (2017) and Peprah et al. (2019) support this finding. Likewise, cross-referral is a vital means of assisting TM integration into national health systems (Gyasi et al., 2017). However, our study demonstrates that the level of referral between the two health practitioners is minimal and mostly informal. This report is consistent

with findings of studies conducted in Ghana, South Africa, Tanzania and other sub Saharan African countries (Campbell-Hall et al., 2010; Gyasi et al., 2017; Kayombo et al., 2007; King & UNAIDS, 2006; Kwame, 2021). One of the requirements necessary for proper integration is the acceptance of TM use and its integration by orthodox health practitioners (Park & Canaway, 2019). Therefore, the stern opposition by orthodox health practitioners to refer service users to TM practitioners might obstruct the practice of an integrated healthcare in Ghana. The policy on TM practice in Ghana endorses the training of media experts to help educate the populace on the safe use of TM (MOH, 2005). Therefore, to increase acceptability of TM among orthodox health practitioners, the media, particularly radio and television should actively engage in publicising the integrated health system.

Study participants recounted that conducting medical examinations on service users and constant verification among orthodox health practitioners facilitate the delivery of quality healthcare, which is a classic characteristics of orthodox medicine (Ahlberg, 2017). It is worth mentioning that none of the integrated health studies conducted in the study area has reported such a finding, hence making this finding a unique contribution to the published literature.

The inclusion of TM into the Ghanaian formal health system shows the determination of the government in expanding healthcare delivery in the country. This was evident in the findings of the study as all four groups of participants reported emphatically that TM integration has led to the availability or provision of options in health services. This astute finding has not been highlighted in the literature because most integrated health studies report on perceived rather than empirical benefits of integration (Ben-Arye, Karkabi, Shapira, et al., 2009; Peprah et al., 2021). Moreover, hospital administrators believed that the practice of integrated healthcare has helped the country by boosting its database on health accessibility and the provision of safe TM products and services. To the best of our knowledge, this finding has not been presented by any of the integrated health studies in the study setting.

Besides these benefits, medical doctors felt that TM integration has led to the preservation of indigenous medicine. This finding is consistent with previous studies that the merger of orthodox and traditional health systems could make the modern health system culturally sensitive and preserve indigenous medical knowledge (Pachter, 1994; Peprah et al., 2021). Clearly, the practice of integrated healthcare is noted for offering alternative healthcare to populations (Park & Canaway, 2019). Therefore, the provision of options in health services associated with TM integration into the Ghanaian integrated health system could motivate policy makers and other stakeholders to continue to implement the intervention even in the face of numerous challenges.

Study participants disclosed numerous challenges to the practice of integrated health in Ghana. These challenges are multifactorial in nature. As some of the challenges are attached to TM practice, others affect the delivery of, and access to integrated health services. Participants' major concerns included the non-certification or documentation of TM products, standardisation, regulatory issues, level of professional training among TM practitioners and the absence of a written protocol to spell out details about the integration. These concerns have been raised in earlier studies conducted in Ghana and other African countries (Ahenkan et al., 2019; Awodele et al., 2011; Boateng et al., 2016; Campbell-Hall et al., 2010; Gyasi et al., 2017; Kretchy et al., 2016; Peprah et al., 2021). Acceptance and involvement of health practitioners particularly medical doctors, is a prerequisite for effective integration (Park & Canaway, 2019). Therefore, opposition by medical doctors to TM usage could be a hindrance to the successful integration of TM into the Ghanaian health system. Until the above mentioned concerns are addressed, the Ghanaian health system would continue to be non-functional and ineffective.

To some extent, integrating TM into the Ghanaian health system has received positive reactions from stakeholders, with the perception that the consolidated health unit would enhance health delivery in Ghana (Peprah et al., 2021). However, poor health

governance/financing policies have negatively affected certain aspects of the Ghanaian health architecture. Despite the shortfalls of the system, some level of integration or collaboration exist at piloted health facilities (Boateng et al., 2016). To improve the level of integration between the two health systems, inclusion of TM in the medical school curriculum, strict regulation of TM practice and an improved communication strategy would be required.

4.5.1 Implications for Practice

The findings of the study suggest that TM integration into the Ghanaian health system has not been effective due to weak referral system, inadequate training on TM and non-fulfilment of vital conditions/standards needed to effectively integrate TM into the Ghanaian health system. Based on these findings, the following recommendations are made to the various stakeholders. The government should conduct recurring investigation/research among orthodox and TM practitioners to identify the desired integration approach to adopt and clearly specify the roles of the stakeholders. For example, the Ministry of Health should explore the views of the two health practitioners to determine whether TM integration should involve referral agreement with public health facilities. They should enable the establishment of indigenous health institutes where TM practitioners would work collectively or both health practitioners could execute their duties within the same hospital/clinic. The outcome of such investigations should be documented and shared with the health practitioners and other stakeholders. Implementing the desired integration approach could strengthen the referrals system between and among the health practitioners. Since the two health systems are founded on different philosophies, the government should encourage knowledge sharing among the health practitioners through professional/formal training.

Knowledge sharing among the two health practitioners would intensify the understanding of practitioners on the underlying philosophies/concept of health from the perspectives of TM and orthodox forms of care. Finally, to increase patronage of integrated healthcare services, users must be aware of the formal incorporation of TM into the Ghanaian

health system. The government must subsidise the cost of approved TM products. Once products are subsidised, people especially the poor can afford such products when the need arises.

4.5.2 Strengths and Limitations

One major strength of the study is the presentation of experiences of four different groups of stakeholders from the formal health setting within a single document. Thus, the nature of the Ghanaian integrated health system has been presented from practice and administrative perspectives. The availability of such multifaceted knowledge could be valuable to policy makers in modifying existing policies to improve the integrated system. The inclusion of participants from two contrasting geographical settings – Kumasi metropolis and Offinso North districts strengthens the reliability of the study findings. However, the findings cannot be generalised due to the adoption of a qualitative research approach. More so, the study could be affected by overestimation or underestimation of the issues discussed since participants had to recollect their experiences. This limitation was addressed by checking the data with the participants.

4.6 Conclusion

This qualitative study has demonstrated that TM integration into the Ghanaian formal health system has led to the availability of options in health services. This benefit of the system could serve as a facilitator to the integration process. Although participants support and noted the benefits of the practice of integrated health in Ghana, they identified a number of socio-economic and political factors such as poor processing and packaging of TM, highly priced TM products/services and opposition of medical doctors to TM use as factors impeding the integration. Other challenges include inadequate publicity about TM integration and absence of a protocol to guide the integration process.

Strategies such as proper implementation of regulatory rules, proper processing and certification of TM products, professional training of TM practitioners, inclusion of TM in

medical school curriculum and educating the public about the practice of integrated health system through the media were suggested by participants as ways to improve the Ghanaian health system. Future research should focus on assessing the opinions and involvements of TM practitioners regarding the integration of traditional therapies into national health systems because proper teamwork through knowledge sharing and efficient management of authority or power in the system between orthodox and TM practitioners is critical in strengthening health systems (Kwame, 2021).

Contributions of Chapter 4 to thesis

This qualitative study partially addressed **RQ3**: What are the perceptions and experiences of health practitioners and hospital administrators in Ashanti region in relation to the benefits and barriers associated with the current practice of integrating TM into the health system? Findings from this study stressed that inter-professional relationship between orthodox health practitioners and their TM counterpart is weak. This has created a weak cross referral system within the Ghanaian health setting. An exploration of the opinions of TM practitioners regarding the integration of their practice into the mainstream health structure was then imperative. Hence, the perceptions, experiences, and recommendations of TM practitioners in the Ashanti region were explored to utterly understand the nature of coordination of care and inter-professional relationships between the stakeholders, particularly health practitioners and service users within the Ghanaian health system. The findings of this study have been presented in **Chapter 5**.

Chapter 5: Integrating traditional medicine into the Ghanaian health system: perceptions and experiences of traditional medicine practitioners in the Ashanti region (https://doi.org/10.1093/inthealth/ihac059)

5.1 Chapter Overview:

Abstract: Traditional medicine (TM) plays a vital role in the Ghanaian health system by serving as an alternative healthcare delivery system for the majority of people. However, the quality of practice and level of TM practitioners' involvement in the integration of TM into the health system have not been fully investigated.

This study employed a phenomenological qualitative study design to explore the perceptions, experiences, and recommendations of TM practitioners in the Ashanti region regarding TM integration. Data were collected through individual interviews with 17 participants.

Participants had knowledge about TM integration. They cited effective alternative healthcare delivery and improved patient outcomes as the key benefits of TM integration. However, they reported a shortage of approved TM products, poor visibility of TM integration, and poor visibility of TM integration and poor relational coordination of care as factors hampering the integration. Participants recommended improved inter-professional relationships, provision of financial support, and improved publicity of TM as possible strategies to enhance TM integration in Ghana.

The findings of the study clearly demonstrate that the Ghanaian health system is currently operating a consumer-led, tolerant health system with a parallel (between orthodox and TM practitioners) healthcare delivery model. Successful implementation of an effective TM integration would require improved integrative collaborative coordination of care between orthodox and TM practitioners in Ghana.

5.2 Introduction

Traditional medicine (TM) refers to the sum total of knowledge, and practices, whether explicable or not, used in the diagnosis, prevention, and elimination of physical, mental, and social imbalance, relying exclusively on practical experience and observations handed down from generation to generation, whether verbally or in writing (Barimah, 2013; World Health Organization, 1978). In Ghana, TM includes the utilisation of plants with medicinal value as well as faith/spiritual healing for therapeutic reasons (Abel & Busia, 2005; Gyasi et al., 2017). TM practitioners are regarded as competent healthcare providers within their communities (World Health Organization, 1978). They usually use vegetable, animal, and mineral substances for the treatment of illnesses. TM practitioners also employ methods based on the social, cultural, and religious background as well as on the knowledge, attitude, and beliefs that are prevalent in a given community regarding health, wellbeing, and the causation of disease and disability in the care process (World Health Organization, 1978, 2000). This study focuses on the use of medicinal plants for therapeutic reasons and extends the definition of TM practitioner to include a person who has acquired formal or professional training in the field of TM and has the license to practice.

Studies have highlighted the significant role TM plays in the delivery of healthcare and meeting the health needs of people in both high and low/middle income countries (Hilbers & Lewis, 2013; Hussain & Malik, 2013; Kwame, 2021; Payyappallimana, 2010). TM usage has been reported in high-income countries such as France (75%), Australia (48%), Canada (70%), Belgium (38%), and the United States of America (42%) (Payyappallimana, 2010; World Health Organization, 2002). The WHO has also stated that TM continues to form an integral part of health systems in Latin America, Africa, and Asia. For example, in China, TM constitutes approximately 40% of all health services delivered, while traditional forms of Malay, Chinese and Indian medicines are widely used in Malaysia (World Health Organization, 2002). Likewise, 80% of the African population relies on TM as the first line of healthcare

World Health Organization, 2002). Some Ghanaian studies have stressed that TM serves as the first line of healthcare and is mostly used in the treatment/management of about 42 ailments, particularly cuts, foot rot, stroke, fevers, and diabetes (Boadu & Asase, 2017; Vasconi & Owoahene-Acheampong, 2010).

It is reported that TM is easily accessible to Africans (Kwame, 2021; Tabi et al., 2006). For example, in Uganda, the TM practitioner to client ratio is 1:200-400 and the orthodox health practitioner to clients' ratio is 1:20,000. In Ghana, the ratio of TM practitioners to clients is 1:400 and the orthodox health practitioner to clients is 1:12,000 (Abel & Busia, 2005; Vasconi & Owoahene-Acheampong, 2010). TM is widely utilised in Ghana. However, the inappropriate use of TM can negatively affect the health of its users. For example, the unregulated use of TM among women of childbearing age in Ghana has led to reproductive health complications such as abortions, ectopic pregnancies, pelvic inflammation diseases among others (Addo, 2007). The health complications necessitated the need to regulate TM use and direct service users towards qualified TM practitioners. This in turn facilitated the incorporation of TM into the formal health system in Ghana.

The practice of incorporating TM into formal health systems is becoming an accepted and widely used model in health delivery systems around the globe (Gyasi et al., 2017). WHO enlists three forms of TM incorporation namely: integrative, inclusive, and tolerant health systems (Vasconi & Owoahene-Acheampong, 2010; World Health Organization, 2002). These forms of integration differ in terms of the level of inclusion and acceptance of TM integration in formal health systems. For example, a country is said to be practicing an integrative health system if TM is formally recognised and integrated in all aspects of healthcare delivery (Kwame, 2021; Vasconi & Owoahene-Acheampong, 2010; World Health Organization, 2002). An inclusive health system on the other hand refers to a health system where TM is officially recognised as a medical practice however, TM practice might not be fully incorporated in all

spheres of healthcare, training, and education. With tolerant health systems, healthcare is solely based on the orthodox or modern health system, with only certain TM practices being legally accepted (Vasconi & Owoahene-Acheampong, 2010; World Health Organization, 2002). Countries with integrative health systems include China, the Republic of Korea, and Vietnam among others. Inclusive health system is practiced in both high (United Kingdom, Germany, Canada, Australia) and low/middle income countries (Ghana, Nigeria, Mali, Equatorial Guinea) (Vasconi & Owoahene-Acheampong, 2010; World Health Organization, 2002). The tolerant health system is best exemplified in New Zealand (Park & Canaway, 2019).

In Ghana, the health system is organised in such a way that the orthodox health system is well funded and maintained by policy makers. The traditional health system, on the other hand, though popular, but receives less support from policy makers (Boateng et al., 2016). The inclusive health system as practiced in Ghana means that the country accepts TM as a medical system and has a TM policy, which regulates the practice. The Traditional Medicine Practice Council (TMPC) and the Ghana Food and Drug Authority (FDA) have been created to license/register TM practitioners and regulate their activities (Agyei-Baffour et al., 2017; Ampomah, Malau-Aduli, Seidu, Malau-Aduli, & Emeto, 2021; Gyasi et al., 2017). A Centre for Scientific Research into Plant Medicine has also been instituted to improve TM practice by means of scientifically authenticating the quality and safety of TM products. Other interventions include the creation of the TM department under the Faculty of Pharmacy at the Kwame Nkrumah University of Science and Technology (KNUST), which trains people to become professionals in TM practice and the establishment of TM units in certain public hospitals in Ghana (Gyasi et al., 2017). These interventions were carried out to increase the credibility of TM in the health system as well as promote and preserve indigenous medical knowledge (Gyasi et al., 2017; Vasconi & Owoahene-Acheampong, 2010).

Despite the implementation of these interventions, TM integration in Ghana has not been successful as expected due to weak inter-professional collaboration between TM and orthodox health practitioners (Gyasi et al., 2017) and low level of awareness concerning the integration process among service users (Ampomah, Malau-Aduli, Seidu, Malau-Aduli, & Emeto, 2022b; Boateng et al., 2016). A study has reported the issue of 'power struggle' between TM and orthodox health practitioners where TM practitioners want to retain power and control their area of expertise by suggesting co-referral arrangements and local collaborations (Kwame, 2021). Conversely, orthodox health practitioners prefer the incorporation of TM under the direction of the formal health system, where the TM operates based on the principles of orthodox healthcare (Kwame, 2021). Clearly, the two groups of health practitioners have different perspectives regarding the implementation of the integration process. To adequately address existing tensions between the two groups and foster better inter-professional collaborations for effective TM integration in Ghana, it is important to explore all key stakeholders' perceptions of the level and quality of integration of TM into the Ghanaian health system.

The current study is an aspect of a larger research project that used the conceptual framework for integrating TM into national health systems (Park & Canaway, 2019) assess the practice of TM integration in Ghana. The framework presents four main components that influence TM integration – population characteristics, consumer experiences, health architecture, and health governance/financing (Figure 1.2).

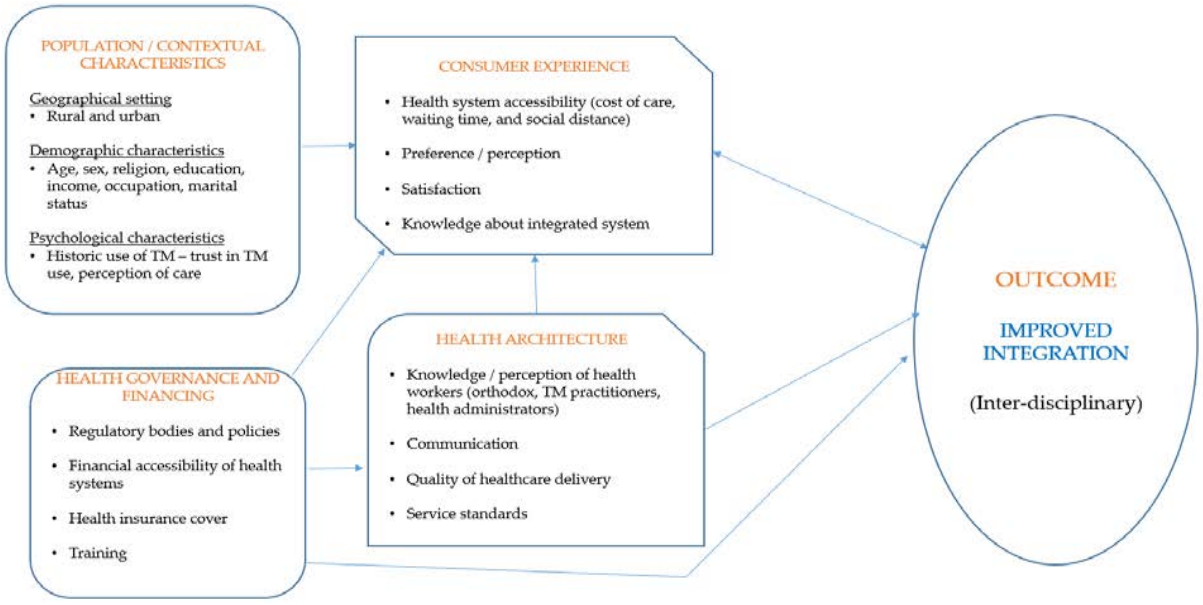

Figure 1.2: Conceptual framework for integrating TM into health systems.

Source: Adapted from Park and Canaway (2019).

The population characteristics and consumer experiences components of the framework have been employed to evaluate the experiences of health service users (Ampomah et al., 2022b), while the health architecture/health governance and financing components were used to investigate the experiences of orthodox health practitioners and hospital administrators in the Ashanti region of Ghana (Ampomah et al., 2021). The findings from these studies accentuate that TM integration has not been effective in Ghana. Given that TM practitioners are major stakeholders in the health system, exploring their perceptions and experiences about TM will provide a holistic approach to the practice and integration of TM in Ghana. Therefore, this qualitative study sought to address the research questions:

- What are the perceptions and experiences of TM practitioners in the Ashanti region regarding the integration of TM practice into the formal Ghanaian health system using a conceptual framework for TM integration?
- What are the recommendations to improve TM integration in Ghana?

The current study was conducted among TM practitioners, and it focused on two elements/components of the framework:

1. Health governance and financing

2. Health architecture

The use of a conceptual framework in the current study offers adequate insight into the relationship between the key components of TM integration and provides guidance as to how the integration process may be improved in Ghana.

5.3 Material and Methods

5.3.1 Ethics

The Ghana Health Service Ethics Committee (GHS-ERC003/05/20) and James Cook University Human ethics committee (H8239) granted approval for the study. All the study methods and procedures were conducted in accordance with the Helsinki Declaration on ethical principles in conducting human research.

5.3.2 Study design

This study adopted a qualitative research design to explore the perceptions, experiences, and recommendations of study participants relating to TM integration into the Ghanaian health system. Qualitative research design helps to present the lived experiences of people relating to an event or phenomenon (Creswell, 2007). Hence, the adoption of a qualitative research design aided in exploring what study participants have experienced, how they acquired the experiences, and a collective presentation of such experiences (Creswell, 2007).

5.3.3. Study setting

The Kumasi metropolis and Offinso North district of the Ashanti region were selected for the study. Details on the study area have been reported in earlier studies (Ampomah et al., 2021, 2022b). The Ashanti region was selected because it is endowed with a range of TM products since it is located in the forest belt in Ghana (Gyasi et al., 2017). In addition, the region has a high annual population growth rate of 2.7% (GSS, 2012). However, the increase in population size does not tally with the number of health facilities available, causing inadequate health services. Exploring the experiences of TM practitioners to promote effective integration

of TM into the orthodox system might expand health services to cater for the growing population in the region. Furthermore, the region is one of the most populous and urbane geographical areas in Ghana with various socio-economic, ethnic, and cultural backgrounds (Gyasi et al., 2017). Therefore, the multi-ethnic aspect of the region could enhance the transferability of the study findings.

5.3.4 Target population and recruitment strategy

The study targeted TM practitioners within the Kumasi metropolis and Offinso North district. These settings were selected with the aim of identifying similar or differing experiences among rural and urban TM practitioners regarding the practice of integration in Ghana. Kumasi metropolis represented the urban setting because it is the regional capital, with the highest population size (Ashiagbor et al., 2020) and integrated health facilities. Offinso North district was the rural setting since it accounts for the least population (GSS, 2012, 2013b) with no integrated health facilities.

In this study, a TM practitioner is a person who has practiced TM whether in formal (integrated health facilities/TM clinics) or informal (community-based practitioners) settings for at least a year in the study settings. Other definite inclusion criteria comprised practitioners who were 18 years or older and self-declared knowledge about the use of TM in diagnosing and treating/managing disease conditions. TM practitioners were targeted as stakeholders in the Ghanaian health system given that about 70% of Ghanaians are reported to use TM (Boateng et al., 2016). Study participants who practiced within formal settings such as integrated health facilities and clinics were recruited purposively while snowballing sampling technique was used in recruiting community-based TM practitioners. Thus, the recommendations of previously sampled community-based practitioners led to the enlistment of prospective participants.

5.3.5 Data collection period

Prior to data collection, two research assistants (one male, one female) from the University of Cape Coast were trained in a 5-hour workshop on the objective of the study and data collection process, using an interview guide as the training module. The assistants each have a master's degree in Public Health. The training of the research assistants on the study helped them to understand the goal of the research and facilitated consistency in the interview process, as well as the use of the interview guide. Data collection was conducted from mid-March to May 2021.

5.3.6 Data collection procedure

All interviews were conducted using face-to-face in-depth individual interviews and the languages used were English and Twi (main local dialect in the study area). English and Twi were used to cater for the varying educational levels of the study participants. The interviews were conducted in conducive environments as chosen by the study participants. All interviews were audio recorded with the permission of participants and lasted between 55 and 70 minutes.

Primarily, the practitioners were approached and provided with information sheets, which detailed the objective and benefits of the study as well as the ethical considerations. Both verbal and written informed consents were obtained from every participant before the start of the interview. It is reported that TM use is predominant in the study setting (Boateng et al., 2016), which could give rise to bias in the interview process. To minimise this bias, a training manual was used to educate research assistants as to how the interview questions should be asked. This averted the bestowment of interviewers' personal preferences concerning TM integration. The first-named author (IGA) was present at the first three interviews to ensure exactitude and uniformity in the interview procedure but no conversation occurred between the study participants and IGA.

To maintain anonymity, names and other identifiable information were not assigned to the participants, rather they were allotted numbers. At the onset of the interviews, study participants were required to provide some demographic information (sex, age, and years of

practice) about themselves. A semi-structured interview guide was used which comprised of questions relating to the participants' perceptions, experiences, and recommendations on how to improve TM integration in Ghana. Specifically, topics such as perceptions about the health systems, interactions within the health system, regulation of TM practice in Ghana, and recommendations to improve the Ghanaian integrated health system were discussed. Data saturation was achieved at the 14th interview after which three more interviews were conducted, totalling 17 interviews. The additional interviews were conducted to ascertain that no extra information collected had distinctive characteristics to form a new group or theme (Guest et al., 2006). Assistants prepared field notes by way of recording their experiences and dealings with the participants. The research assistants are familiar with research methods, particularly in the field of qualitative research. To avoid bias and enhance precision in the data collection, allowable probing questions were included in the interview guide. The inclusion of probing questions prevented the research assistants from introducing their ideas in the interview process. Recurrence of the interview process was not necessary; however, elucidations were acquired from some study participants after the data collection phase.

5.3.7 Data analysis

An experienced transcriber transcribed all the 17 interviews and the first author (IGA) read the transcripts carefully and thoroughly. The interviews were translated as they were being transcribed. Transcribers were fluent in the local dialect and where able to effectively transcribe the recorded interviews. After transcription, there were no negative impact on the narrations or experiences of the participants. Additionally, the first author and another member of the research team compared the audio-recorded interviews and transcripts to ensure accuracy and precision in the data. This two-step verification ensured that no information was lost during the translation and transcription process. NVivo version 12 (QSR International Pty Ltd, Victoria, Australia) was the software used in analysing the data, while framework analysis was the analytical method used. Framework analysis entails five systematic steps, in which inductive

and deductive procedures were employed in the analysis. Then, interpretations or synthesis of the findings was done using the conceptual framework of the study. These five systematic steps include familiarisation; identification of thematic frameworks; indexing; charting; mapping and interpretation (Appiah et al., 2018; Srivastava & Thomson, 2009).

Two authors (IGA and BSMA) conducted data analysis independently. The transcribed data was read in detail on numerous occasions to ensure familiarisation with the data. Then thematic framework (recognition of main concepts or ideas) was developed based on comments/summaries made at the familiarisation stage. The key ideas narrated by the participants were inductively ascertained at the thematic framework stage. Indexing was done by placing parts of the data under specific broad concepts or themes. An inductive method of analysis was also applied at this stage; ensuring that the themes were generated from the data. Then, charting was conducted by organising the marked data in charts according to the themes identified. Lastly, mapping and interpretation were carried out by arranging the charted data to demonstrate the study participants' perceptions and experiences with TM integration into the Ghanaian health system. During the mapping and interpretation stage, a deductive analytical method was applied in categorising the themes under the elements of the utilised conceptual framework.

To ensure further rigour in the data analysis, initiatory coding and generation of themes were performed separately by IGA and BSMA. Discrepancies between the coders were resolved through discussions at a consensus meeting. The other authors (AAS, AEOMA, and TIE) reviewed the themes and quotes to enhance the trustworthiness of the study findings. The elements of trustworthiness (credibility, dependability, transferability) were ensured through investigator triangulation, supervisor/peer debriefing, member checking, and detailed description of the study site and methods used. The themes have been presented with demonstrative quotes attached with participants' characteristics (For example, Participant 1,

Kumasi). The COREQ checklist (Tong et al., 2007) for reporting qualitative studies was used in reporting the study (see Supplementary file 1, COREQ Checklist).

5.4 Results

5.4.1 Characteristics of study participants

In the Kumasi metropolis, there are nine TM practitioners practicing in integrated health facilities. Six out of the nine practitioners agreed to participate in the study. Eleven (11) participants were purposively sampled from non-integrated health facilities, totalling 17 interviewees. Of the 17 participants, 10 practiced in the Kumasi metropolis whereas the remaining were located in Offinso North district. Most (six) of the participants from the Offinso North district were community-based practitioners. The majority (11) of the participants were males. Participants were aged between 26 to 71 years. Seven participants had a tertiary level of education. On average, participants had about 13 years of practice experience.

5.4.2 Themes

In all, eight themes emerged from the analysis of the participants' responses. Three themes (efficacy of traditional health therapies, patient-centred approach to TM delivery, effective alternative healthcare delivery) enabled the integration process. While the remaining five themes (financial constraints associated with TM practice processes, poor quality of TM operational processes, unbalanced professional training opportunities, poor relational coordination of care, poor visibility of TM integration) were identified as barriers to TM integration in Ghana. These were the only narratives offered by the study participants after several probes and are discussed below with no additions to avoid researcher projection.

5.4.3 Enablers of TM integration:

5.4.3.1 Efficacy of traditional health therapies: Study participants started by expressing their positive notions about traditional health therapies. They expressed the view that traditional health therapies, particularly TM products, were associated with negligible undesirable effects. The rationale behind participants' assessment was that orthodox medicines

have been processed, therefore contain some form of chemicals but TM is natural and hence has little or no inimical effect. Participants regardless of the location of operation (whether, solely or within an integrated facility), believed that TM is effective in treating maladies, particularly fevers.

> "*… [A] client was taking orthodox medicines for typhoid but he was not getting better. So, it was a worry as he kept complaining about abdominal pain and growing lean. So, I asked the client to go for a lab test, which showed that he had typhoid fever. So, I administered the TM to him and after taking two or three courses of the TM, he saw massive improvements*" [Participant 5, Kumasi].

> "*The orthodox medicine has been synthesised but the TM is natural so it is associated with little or no side effects*" [Participant 12, Offinso North].

5.4.3.2 Patient-centred approach to TM delivery: When discussing TM practitioners' approach to healthcare delivery, the participants emphasised the importance of a patient-centred approach to healthcare delivery, which they employed in the care process. They maintained that they listened effectively to their clients' concerns and showed genuine care towards them. They believed that the patient-centred approach made the clients feel welcomed and appreciated, which fostered improved patient health outcomes. In addition, majority of the participants emphasised that service users demonstrated their satisfaction with the services they received through recommendations. According to them, once a service user was satisfied, he or she recommended the TM practitioner's services to other people/potential clients or showed appreciation by thanking them in person.

> "*When they (clients) come, I take time to listen to their concerns; I make them feel welcomed and accepted. Therefore, they get the assurance that I will provide them with the treatment and I always do*" [Participant 7, Offinso North].

> "*When they come here and they are satisfied, they recommend our services to more people. Sometimes, some of them would come and thank you or show appreciation*" [Participant 15, Offinso North].

5.4.3.3 Effective alternative healthcare delivery: Formal training on TM bridges the gap. TM practitioners operating within integrated health facilities have formal training;

therefore, they adopt a scientific approach in diagnosing disease conditions and their healing processes are in line with acceptable scientific procedures in healthcare, which foster effective and safe alternative healthcare delivery. These practitioners perceive that the integration intervention bridges the gap between orthodox and indigenous means of healthcare delivery. TM practitioners operating in integrated health facilities identified the availability of different healthcare services as an advantage of incorporating TM into the Ghanaian formal health system. They insisted that TM integration has provided effective options in healthcare services, whereby, service users alternate between the two health systems until they achieve the expected outcome.

> "*Now, there is an alternative, people can choose which healthcare system they want. Also, where they (clients) do not see improvement in accessing orthodox healthcare, they come to TM and it works*" [Participant 4, Kumasi].

> *"…the beauty about the current state we have is that we have a professional who lies in between the orthodox setting and the traditional setting that is the medical herbalist who is trained to understand orthodox medicine or style of healthcare and also trained to understand TM. So that, the trained TM practitioners' approach in diagnosing disease conditions in the health team follows the scientific processes"* [Participant 16, Kumasi].

5.4.4 Barriers to TM integration:

5.4.4.1 Financial constraints associated with TM practice processes: The participants demonstrated good knowledge and understanding of the role and responsibilities of the regulatory bodies and the relevant policies. They also reported familiarity with the FDA, TMPC, and the TM Act that regulate TM practice in Ghana. They mentioned that the FDA is responsible for the training of TM practitioners and the issuance of licenses after the evaluation of TM products. According to the participants, the TM Act was passed to regulate the entire TM practice while the TMPC registers practitioners as well as their places of operations.

> "*The TM council with the Acts, Acts 575, and FDA regulate TM. It regulates the practitioners. In the first place, it registers TM practitioners and their premises. So, if this is the premises that the practitioner practices, then the TM practitioner would have to first register his/herself, and then you register the premises.*" [Participant 2, Kumasi].

Study participants were satisfied with the operations of the supervisory bodies; yet they felt that the cost of their services was too expensive. They believed that the FDA does not consider the economic predicament of some of the TM practitioners and based this conclusion on the exorbitant charges of the FDA. They explained that the very expensive charges of the FDA serve as an obstacle to proper TM practice in Ghana (an inability to produce standardised products/services).

> "*The FDA performs considerably well just that their price is too expensive. They do not consider the economic predicament of some of the practitioners. If you do not have money, then you cannot offer standard services or products. Hence, not practicing proper TM"* [Participant 12, Offinso North].

Furthermore, the participants identified a number of financial bottlenecks that affect the proper execution of the TM practice in Ghana. These financial bottlenecks include high cost of TM practice registration, partial coverage of TM in the NHIS, and the exorbitant cost of approved TM products. Primarily, participants described the TM registration process as burdensome. They based their evaluation mainly on the cost involved in setting up the required physical structure for the processing of the products as well as cost of getting the products tested for safety at approved scientific research centres or pharmacological units. Participants from the rural setting clearly stated that they do not earn much from the practice; therefore, making certain payments to register their practice/products is not an easy task for them.

> "*The regulatory processes are not easy at all, even in terms of money. The facilities that should be registered for TM practice should have a minimum of four bedrooms. You know how difficult it is to get a one-bedroom structure in Ghana, not to think about four and these four rooms are not meant for sleeping; this is where you will prepare the TM. So, you can imagine! Getting water to your facility should be something that will not rust. So, water alone will cost you GHC15, 000. So, getting the facility ready costs billions…before you can produce any TM product, they will come and inspect your facility. You cannot say that you going to sit in your house and do anything. They will scrutinise everything. In addition, they will let you bring the products to the pharmacological unit for further analysis at KNUST. It is based on the results that they (FDA) will issue you a license*" [Participant 6, Kumasi].

> "*…when I was going through the process, they asked me questions about the ingredients I used in preparing my medicine. They asked me to take the medicine to a Centre for*

> *Scientific Research where they run some test on the medicine. After that, you will have to make some payments. After the test in the city, you will have to make payment and many bureaucracies that you have to go through. I do not remember the exact amount that you have to pay but I spend over GHC4, 000 on the processes. We do not make that kind of money so when we were supposed to go and make that payment; it was not easy at all*" [Participant 7, Offinso North].

The narratives from the participants in integrated health facilities depicted that the traditional health system is partially covered by the Ghanaian health insurance scheme and it is limited to the government facilities selected to deliver integrated healthcare. Participants from non-integrated health facilities also confirmed this notion; they stated that clients pay for consultation and TM products because their services and products are not included in the national health insurance scheme. Study participants believed that the exclusion of TM products from the health insurance scheme accounts for the low patronage of healthcare services at integrated health facilities.

> "*…with the orthodox, both the service and medications are covered by the health insurance. But for TM section, the service is covered by the health insurance but the products are not. The medicine itself is not covered by the health insurance and so patients are supposed to pay for those TM products. So, if in the same hospital, you will not pay anything for a particular type of treatment but for the other you will pay, then definitely, you will go for the one that you will not have to pay. It is obvious. It is not helpful because we do not get many clients*" [Participant 5, Kumasi].

> *"I have come across some clients who were really sick and did not have money yet had the NHIS cards but I cannot accept the cards because my services are not included in the insurance scheme. When I accept the NHIS cards, I will run a loss, which is bad for business. So clients have to pay for both the services and the products* [Participant 14, Offinso North].

TM practitioners who operated in the integrated health facilities further explained that exorbitant costs of approved TM products were a contributory factor to the ineffective nature of TM integration in Ghana. They felt that the cost of treating ailments with approved TM products was higher than orthodox medical treatments. They clarified that healthcare services delivered in such facilities tend to be more economical than in private TM clinics because service users do not pay consultation fees.

> *"For antimalarial, when you come to the TM side, we will give you three bottles that you have to take for seven days. That can cost you GHC60 but when you go to the orthodox side, the antimalarial is for three days and you will spend about GHC20 on it. I think the difference is too much"* [Participant 5, Kumasi].

> "*When they (clients) come here (TM unit), the cost of care is less expensive than going to a private facility because consultation is free*" [Participant 4, Kumasi].

5.4.4.2 Poor quality of TM operational processes: Another barrier to TM integration is the poor quality of TM operational processes. Participants, irrespective of the location of operation, identified standard/good TM operational processes (proper certification, packaging, storage of TM, products, and constant supply of approved TM) as a fundamental strategy required to standardise TM practice and promote its integration. However, some of the study participants admitted that they do not package their products to meet acceptable standards, whereas others confessed that they fail to provide necessary information about their products. Participants associated their failure to embark on proper packaging and certification of products to cost. The issue of poor certification was prevalent among participants in the rural setting.

> "*With the packaging, it is good but I do not do it. Packaging, labelling and all those things come with huge cost but I do not earn much from the practice so I am unable to package nicely*" [Participant 12, Offinso North].

In addition, participants expressed their displeasure with the ways in which TM products are displayed and stored. They felt that some practitioners do not adhere to proper storage standards, especially during sales; hence, they believed that poor storage could lead to harmful storage reaction conditions, where users would not achieve the best results from using the products.

> *"Storage of TM is an issue. Even in the chemical shops where the medicines are displayed for sales, very few of them have air conditions in the facilities. We know that drugs are to be stored in cool places and far away from direct contact from sunlight. Some of these medicines are not packed in sunbath bottles and all that. Of course! We are subjecting the product to harmful or other storage reaction conditions, which is an issue. When these reactions take place, people will not get the best out of the products"* [Participant 16, Kumasi].

Regarding the supply of TM products in the integrated health system, TM practitioners within integrated health facilities mentioned that countless TM products are available in the Ghanaian health system; however, only products that are properly certified, approved by the ministry of health, and included in the list of essential drugs are supplied to the integrated health facilities. They perceived that though there are varieties in the supply of orthodox medicines, the same could not be said of the approved TM products. The participants recounted that they usually experience shortage of the products due to the restrictive nature of the supply. They attributed the shortages of approved TM in the integrated facilities to the extensive procurement system in the government sector. Participants concluded that the shortage of approved TM products interferes with service delivery and subjects the service users to unnecessary delay in receiving healthcare, which in some instances has led to the loss of clients.

> *"Shortage of the TM products is one of the problems because the drugs are being provided by the ministry of health. There are always shortages of these drugs because there are no varieties as compared to the orthodox medicines. The drugs are limited but we have the traditional people who can get the drugs but they are not certified by the ministry, therefore, we cannot use it in the hospital. For example, Taabea TM products are very good but it cannot be used in the hospital because it is not certified as been part of the essential list"* [Participant 17, Kumasi].

> *"Currently, when the TM products get finished, you have to wait for about three or four months before getting stocked. By then, you may lose some of your clients"* [Participant 5, Kumasi].

5.4.4.3 Unbalanced professional training opportunities: The interviews indicated that some of the participants were not impressed with the level of professional training in their practice. They felt that the acquisition of formal training among TM practitioners was low because some of their colleagues gained knowledge on practice in an unofficial manner, particularly apprenticeship through family lineage. They explained that the informal nature of acquisition of knowledge on the practice means that some practitioners lack basic knowledge of standard medical practice. When asked to disclose the forms of training they have received. The narratives from those in the urban setting showed that they received training on TM practice

through formal education, whereas the rural practitioners learnt the profession informally by way of family heritage.

> *"Most of the TM practitioners have not had formal education. They learnt from their fathers. They may have some knowledge on medicinal plants and treatment of common illnesses but that is not enough because they will be lacking some basic skills or standards in medical practice"* [Participant 11, Offinso North].

> "*I had my training at KNUST and Mampong. At KNUST, I spend four years before moving to Mampong for an additional two years of training. So, in all, I spent six years of training on TM*" [Participant 5, Kumasi].

The participants who acquired formal training on TM at the KNUST described the nature of the training they received. They described themselves as clinicians because they were exposed to courses such as biochemistry, anatomy, physiology, clinical pathology, general pharmacology dispensary, and TM. They believed that undertaking such courses helped them acquire both orthodox and traditional medical knowledge.

> *"I was trained as a clinician; I was also trained in the area of diagnostic health that is clinical diagnostic, general pharmacology, and pharmaceutical chemistry. The courses that are related to pharmacy. I also did clinical pathology, biochemistry, anatomy, physiology, TM, and a little bit of social functioning and English"* [Participant 16, Kumasi].

> *"At our faculty, we do pharmacology; the study of plants from first to final year. We also do formal medical courses as well, such as anatomy, physiology, pathology, biochemistry. We also do an aspect of pharmaceutical courses mainly dispensary. We also go for clinical…we do it from first to final year. Finally, we do some courses at the medical school and pharmacy courses as well"* [Participant 17, Kumasi].

5.4.4.4 Poor relational coordination of care: The participants who practiced in integrated health facilities reported that orthodox health practitioners oppose TM integration by urging service users not to seek care at the TM units. Some participants stressed that orthodox health practitioners, particularly medical doctors and nurses, resist TM usage because they believe that successful TM integration into the Ghanaian health system would decrease the customer base of the orthodox health system, thereby increasing that of TM practitioners.

"Some of the nurses even give the patients directions to go to different places for treatment and those patients who really know about the TM will still insist on coming to the TM unit for treatment. Some of the nurses and medical doctors even sack the patients. It got to a time we had to report the issue to their boss at the hospital to caution the nurses. The behaviours of these orthodox health professionals deter the patients from seeking TM at the hospital" [Participant 17, Kumasi].

"*Some people think that when TM is successfully integrated, we (TM practitioners) would be taking their jobs. That is what some of the orthodox medical practitioners think, particularly the medical doctors so they resist TM and do not refer patients to us*" [Participant 15, Offinso North].

Study participants indicated that active interaction between TM and orthodox health practitioners has the ability to expedite TM integration into the formal health system. However, they viewed the nature of referral within the Ghanaian health system to be intra-referral (referral among TM practitioners) rather than cross-referral. They explained that intra-referrals were carried out because of the absence of specific TM products at some integrated health facilities and inadequate technical knowledge to treat a particular disease condition.

"*Some of our colleague TM practitioners do refer patients to us. A colleague in Accra may even ask someone to come and see us. Sometimes, if the facilities do not have a particular TM medication for patients, they refer them to come here. For example, there was a woman who was receiving treatment for fertility issues. When she came to our facility, we did not have the medication for her so we referred her to Atonsu Agogo (Kumasi South hospital). Now, when Atonsu Agogo hospital has a problem, they also refer their TM patients to us.*" [Participant 5, Kumasi].

"*No single person can treat all kinds of diseases. Everyone specialises in a particular area. So, if a patient come to me with a disease that I cannot treat, I refer him/her to a colleague who treats that disease. Personally, I have not had any referral from the medical doctors. Rather, I have received some referrals from my fellow TM practitioners*" [Participant 9, Kumasi].

5.4.4.5 Poor visibility of TM integration: Another major barrier highlighted by the participants is the poor visibility of TM integration. Most participants in the urban setting felt publicity about integrated health facilities was not enough; hence, the value of their practice is not evident. They explained that publicising TM integration is supposed to be a nationwide exercise, spearheaded by the government (officials in

charge). Nonetheless, they felt that publicity has been relegated to the health facilities. Participants considered inadequate publicity about TM integration as the cause of low awareness levels among service users in the Ashanti region.

"*They (officials in charge) have not done so well with publicity. We tell people about the service so that they come. It is supposed to be a national thing but they are not doing it*" [Participant 2, Kumasi].

"There are a lot of people who do not know about the existence of TM in the government hospitals due to low publicity about the integration" [Participant 4, Kumasi].

5.4.5 Participants' recommendations to foster better integration of TM into the health system

In the light of all the barriers impeding the integration process, the participants believed that TM could properly be integrated into the Ghanaian health system. On that note, they proffered five major recommendations to policy makers, which include the provision of financial support to TM practitioners and service users, standardisation of regulatory policies and TM practice, increased professional training opportunities, improved inter-professional relationships and improved publicity of TM integration (Figure 5.1).

5.4.5.1 Provision of financial support to TM practitioners and service users: From a financial support point of view, the participants suggested that to improve TM integration would require the provision of financial support by the government to TM practitioners. They anticipated that community-based TM practitioners' ability to access loans or financial support would help to upgrade their activities by adopting proper manufacturing and packaging procedures. The participants believed that the adoption of proper manufacturing and packaging processes would help standardise their products and subsequently advance TM practice.

"*Everything we do revolves around money. So, we need the government to provide us with financial resources. With the financial support, we can embark on proper manufacturing and packaging processes and it will elevate the standard of TM practice*" [Participant 14, Offinso North].

To financially support service users, the majority of the study participants proposed that TM products should be included in the NHIS. They indicated that most rural residents depend solely on farming as their source of income. Therefore, they live in poverty during out of season periods. The participants believed that the inclusion of TM products in the NHIS could serve as a motivation for service users, particularly the poor to seek care at approved TM health facilities when the need arises, which will consequently improve the health of rural residents.

> "*If TM is included in the national health insurance, it would be great. Because when you come to our villages, most of the people are farmers. In Offinso North, the people are into Cocoa farming. So, there are specific times that there is money in the community. That is, during the harvesting season. After that period, you have to live in poverty until the next season. So, if someone gets sick out of season, it becomes difficult. If TM is included in the NHIS, it will help support the health of the people because TM is the common healthcare here*" [Participant 7, Offinso North].

5.4.5.2 Standardisation of regulatory policies and TM practice: Although participants were pleased with the performance of regulatory bodies, they recommended that for TM to be properly integrated into the mainstream health system, the authorised agencies would need to implement strict rules and regulations in governing TM practice. They envisaged that the creation of government-owned manufacturing sites in the various districts could aid the effective implementation of TM regulatory measures in the area of supervision, monitoring, and evaluation.

> "*The government should build manufacturing premises for the districts. So, the premise will be for the government, and they will be able to effectively implement regulatory rules, be it supervision, monitoring and evaluation*" [Participant 11, Offinso North].

5.4.5.3 Increased professional training opportunities: Clearly, some of the participants had a strong conviction that formal training of TM practitioners has a crucial role to play in delivering the best healthcare to service users and promoting TM integration. Due to this belief, they indicated that TM training institutions should be increased in order to widen the scope of TM practice in Ghana. They indicated that the expansion of TM training

institutions would grant people who are interested in the field, the opportunity to develop their skills and acquire knowledge on the practice through formal education. Participants were convinced that widening the scope of the practice would increase peoples' admiration for that field of medicine. This narrative was highly endorsed by the urban participants. Similarly, the rural participants felt that offering professional training to TM practitioners could improve integration because the country would have a pool of professional TM practitioners to complement the orthodox healthcare system.

> "*All health institutions should run a little bit of courses on TM. That way, it will widen the scope of TM training in Ghana. It will help people to appreciate the practice*" [Participant 3, Kumasi].

> "*The government should increase the schools that provide training on TM. Currently, aside KNUST, there is no other government institution that provides TM training. So, I recommend that all the universities in Ghana should mount programmes in TM so that those who are interested in it can go there and develop their knowledge and skills*" [Participant 1, Kumasi].

> "*The government can arrange to train TM practitioners who are already in the field so that at the end, we will have a pool of professional TM practitioners that they can choose from to complement the orthodox health system*" [Participant 15, Offinso North].

5.4.5.4 Improved inter-professional relationships: To address the issue of the orthodox health practitioners opposing TM usage, the participant recommended that the leaders of the TM practitioners' Council should coordinate and liaise with the Ghana Medical Council to accept the incorporation of their practice into the formal health system. They deemed the Medical Council as vocal and influential in matters relating to national health policies; therefore, they believed that the council's support would boost the government's commitment towards the integration process.

> "*The Medical Association is very vocal and are very influential when it comes to national policies. So, our leaders (TM association, TM council) should also push things and liaise with the Medical council so that the Council can accept the integration. Without the approval of the Medical Council, there is no way the government will listen to us and promote the integration*" [Participant 9, Kumasi].

5.4.5.5 Improved publicity of TM integration: All participants noted that one key issue that needs to be addressed to enhance TM integration is sensitising the public on the integration process, particularly on the existence of TM units in some government hospitals using the media as means of communication.

> "*We have to educate people that when they go to the hospital, there are orthodox medicines and TM. The issue is that, for many people, when they go to the hospital, they do not expect to receive TM but rather orthodox medicine. So, if we create awareness through posters, radio and television, people will become conscious that when they go to the hospital, they can have access to both orthodox and TM*" [Participant 8, Kumasi].

> *"….some TM practitioners are well known. They have access to the media such as the TV and radio stations. So, we the less known TM practitioners can collaborate with them to promote TM practice and its integration using the various media platforms. That way, people will know about the integration process as well as where to access integrated healthcare or approved TM services/products* [Participant 10, Offinso North].

Figure 5.1: Study participants' recommendations to foster better integration of TM into the Ghanaian health system.

5.5 Discussion

The integration of TM into the Ghanaian health system has been an issue of interest for many stakeholders including service users, orthodox medicine, and TM practitioners. The current research explored the perceptions, experiences, and recommendations of TM practitioners in the Ashanti region pertaining to the integration of TM into the Ghanaian health system using a conceptual framework for integrating TM with national health systems (Park &

Canaway, 2019). The study was founded on two constituents of the framework: health governance and financing, and health architecture. The participants' recommendations for better TM integration in Ghana is one of the study's major additions to the body of knowledge on health systems integration.

Previous studies have recounted that TM use is predominant in Africa and Asia (Oreagba et al., 2011). Researchers have cited factors such as TM aligning with cultural beliefs, effectiveness, and minimal side effects as reasons for use (Ampomah et al. 2022; Mensah & Gyasi, 2012). Such findings have been substantiated in the current study where participants mentioned that TM products are effective in treating illnesses such as fevers with minimal adverse effects. The effectiveness of TM as recounted by healthcare practitioners (Ampomah et al. 2021; Mensah & Gyasi, 2012) could be a facilitating factor in the Ghanaian integration process.

TM practitioners in this study narrated that they are more accommodating in delivering integrated care than orthodox health practitioners. Participants indicated that they adopt a more patient-centred or psychosomatic approach to healing where they focus on discussing psychosocial issues rather than focusing only on medical questions. A similar finding has been documented in a consumer-based study in the Ashanti region where service users attested to the fact that TM practitioners adopt a more compassionate approach to healthcare delivery than orthodox health practitioners do (Ampomah et al., 2022b). This implies that participants approach their clients by exploring their beliefs and fears, which they believe boosts the healthcare process. This attitude of TM practitioners might motivate service users to continue to patronise TM healthcare services irrespective of the cost of treatment and mode of delivery. The government, health practitioners, and hospital administrators should endeavour to emphasise a more patient-centred Ghanaian healthcare system.

A systematic review of the practice of integrated healthcare in Africa has reported that TM integration in most African countries is not effective (Ampomah et al., 2020). Similarly, orthodox health practitioners and hospital administrators in the Ashanti region have identified pricey TM products, poor publicity of integration, and poor service standards in the TM field as issues obstructing TM integration in Ghana (Ampomah et al., 2021). These findings are also confirmed in the current study.

The health governance and financing setup in Ghana seem to be inadequate to achieve successful TM integration because they contribute to major setbacks in the integration process. These setbacks revolve around financial constraints associated with TM regulatory practices processes and lopsided TM training opportunities for the practitioners. Although the government recognises the significant role TM plays in the Ghanaian health system and has therefore initiated its integration through the creation of the TMPC, the TM Act, and the FDA to regulate TM practice (Gyasi et al. 2017; Appiah et al. 2018; Krah et al. 2018) a previous study reported that orthodox health practitioners and hospital administrators in the Ashanti region perceived the operations of TM regulatory bodies to be appalling due to the unreliable regulation of TM practice in Ghana (Ampomah et al., 2021). In the current study, the participants even though pleased with the services of the regulatory bodies, indicated that high service fees charged by the regulatory bodies serve as an obstruction to good TM practice in Ghana. The participants stated that most rural TM practitioners do not adhere to standardised medical practice (processing, certification protocols, licensing) due to financial constraints, yet they operate within the communities. The inability of such practitioners to register their products/services exposes clients to unapproved TM products/services, which could be detrimental to their health. This finding clearly indicates that financial constraints as experienced by some TM practitioners in Ghana in getting their practice registered is a major impediment to successful TM integration.

Additionally, the traditional health system does not receive adequate support from the central government, particularly in the areas of infrastructure and financing (NHIS coverage). This finding corroborates earlier studies conducted among health systems researchers (Appiah et al., 2018), service users (Ampomah et al., 2022b), and orthodox health practitioners/health administrators (Ampomah et al., 2021). This indicates a sustainable financing scheme would be required to support TM practice in Ghana. One possible strategy would be to incorporate the traditional health system into the national health insurance scheme. For example, Switzerland's compulsory health insurance scheme covers certain complementary therapies if the practitioner is trained and licensed to practice complementary medicine (Appiah et al., 2018; World Health Organization, 2013). This approach could be adopted in Ghana.

Furthermore, some of the participants expressed desire for all TM practitioners to be professionally trained and/or acquire formal training on TM practice. This desire has also been established among orthodox health practitioners in the Greater Accra and Ashanti regions of Ghana (Ampomah et al., 2021; Kretchy et al., 2016). The current study has shown that TM practitioners who operate in urban areas tend to have more formal training compared to their rural counterparts and are therefore in a better position to provide appropriate medical advice on the use, misuse, abuse and possible negative effects of TM products. Inadequate formal education or professional training among TM practitioners particularly those in rural areas has labelled them as ignorant and less competent than their orthodox counterparts (Kwame, 2021). The imbalance in formal training leads to relational power disparity and ineffective collaboration between TM and orthodox health practitioners in Ghana and beyond (Gyasi et al., 2017; Hampshire & Owusu, 2013; Kwame, 2021; Marsland, 2007; Shuval & Mizrachi, 2004; Wamba & Groleau, 2012; Wiese et al., 2010). For example, a Tanzanian study has reported that orthodox health practitioners do not refer service users to TM practitioners because they perceive them to be uneducated and ignorant (Marsland, 2007). Similarly, Ampomah et al.

(2021) have also disclosed a weak and casual nature of cross referrals between TM and orthodox health practitioners, particularly in the Ashanti region of Ghana (Ampomah et al. 2021). Formal training for TM practitioners and quality assured regulatory processes could boost orthodox health practitioners' confidence in TM practice and improve the inter-professional referral process. Based on these findings, there is a clear indication that efforts to achieve successful integration partly rely on proper TM education, financing, and implementation of TM regulatory rules by designated bodies to guarantee the safety and efficacy of TM products in Ghana.

Relating to the Ghanaian health architecture, the study contends that, to promote TM integration in Ghana would require improved inter-professional collaboration between TM and orthodox health practitioners as well as good relational coordination of care. Improved inter-professional collaboration could focus on the establishment of an effective cross-referral system. Referral of service users between healthcare practitioners have been reported in the literature (Asante & Avornyo, 2013; Gyasi et al., 2011; Gyasi et al., 2017; Hampshire & Owusu, 2013). The nature of referral in the Ghanaian health system was described to be intra-referral system, where most of the referrals occurred among only the TM practitioners. This indicates that cross-referrals were minimal in the health system, a finding already established by Ampomah et al. (2021). A properly organised referral system might be an efficient strategy to integrate TM into the Ghanaian health system. Therefore, policy makers should take into account the inclusion of cross-referral model in Ghana's health policies and guidelines.

Even though cross-referral was reported to be weak in the health system, most of the participants demonstrated strong inclination towards the practice of TM integration in Ghana. The availability of an effective alternative healthcare treatment option within the integrated system explains why even in the absence of proper referral system and opposition from orthodox health practitioners; participants still support the incorporation of their practice into

the mainstream health system. This benefit of TM integration has also been proven in an earlier study (Ampomah et al. 2021). Clearly, positive outcomes of integration are serving as strong motivations for TM integration in Ghana.

The literature indicates that Ghana is practicing an inclusive health system (Vasconi & Owoahene-Acheampong, 2010; World Health Organization, 2002). However, the findings of the study report otherwise. This study has highlighted some challenges hindering TM integration in Ghana. These challenges include financial constraints associated with TM regulatory practice processes, poor quality of TM operational processes including shortage of approved TM products, unbalanced TM training, and poor relational coordination of care. Concerns over the poor quality of operational processes in the TM field have been recounted in some previous studies (Aziato & Antwi, 2016; Barimah, 2013; Gyasi et al., 2011; Kretchy et al., 2016). TM products are deemed unsafe and inferior due to the absence of detailed and vital information such as expiration dates, dosages, and the conditions under which the products/medicines are processed (Ampomah et al., 2021; Kretchy et al., 2016). This negative notion discourages most orthodox health practitioners from recommending TM products to service users (Ampomah et al. 2021). These issues prove that Ghana is operating a consumer-led tolerant health system with a parallel health delivery model. Public awareness and health education programs that aid dissemination of information among health practitioners and professional training of TM practitioners could enlighten and facilitate appropriate/favourable perceptions about TM and its integration into the mainstream health system (Krah et al., 2018; Kwame, 2021). Participants also emphasised the need for the provision of financial support to TM practitioners and improved inter-professional collaboration facilitated by the government and leaders of TMPC as additional ways to enhance TM integration in Ghana.

5.5.1 Implication for practice

The health goal (Sustainable development goal [SDG 3) strives to safeguard health and wellbeing for all individuals, at every stage of life (Suzan & Coulibaly, 2018). SDG 3 is

established on nine targets including the provision of universal health coverage and enhancing the healthcare industry (Chapman, 2016). The target 3.8 aims at achieving universal health coverage including access to safe, effective, quality, and affordable medicines for all (United Nations, 2015). The practice of integrating TM in Ghana is a way of directing the populace towards trained TM practitioners who apply scientific principles and standardisation in their operations (Boateng et al., 2016). Such practitioners usually operate in urban areas as depicted in this study. The availability of trained TM practitioners/approved products, improved TM practice in Ghana (Ampomah et al., 2022b), prevalent TM use (Yarney et al., 2013), coupled with its reported effectiveness could widen the range of healthcare services in the country, and serve as a positive step towards the achievement of universal health coverage. Nonetheless, unbalanced professional training between urban and rural TM practitioners in Ghana could be a major factor impeding the integration process. The activities of untrained TM practitioners in the rural areas might continue to hinder the integration process because they might cause more harm than good in the health system, thereby reversing the positive impact urban TM practitioners might have made.

Achieving the health goal in Ghana could also be delayed by the poor quality of TM operational processes/shortage of approved TM products, high cost of such products, and poor quality of relational coordination of care, which serve as barriers to effective TM integration. Strategies needed to enhance TM integration and attainment of the SDG 3 include active involvement of the Ghanaian government and policy makers in the following:

- Provision of a comprehensive health financing policy that includes both orthodox medicine and TM products.
- Investment in the health workforce through education to expose both groups of health practitioners to the basic ideologies of the two health systems. This strategy might

improve the level of formal or professional training among TM practitioners, thereby fostering better integration and achievement of the SDG 3 health goal.

- Promotion of medical research and investment in research infrastructure, particularly in the field of TM.

5.5.2 Strengths and limitations

A key strength of the current study is the use of a qualitative research approach to explore participants' perceptions, experiences, and recommendations for improved TM integration in Ghana. This study contributes to literature in the field of health systems research by highlighting the benefits of TM integration in Ghana as well as elucidating the bottlenecks in the Ghanaian health architecture and health governance/financing structures regarding the TM integration process. The study proffered possible pragmatic solutions to improve TM integration into the Ghanaian health system. The findings of this study may be useful in guiding policy makers in the review of current health policies and guidelines to enhance TM integration in Ghana. Additionally, the inclusion of participants from both rural and urban settings (Kumasi metropolis and Offinso North district) increases the transferability of the study findings. Major limitations of this study include selection bias –participants may have been people who are interested in the concept of TM integration. Also, perceptions of policy makers such as the leaders of the TMPC could have been explored.

5.6 Conclusions

This study explored the perceptions, experiences, and recommendations of TM practitioners regarding the integration of their practice into the Ghanaian formal health system. The findings of the study show that the practice of TM integration is highly acceptable among TM practitioners in the Ashanti region. However, issues such as financial constraint, unbalanced professional training opportunities, poor TM practices, and poor relational coordination of care between orthodox health practitioners and TM practitioners were identified as bottlenecks, which hampered the TM integration process. These findings clearly indicate that

the Ghanaian health system is currently operating a parallel health delivery model – in which both types of health practitioners independently deliver services within their officially defined domain of practice – rather than one where coordinated integrated interaction take place among stakeholders in the health system. Movement towards an effective integrated health system in Ghana would require better inter-professional collaboration between orthodox and TM practitioners. Future research could focus on intervention studies that address ways through which advanced integrative practice and healthier inter-professional cooperation between the two health systems could be developed in Ghana.

Contributions of Chapter 5 to thesis

The qualitative study presented in **Chapter 5** also answered **RQ3**: What are the perceptions and experiences of health practitioners and hospital administrators in the Ashanti region in relation to the benefits and barriers associated with the current practice of integrating TM into the health system? Findings from this research showed that the practice of integration has led to the availability of an effective alternative healthcare delivery system. However, the participant also reported of weak cross referral system and/or an intra-consultative model of delivery impeding the successful integration of TM. Evidently, the Ghanaian health system is a consumer-led tolerant health system with parallel healthcare delivery model. The desire to improve the practice of TM integration necessitated the unification of recommendations from the study participants, orthodox health practitioners and hospital administrators (**Chapter 6**).

Contributions of Chapters 2, 3, 4 and 5 to thesis

Generally, the gaps identified in the systematic review (**Chapter 2**) have been addressed using Ghana (Ashanti region) as the study setting (**Chapters 3, 4, and 5**). The need for active involvement of all relevant stakeholders to enhance the practice of TM integration required the development of an integrated healthcare model that could work effectively in the Ghanaian health system. To achieve this goal called for synthesise of recommendations from all the stakeholders (**Chapters 3, 4, and 5**), thereby informing the study (development of a model) in **Chapter 6**.

Chapter 6: General Discussion:

From talk to action: Developing a model to foster effective integration of traditional medicine into the Ghanaian healthcare system (Manuscript ID: JIM-09-2022-RE-0675)

6.1 Chapter Overview:

Abstract: This research assessed the experiences of stakeholders and the efficacy of TM integration into the Ghanaian health system using Ashanti Region as a focal point. Elements of an integrative health delivery model including philosophies/values, structure, process, and outcome were utilised for quality assessment of the integrated health system in Ghana. Each element clearly depicted that Ghana is currently not running a coordinated health practice model, thus making it a tolerant, rather than an inclusive, health system. Therefore, the primary purpose of this Chapter is to discuss the development of a new and appropriately customised model that could enhance the practice of integrated healthcare in Ghana.

The developed model has flexibility and far-reaching applicability in other African countries because they share similar socio-cultural and economic characteristics. As such, governments and health practitioners could adapt this model to improve the practice of integrated healthcare in their specific settings. Hospital administrators and health system researchers could also adapt the model to investigate, monitor the progress and efficacy of integrated healthcare practices within their settings. This might enable the evaluation of the association between the practice of TM integration and health outcomes in a given population.

6.2 Introduction

The Ghanaian traditional health system is vibrant because it is perceived to be accessible, effective and an alternative healthcare option provider to approximately 70% of the population (Yarney et al., 2013). In spite of the availability of orthodox medicine, evidence suggests that the TM system contributes substantially to Ghana's health system and service delivery.

TM continues to be a treatment option to many people due to the dissatisfaction with, and perceived ineffectiveness of the orthodox medicine treatment platform (James et al., 2018; Mensah & Gyasi, 2012; Sutherland & Verhoef, 1994). TM is also appealing due to its alignment with indigenous health philosophies, values, and beliefs (Bishop, Yardley, & Lewith, 2007; James et al., 2018; Krah et al., 2018). However, the improper delivery and use of TM can be detrimental to the health of users (Oreagba et al., 2011). The curtailing of inappropriate medical practices among TM practitioners and protecting the health of service users would require effective monitoring, evaluation and integration of TM practices into the national health systems.

The integration of TM into national health systems could be established at the consumer, service delivery, and health system levels (Park & Canaway, 2019). The type of TM integration practiced (integrative, inclusive, tolerant) can influence the level of incorporation into a country's formal health sector and its delivery model (parallel, consultative, coordinated, inter-disciplinary, and integrative) (Boon, Verhoef, O'Hara, & Findlay, 2004; Gaboury et al., 2010; Park & Canaway, 2019; World Health Organization, 2002).

The Park & Canaway (2019) conceptual framework for integrating TM into national health systems highlights the relationship between health system types and health delivery models. The population/contextual characteristics, consumer experiences, health architecture, health governance, and financing policies components of the framework were adapted and used in the current thesis. These elements have also been used to investigate TM integration in Asian and

Western Pacific national health systems (Park & Canaway, 2019). The framework acknowledges that countries have different socio-cultural, political, and economic characteristics that can either promote or hinder the practice of integrated healthcare. Such differences make it impossible to have a one-size-fits-all framework for TM integration. Therefore, it proposes that countries must develop their own individualised and specific strategies to achieve effective TM integration within their settings. The current study reported in this thesis fulfills this recommendation by summarising the answers to this key research question: How can TM practice integration be made effective and sustainable in Ghana? To provide answers, the framework for integrating TM into national health systems was employed in the Ghanaian setting to assess the perceptions and experiences of service users/community members (Chapter 3) health practitioners, and hospital administrators regarding TM integration (Chapter 4 and 5). The participants' voices were further used to identify recommendations for better integration of TM into the formal health system of Ghana (Chapter 6). Having explored the recommendations that could work within the Ghanaian setting, the findings of this thesis aim to develop a model that would promote effective TM integration in Ghana. Specifically, the thesis:

- Presents an overview of the current practice of TM integration in Ghana.
- Outlines the enablers and barriers to TM integration in Ghana
- Discusses the elements of the integrative health delivery model in relation to TM integration and determines the exact type of health system type/delivery model practiced in Ghana.
- Presents a model to foster effective integration of TM into the Ghanaian health system.

6.3 The current practice of TM integration in Ghana

A systematic review in **Chapter 2** examined the effectiveness of integrated health systems in Africa and revealed that the practice of TM integration has not been successful due

to inadequacies in the implementation of current health policies. Such inadequacies include weak political commitment to incorporate TM products/services in health financing schemes and failure to provide documents to systematically direct/regulate the implementation of the intervention. Therefore, it was recommended and justifiable that a focus on health systems barriers should assess stakeholders' perceptions and experiences to offer solutions that can enhance the practice of integrated healthcare. **Chapters 3, 4 and 5** of this thesis fulfilled this recommendation by assessing the perceptions, experiences, and recommendations of health service users, health practitioners, and hospital administrators in relation to the benefits and barriers associated with the current practice of TM integration in Ghana using a mixed methods research design. The conceptual framework for integrating TM into national health systems developed by Park & Canaway (2019) served as the philosophical bedrock for these studies. The framework identified four key components (population/contextual characteristics, consumer experiences, health governance/financing, and health architecture) that affect the incorporation of TM into national health systems. Findings reported in **Chapters 3, 4 and 5** disclosed that population and contextual factors favour the integration process. However, weak health governance/financing structure and poor health architecture have impeded the process. An outline of the enablers and barriers to TM integration in Ghana and their positions within the framework was presented in Table 6.1.

6.3.1 Outline of enablers and barriers to TM integration in Ghana guided by framework for TM integration

Table 6.1 summarises the factors promoting and/or impeding TM integration in Ghana from the perspectives of stakeholders (service users, health practitioners, hospital administrators) and their alignment with the conceptual framework for integrating TM into national health systems. As presented earlier, TM use is prominent in Ghana. The vast use of TM is considered an enabler to the integration process because refined, beneficial, and cultural use of TM is seen as one of the contextual elements required to promote the successful practice

of integration (Park & Canaway, 2019). Chapters 3, 4 and 5 have shown that Ghanaians believe in the effectiveness of TM and their belief systems, norms, traditions and way of life favour the use of TM, which explains why its integration was highly encouraged.

The entrenchment of TM in the Ghanaian culture and the empathetic attitude of its practitioners inspire people to continue to use TM products/services. This positive account has been established in Chapters 3 and 5 where TM practitioners adopted a more empathetic attitude in delivering health services to their clients and the people appreciated their involvement in the care process and are satisfied with the services received. This attribute of the TM field increased stakeholders' preference for the implementation of the integration intervention.

However, highly priced TM products offered at formal/integrated health settings is a deterrent to patronage of such products at these settings (**Chapter 3 and 4**), thereby defeating the purpose of introducing the TM field into the mainstream health system. Directly related to overly priced TM products is the issue of shortage of approved TM products due to skewness in the procurement of medicine within the Ghanaian health system. Chapter 5 showed that people do not only struggle to pay for the products but also experience delay in receiving healthcare due to shortage of products. The unavailability of certified TM products tend to create discontinuities in the care process, which usually led to service users disengaging with the integrated system; hence, a hindrance to the effective incorporation of TM practice into the formal health structure.

In addition, unbalanced professional training on TM has resulted in poor service delivery in the TM sector, which has widened the communication/interaction gap between the two health practitioners, created a weak cross referral practice, and disjointed healthcare delivery system triggering the practice of consumer-led integration in Ghana. These health governance and financing issues undermine the practice of TM integration in Ghana.

In this thesis, the key health architectural concern reported is the low publicity about TM integration. This has caused poor visibility of the existence of TM clinics in some selected government hospitals within the health setting. The poor visibility of such facilities has contributed to low patronage of TM products/services from approved health facilities leading to inefficiency.

Table 6.1: Enablers and barriers to TM integration in Ghana guided by framework for TM integration.

Enablers	Barriers	Position in the adapted Framework
The popular use of TM, Effectiveness of TM products		Population/contextual characteristics
The cordial relationship between TM practitioners and service users.	Low knowledge about TM units in selected public hospitals among service users	Consumer experience, Health architecture
Service users high preference for TM integration	Exorbitant prices of TM approved products in formal health settings.	Consumer experience, Health governance, and financing
Positive report among users of integrated healthcare services.	Low patronage of integrated health services due to the cost and lack of knowledge.	Consumer experience
High knowledge about TM integration among health practitioners and hospital administrators.		Health architecture
	Exclusion of TM products from the National Health Insurance Scheme (NHIS).	Health governance and financing
	Unbalanced professional training on TM.	Health governance and financing
	Weak communication between health practitioners [weak cross-referral system].	Health architecture
	Low publicity about TM integration.	Health architecture
	Poor TM service standards – processing, certification, standardisation.	Health architecture, Health governance, and financing

	The absence of a document/manual to direct TM integration.	Health architecture
	Shortage of approved TM products in integrated health facilities	Health governance, and financing

To vividly understand the Ghanaian health system and ascertain the actual health system practiced necessitated the amalgamation of the factors promoting and/or impeding the practice of TM integration. The experiences of key stakeholders as reported in **Chapters 3, 4 and 5** have been discussed in relation to the elements of the integrative health delivery model to demonstrate the type of health system practiced in Ghana with its associated healthcare delivery model(s).

6.4 Elements of integrative health delivery model and TM integration in Ghana

Boon et al. (2004) described different types of health delivery models that include parallel, consultative, coordinated, inter-disciplinary, and integrative models of health practice. The main difference between these models is the degree of collaboration between the various health system stakeholders, particularly the health practitioners and service users. A well-established integrative health system embraces an inter-disciplinary and holistic model of a non-hierarchical merger of TM and orthodox health systems, that offers a client-centred and unified range of health services (Boon et al., 2004; Wiese et al., 2010; World Health Organization, 2002). An inclusive health system implements a more coordinated approach to healthcare delivery. In contrast, the parallel delivery model is associated with tolerant health systems, where service users usually experience consumer-led integration (Park & Canaway, 2019) because TM and orthodox health practitioners deliver health services in their formally defined settings of practice (Barimah, 2013; Boon et al., 2004). Healthcare delivery models are developed around the four vital elements of integrative health practices of philosophies, structure, process, and outcome (Boon et al., 2004; Gaboury et al., 2010; Hollenberg, 2006). These elements are individually discussed in relation to TM integration to determine the actual

health system type and delivery model practiced in Ghana from the perspectives of stakeholders.

6.4.1 Philosophies of TM and orthodox health systems

The philosophy element describes the extent to which integrative healthcare is offered to service users from a practical and/or theoretical viewpoint (Gaboury et al., 2010). The practice of an integrative health system is characterised by the exposure of health practitioners to a growing diversity of healthcare ideologies because of the increased engagement of health practitioners from other fields of medicine (Boon et al., 2004). Stakeholders in the Ghanaian health system have offered a variety of philosophies, views, opinions, and realities regarding TM, the orthodox health system, and a merger of the two health systems. The majority of these philosophies relate to evidence-based health practices, healing methods, interactions between users and health practitioners, and the effectiveness of treatments (Kwame, 2021).

The traditional health system as practiced in Ghana incorporates both formal acquisition of knowledge on TM (Boateng et al., 2016) and informal folk wisdom or ideas passed on from generations practices (Abel & Busia, 2005; Ampomah, Malau-Aduli, Seidu, Malau-Aduli, & Emeto, 2022a; Barimah, 2013). Service users, hospital administrators, and TM practitioners perceived TM to be an ancient form of treatment in Ghana that is effective in treating illnesses with insignificant side effects (Mensah & Gyasi, 2012). Other studies have reported that TM is rooted in the culture of Ghanaians (Abel & Busia, 2005; Krah et al., 2018) and its practitioners employ a patient-centred approach for healthcare delivery.

Orthodox health practitioners on the other hand, believed that the orthodox health system introduced in Ghana during the colonial period, is based on the accumulation of information through scientific methods (Gyasi et al., 2017). Therefore, they perceived orthodox medicine as an appropriate treatment option for service users. Most orthodox health practitioners argued that TM practitioners were ineffective and could potentially cause more harm than good in the health system. For example, it has been reported that some orthodox

health practitioners had no regards for TM practice, hence they discouraged service users from utilising TM services/products (Ahenkan et al., 2019; Campbell-Hall et al., 2010; Gyasi et al., 2017; King & UNAIDS, 2006). Clearly, orthodox and TM practitioners had opposing views of each other regarding the two health systems in terms of concepts, methods of practice, philosophies, and principles (King & UNAIDS, 2006). The differences in health practitioners' perceptions and philosophies tend to undermine TM integration in Ghana because the practitioners adhere strongly to their beliefs and perceptions rather than collaborating and complementing each other to offer a continuum of integrative healthcare services to users (Asante & Avornyo, 2013). The opposing philosophies underlying their practice tend to promote consumer-led integration, thereby making the Ghanaian health system and delivery model more of a tolerant/parallel system rather than an integrative/inter-disciplinary delivery model.

6.4.2 Structure

The structure element focuses on the socio-political framework of integrative health system and assesses the extent of approval among stakeholders in the health system (Hollenberg, 2006). It further explains the composition of the health team – types of entities, the specific roles they play, and availability of structure/framework (Gaboury et al., 2010). Complex structures are associated with integrative health systems due to the presence of diverse views. The complexity of an integrative health system makes it necessary for a structure or protocol to be developed to aid and direct the course of interaction between stakeholders or members of the health team (Boon et al., 2004). It has been reported that orthodox health practitioners in Ghana tend to question how and where TM practitioners would fit in the formal health system (Asante & Avornyo, 2013). This implies that the Ghanaian health system could benefit from the existence of a guiding document to describe the structure of the practice of TM integration to facilitate coordinated interaction between the stakeholders within the integrated health system. However, such a guiding document or protocol does not exist to direct the

practice of integration in Ghana (Boateng et al., 2016). This has resulted in a shortage of approved TM products in the integrated health system as well as minimal interactions between the TM and orthodox health practitioners because they execute their duties mostly within their formally defined scope of practice, which is a typical characteristic of a parallel healthcare delivery model.

In addition, when collaborative efforts between TM and orthodox health practitioners increases, the hierarchical structure reduces, and the development of mutual trust and respect between and among stakeholders, particularly the health practitioners develops (Ray, 1998). Inclusive health system appears to be the mid-way between tolerant and integrative health systems, established on coordinated/facilitated interactions (Park & Canaway, 2019). Countries that practice inclusive health systems aim to achieve an integrative health system in the future (Kwame, 2021; Vasconi & Owoahene-Acheampong, 2010). Therefore, such countries thrive to implement interventions that support maximum collaboration aimed at fostering trust and respect between health practitioners, service users, and other stakeholders (Asante & Avornyo, 2013). Given the intervention implemented to integrate TM into the mainstream health system, it is expected that the two health practitioners would perform their duties in an atmosphere of mutual trust and respect. Unfortunately, orthodox health practitioners in Ghana mistrust the services of TM practitioners and consider their activities illegitimate (Ahenkan et al., 2019). It has also been documented that practitioners in the mainstream health system usually object to the idea of being in the same facilities with TM practitioners, where the TM practitioners are charged with the task of prescribing and dispensing drugs (Asante & Avornyo, 2013). Evidently, the orthodox health practitioners support a parallel rather than an interdisciplinary model of health service delivery. This attitude of the orthodox health practitioners reinforces the practice of a tolerant health system in Ghana.

6.4.3 Process

Process as an element of integrative health delivery model explains how stakeholders - health practitioners and service users communicate between and among themselves within the health system (Gaboury et al., 2010; Hollenberg, 2006). It explores the degree of professional practice, such as the interaction between health practitioners leading to coordinated healthcare (Hollenberg, 2006). This implies that as a country transitions from a tolerant to an integrative health system, communication (for example, interactions through referrals) between and among stakeholders in the health system improves (Boon et al., 2004). Increased efforts to reach mutual agreement and respect for differing viewpoints in the health system also define a properly integrated health system. Efforts to achieve mutual agreement and respect lie with health practitioners upholding similar standards in healthcare practice. For example, orthodox health practitioners follow well-defined medical principles and codes of practice in executing their duties (Dadzie, Aziato, & Aikins, 2017). However, it is reported that some TM practitioners in Ghana do not employ acceptable medical principles in their practice (Ahenkan et al., 2019; Aziato & Antwi, 2016). Therefore, health practitioners in the mainstream health sector do not regard TM practice as an appropriate health system, hence are not prepared to refer service users to its practitioners (Gyasi et al., 2017). TM practitioners in the Ashanti region have also confirmed the least form of interaction exists between them and orthodox health practitioners; however, there is an intra-referral system in place. This weak and unclear interaction between the health practitioners signifies that the stakeholders are at different positions along the continuum of healthcare delivery models. Thus, as orthodox health practitioners and service users are at the parallel level of health practice, TM practitioners find themselves at the intra-consultative level. The different positions of the health practitioners clearly show a defect in the practice of TM integration in Ghana.

Moreover, the recognition of service users as valuable members of the health team is an exclusive feature of effective health systems (Harrison, Pablo, & Verhoef, 1999). This

peculiarity is missing in the Ghanaian integrated health system because service users' inability to effectively communicate their use of TM products to orthodox health practitioners has been reported in the literature (Gyasi et al., 2017). Health service users have reported verbal abuses and refusal of healthcare at orthodox health facilities in the case of presenting signs of TM use (Gyasi et al., 2017; Krah et al., 2018). It has also been disclosed that orthodox health practitioners often prevent service users from accessing TM even if the services are offered at specialised TM units/centres. This demonstrates that health service users in Ghana are often treated as recipients of care rather than being part of the health team, a common practice in a non-integrative/tolerant system with a parallel model of healthcare delivery.

6.4.4 Outcome

In the long run, health systems integration leads to the cost-effectiveness of health services and products (Way, Jones, & Busing, 2000). For example, in Mongolia, inpatient TM services are funded by health insurance, and policy makers anticipate widening the scope of the insurance to cover outpatient services to improve equitable access to health services (World Health Organization, 2017). Interestingly, the reverse happens in Ghana. Ghana is one of the WHO African member states that has included some TM in its national essential medicine list (World Health Organization, 2019). In spite of the inclusion, the products are not covered under national health insurance (Ahenkan et al., 2019). The exclusion of the products from the national health has led to the high cost of approved TM products in the health system (Aziato & Antwi, 2016) which negatively influences the integration process.

Overall, the practice of TM integration has not been effective in Ghana because the prevalence of TM usage does not tally with the proportion of people who have interacted with the integrated health system (Boateng et al., 2016). Low patronage of integrated health services indicates that the Ghanaian health system is heavily associated with consumer-led integration. The practice of consumer-led integration is because of the lack of knowledge about the existence of integrated health facilities; hence, service users integrate health services by

autonomously initiating and accessing services of orthodox and TM practitioners. Consumer-led integration is a prominent feature in a tolerant health system and a parallel health delivery model.

6.4.5 Pictorial presentation of Ghana's current practice of TM integration from stakeholders' perspective.

Figure 6.1 presents the current practice of TM integration in Ghana from the perspectives of stakeholders (service users, health practitioners, and hospital administrators). The figure shows that weak health governance, financing structure, and poor health architecture have negatively influenced the experiences of stakeholders. Thus, the various stakeholders are positioned at different levels along the continuum of the health delivery models resulting in undesirable outcomes within the health system (Figure 6.1).

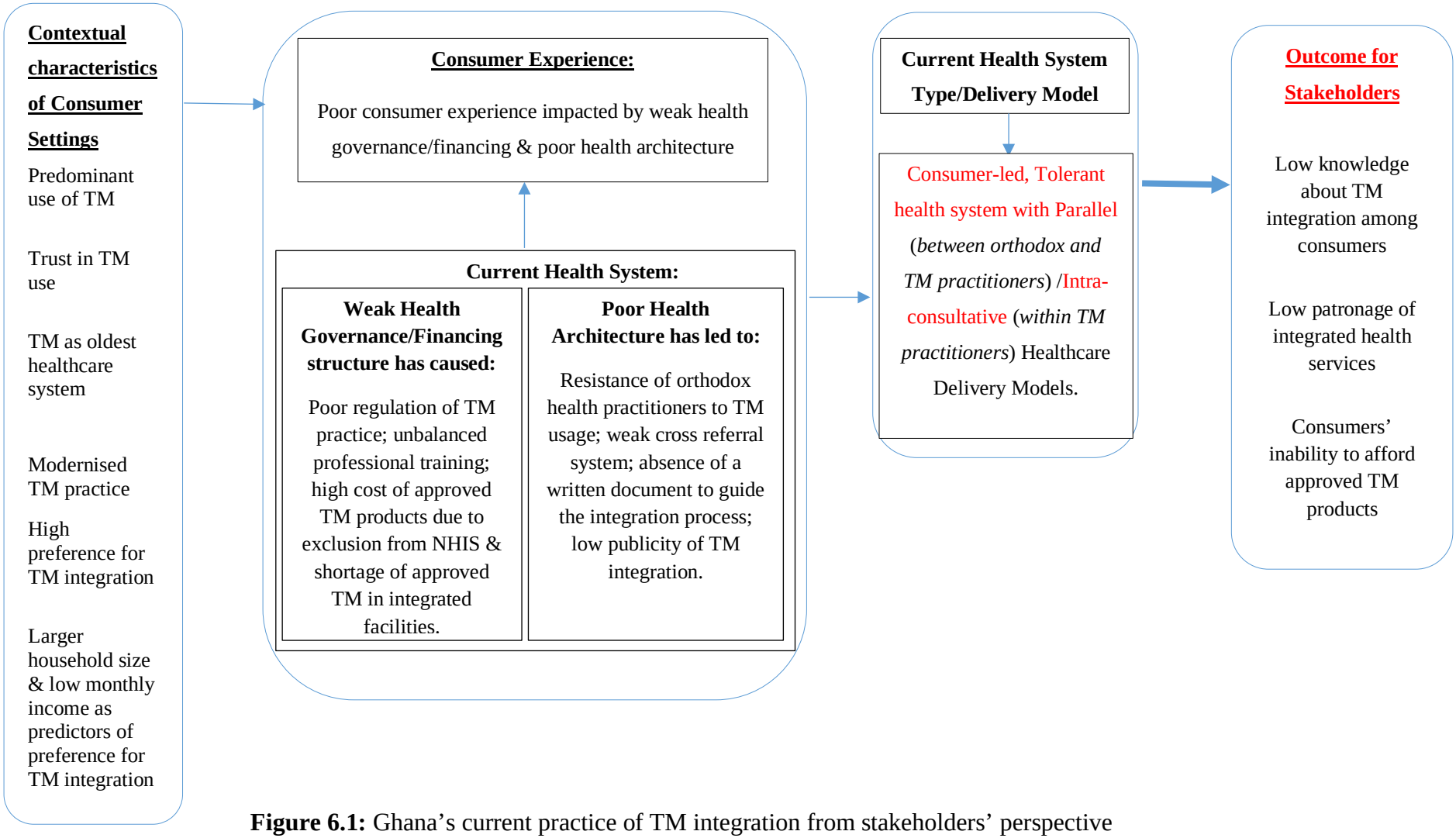

Figure 6.1: Ghana's current practice of TM integration from stakeholders' perspective

6.5 The 'SHIFT' model to foster effective TM integration in Ghana

Although numerous barriers plague the practice of TM integration in Ghana, stakeholders still believed the intervention could be improved. Service users, health practitioners and hospital administrators proposed that improving TM practice and its integration would require the modification and implementation of several health interventions or strategies. These strategies relate mainly to policies, education/training, and communication within the health system. Specifically, these stakeholders proposed the need for **s**tandardisation of TM practice, **h**igh publicity about TM integration, **i**ncreased inter-professional relationships and integrated health facilities, **f**inancial support for users and TM practitioners, and **t**raining on TM for all health practitioners (**'SHIFT'**) as strategies required to foster effective integration of TM into the Ghanaian health system. Health practitioners and hospital administrators believed that the standardisation of TM regulatory policies and practices to promote its integration should be characterised by the licensing of TM practitioners, quantification of TM products, and the provision of evidence-based information for service users and health practitioners (Ahenkan et al., 2019. In general, the stakeholders perceived that a greater political commitment toward the integration process could heighten publicity about the intervention and enhance its visibility in the health system.

To stakeholders, an increased healthy inter-professional relationship between the two health practitioners could incite an inter-disciplinary approach to healthcare delivery (Asante & Avornyo, 2013). In addition, they felt that pulling existing resources to secure wider service coverage (increasing the number of integrated health facilities) could promote equitable access to integrated health services, which is an important component of universal health coverage.

Equity in health accessibility involves financial security (World Health Organization, 2016). Therefore, service users, health practitioners, and hospital administrators in Ghana's Ashanti region believed that promoting cost-effective TM products would require expanding the national health insurance to include TM products. Quality and safe TM services and

products are crucial to strengthening TM integration and this could be achieved through evidence based traditional medicine practice. Evidence based medicine practice is the thorough unambiguous, and reasonable use of modern, and best clinical evidence in making decisions about the care of service users (Masic, Miokovic, & Muhamedagic, 2008). Evidence based practice incorporates clinical experiences and service users' values with the best available research information. It is a concept, which aims to intensify the use of high-quality clinical research in healthcare decision-making (Masic et al. 2008). Therefore, supporting TM practitioners financially to upgrade their practice (in terms of education, research, production) was recommended as a significant strategy for integration intervention in Ghana (Chapters 3 and 5).

Ghanaian stakeholders regarded trained and experienced TM practitioners as being critical to supporting a healthy inter-professional relationship and aiding the delivery of integrated, client-centred health services (Asante & Avornyo, 2013). Hence, training on TM should be categorised into two. First, making sure that TM practitioners have proper training, adequate medical knowledge, and are certified. Secondly, by expanding the educational base of TM and using TM training as a tool to ensure that orthodox and TM practitioners understand and respect the complementary nature of the services they deliver (Ahenkan et al., 2019; Asante & Avornyo, 2013; Kwame, 2021).

In summary, standardised TM practice, higher publicity, increased inter-professional relationships coupled with financial security, and TM training for all health practitioners could make the Ghanaian health system integrative with an inter-disciplinary approach to health delivery (that is, facilitated collaborations between all the relevant stakeholders). An improved, integrative and inter-disciplinary Ghanaian health system could increase knowledge on the practice of integration, result in cost-effective TM products and increase patronage of integrated

health services. Figure 6.2 presents a model to foster the effective integration of TM into the Ghanaian health system.

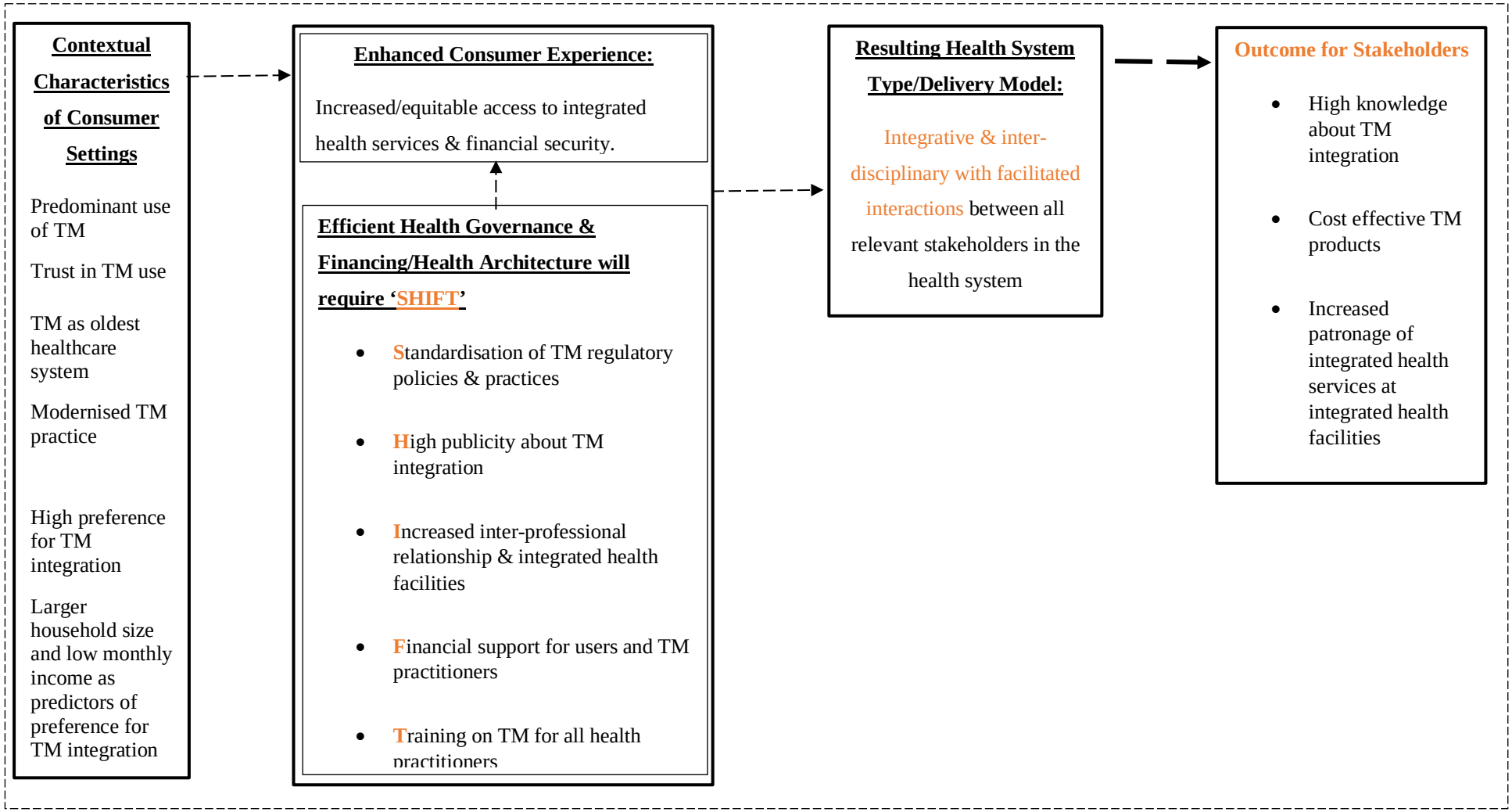

Figure 6.2: 'SHIFT' - A conceptual model to foster effective TM integration in Ghana

6.6 Implications for the practice of TM integration in Ghana

Service users' engagement in, and responsibility for, decisions revolving around healthcare are increased when health systems are effectively integrated (Boon et al., 2004). If service users understand how their involvement differs as integration intensifies, it could position them to access health services that match their perceived health needs. Community members/service users in the Ashanti region appreciated their engagement in the care process. However, orthodox health practitioners interfered with users' decisions relating to the type of health service they should seek (**Chapters 4 and 5**). Orthodox health practitioners were able to influence users' decisions regarding TM use because of the users' non-exposure to appropriate health information. However, the opposite occurs in Canada (Gaboury et al., 2010), implying that increasing the patronage of integrated health services would require service users to be well informed/know their roles in the integrated health system to make informed decisions concerning their health.

Health practitioners play varied roles in the health system and acknowledging such roles can help practitioners decide the appropriate integration approach they desire (Kwame, 2021; Ray, 1998). Park and Canaway (2019) identified interactive and group skills as preconditions for effective integration. However, a report of a workshop on integration found these qualities to impede achieving successful integration (Boon et al., 2004). Orthodox health practitioners in the Ashanti region agreed with the report of Park and Canaway (2019), since they believed that advantages associated with TM integration could only be maximised if complementary roles (roles peculiar to the various health practitioners) were identified and TM practice was incorporated in all domains of healthcare, particularly research and education (**Chapter 4**). Practitioners believed that effective TM integration would lead to a greater involvement of both health practitioners, culminating in a positive effort towards achieving universal health coverage in Ghana.

Through integration, hierarchical authority in the health system diminishes, while the essence of structures and processes to improve communication/deliberations increases (Boon et al., 2004). However, Block (2007) clarified that the ability to incorporate different roles into a hierarchy to support an all-inclusive means of healthcare delivery is critical to promoting the success of integration rather than the non-existence of a hierarchical structure (Block, 2007). Both arguments show that the role of health administrators is crucial to the successful implementation of the integration intervention and highlights the need for diversity in health system administration. Unfortunately, hospital administrators who practiced within integrated health facilities in the Ashanti region of Ghana reported their inability to provide and implement directional signs to guide TM integration, which obstructed the success of the practice of TM integration (**Chapter 4**). Evidently, administrators within integrated health facilities would need to acquire different administrative skills to offer the needed leadership for effective TM integration.

Furthermore, instead of relying on a single integration approach, Ghanaian legislators should explore approaches that include a variety of methods for various types of treatments and/or service users (Kwame, 2021). This would help determine the approach that best serves Ghanaians as well as provide the opportunity to compare health outcomes and expenditures for similar service users across a variety of approaches. It is expected that countries would adopt flexible integration approaches, particularly if the service users are given the option to choose the type of healthcare that best meets their health needs (Boon et al., 2004). However, ensuring such flexibility in the Ghanaian health system might be difficult to practice.

6.7 Conclusion

This thesis discusses the quality of the practice of TM integration in Ghana using the elements of an integrative health delivery model as described in Boon et al. (2004). Ghana's health policies do not provide a clear path for the merger of the two health systems; thereby affecting the effectiveness of the practice of TM integration. The nature of Ghana's health

architecture, health governance, and financing structures promote parallel/intra-consultative models of health delivery making it a tolerant, rather than an inclusive, health system.

Stakeholders recommended strategies that might revamp the practice of TM integration in Ghana. These recommendations were used to develop a model that could foster effective TM integration. Given that African countries share similar socio-cultural and economic characteristics, governments and health practitioners within African settings could adapt this model to improve the practice of integrated healthcare in their various settings. Hospital administrators and health system researchers could also adapt the model to investigate and record the progression and effect of the practice of integrated healthcare within their settings. This might enable the evaluation of the association between the practice of integrated healthcare and health outcomes in a given population.

6.8 Bringing the research together

With the systematic review conducted in **Chapter 2**, the effectiveness of integrated health systems in Africa was assessed and methodological, theoretical, and population gaps identified. Thus, necessitating the use of a mixed-methods research design and a conceptual framework in **Chapter 3** to examine the knowledge, preference, and experiences of community members/service users regarding TM integration into the Ghanaian health system. In **Chapters 4 and 5**, a conceptual framework was used in the qualitative research approach to explore the perceptions and experiences of health practitioners and hospital administrators in relation to the benefits and barriers associated with the current practice of TM integration in Ghana.

C**hapter 6** generally discussed and described the actual type of health system practiced in Ghana using the elements of the integrative healthcare delivery model and further illustrated the position of the various participants (community members/service users, health practitioners, and hospital administrators) along the continuum of health delivery models. The chapter also presented a suitable model for improving the practice of TM integration in Ghana. Table 6.2

summarised key findings of the various chapters and their contribution to the thesis and alignment with the conceptual framework for integrating TM.

Table 6.2: A summary of key chapter findings and their contribution to the thesis and alignment with the conceptual framework for TM integration

Chapter	Key findings	Contribution to the Thesis* and alignment with the framework
2	The systematic review demonstrated that: • The formulation and implementation of health policies were the key strategies employed to incorporate TM into formal health systems in Africa. • Integrated health systems in Africa are not effective due to low levels of awareness, usage, satisfaction, and acceptance of the integration intervention. • Awareness about TM integration varied among service users and health practitioners, with most service users not conversant with the practice of TM integration in their various countries. • Low usage of the integrated services was associated with weak referral systems and the nonexistence of TM integration guiding documents. • Satisfaction and acceptance were low among orthodox health practitioners but high among service users in the reviewed studies. • The review also established a methodological gap, where most of the included studies employed either qualitative or quantitative research methods. The theory/philosophical basis to explain the practice of TM integration was largely omitted in reviewed studies.	Chapter 2 addressed **RQ 1**: *How effective are integrated health systems in Africa, particularly in Ghana?* The results of this systematic review offered a baseline understanding of the nature and effectiveness of TM integration in Africa including Ghana. The knowledge gap discovered in the systematic review led to the formulation of research questions 2, 3, and 4, which have been addressed in Chapters 3, 4, 5, and 6. The review also necessitated the use of a theoretical framework and the inclusion of hospital administrators as study participants.

3	The first primary study, which was a mixed-methods study conducted in the Kumasi metropolis and Offinso North district found that: • Community members/service users are not knowledgeable about the presence of TM units in some selected public hospitals in the Ashanti region causing low usage of integrated health services. • Knowledge of TM integration is strongly influenced by sex, marital status, household size, and residence status of the study participants. Males and urban resident participants are more conversant with the practice of integrated healthcare. • The low usage of integrated healthcare in the Ashanti region was due to low publicity about the integration intervention and a weak cross-referral system. • Health service users who interacted with the integrated health system reported gratifying results. • Community members/service users proffered some recommendations to improve TM integration in Ghana to maximise benefits associated with the integration practice.	Chapter 3 addressed **RQ 2**: *What are the knowledge, preference, and experiences of Ashanti region community members about the integration of TM into the health system?* The aim of this chapter focused on assessing the experiences of Ashanti region community members/service users regarding TM usage and its integration into the Ghanaian formal health system. The first primary study of this thesis established the basis for the current practice of TM integration in Ghana. The findings of this study helped modify interview questions for Chapters 4 and 5. Integration framework: Population/contextual characteristics and consumer experience components of the framework for TM integration were adapted and used in this study.
4	The second primary study - Qualitative data collection from orthodox health practitioners and hospital administrators in the Kumasi metropolis and Offinso North district discovered that: • Health practitioners and hospital administrators regardless of their places of operations knew of the existence of TM units in government hospitals. They cited the availability of options in healthcare delivery as a benefit of the practice of TM integration.	Chapter 4 answered **RQ 3**: *What are the perceptions and experiences of health practitioners and hospital administrators in the Ashanti region about the benefits and barriers associated with the current practice of TM integration in Ghana?* The findings of this study supported the results of Chapter 3, where community members/service users felt that TM is effective; however, they believe that some of the practitioners

	• Similar to findings reported in chapter 3, orthodox health practitioners also deemed the referral system within the Ghanaian health system to be weak (poor inter-professional collaboration). • The major reasons accounting for the weak referral system from the perspectives of orthodox health practitioners and hospital administrators are poor governance and service standards associated with the TM practice. • Given the barriers identified, the orthodox health practitioners and hospital administrators suggested ways through which the integration process might be improved.	do not apply appropriate medical principles in their operations. This led to exploring the experiences of TM practitioners regarding the integration of their practice into the formal health system as reported in Chapter 5. Integration framework: Health architecture, health governance and financing components of the framework served as the philosophical basis for this study.
5	The last primary study - This qualitative study among TM practitioners has confirmed that: • The main advantage of the practice of integration in Ghana is the provision of an effective alternative healthcare delivery, which has led to improved patient outcomes. This report of TM practitioners has been reflected in Chapter 3, where community members/service users who have accessed integrated health services expressed a fulfilling outcome. • The participants also established that the practice of TM integration is heavily characterised by an intra-referral system, a report that is substantiated in Chapter 4. • TM practitioners in the Kumasi metropolis and Offinso North district view poor relational coordination of care as a key barrier to the effective practice of TM integration in Ghana.	Chapter 5 also answered **RQ 3**: *What are the perceptions and experiences of health practitioners and hospital administrators in the Ashanti region regarding the benefits and barriers associated with the current practice of TM integration in Ghana?* The findings of this study supported the results in Chapters 3 and 4, by explaining the low patronage of integrated health services among service users and the weak nature of professional collaboration between the orthodox and TM practitioners. At this stage of the thesis, collective information on how to address the gaps in the current practice of TM integration is required. Therefore, recommendations proffered by the study participants were used in developing a model suitable for the

	• The participants recommended strategies that might enhance the relationship between the two health practitioners and improve professional collaborations and the overall state of the practice of TM integration in Ghana.	Ghanaian health system. This model has been presented in Chapter 6. Integration framework: The framework's health architecture, health governance, and financing components served as the theoretical basis for this study.
6	This discussion paper presented the important strategies needed to boost the quality of the practice of TM integration in Ghana from the perspectives of the study participants. These strategies focus on the modification of policies to: • Promote standardisation of the TM practice, • Create awareness about the practice of TM integration through increased publicity, • Foster inter-professional collaborations between the two health practitioners, • Increase the number of integrated health facilities to improve geographical accessibility to integrated health services, • Provide financial support to stakeholders, • Support good communication and relationships by expanding TM training. These strategies might advance integrative healthcare practice and healthier inter-professional cooperation could be developed, leading to positive and robust effects/outcomes.	Chapter 6 addressed **RQ 4**: *How can the practice of TM integration be made effective and sustainable in Ghana?* The findings from the three primary studies were merged to project the overall nature of TM integration in Ghana. Participants' recommendations were integrated leading to the designing of a TM integration model. Integration framework: Findings relating to all components of the framework – population/contextual characteristics, consumer experiences, health architecture, health governance, and financing were presented. These findings were further discussed in the light of elements of integrative health systems to demonstrate the position of the various study participants and project the actual health system practiced in Ghana.

**Components of the conceptual framework for TM integration: Population/contextual characteristics – geographical settings, demographic, and psychosocial characteristics. Consumer experiences – healthcare accessibility, preference/perceptions, knowledge about integration, satisfaction. Health architecture - health practitioners' knowledge about integration, communication, quality of healthcare delivery, and service standards. Health governance and financing – regulatory bodies and policies, financial accessibility of health systems including health insurance cover, training.

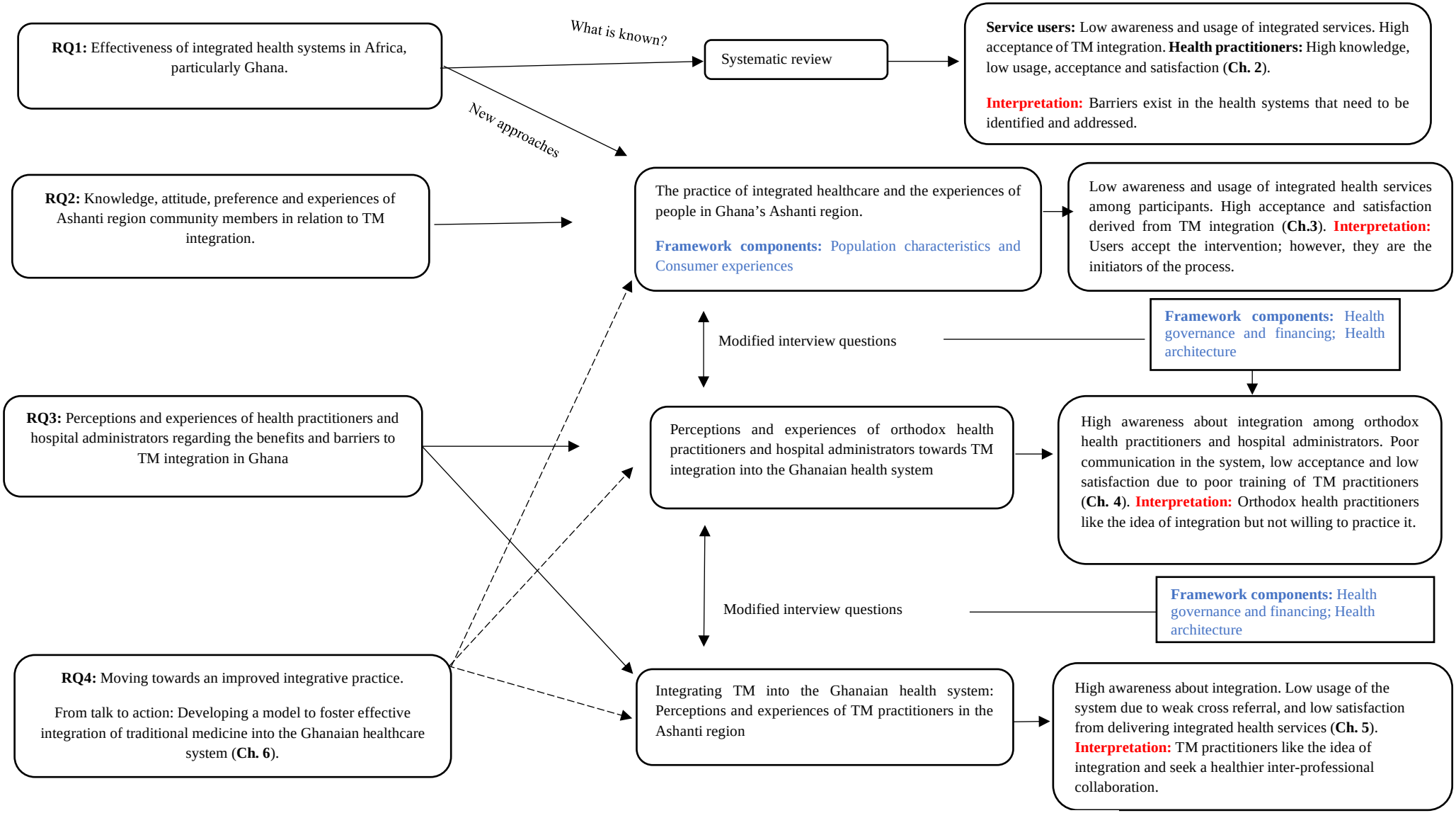

Figure 6.3: Conceptual framework of the thesis

6.9 Strengths and limitations of the research

The major strengths of this research are that it has unravelled and facilitated an increased understanding of the practice of TM integration in Ghana from the perspective of different key stakeholders. It is the first Ghanaian study to adopt a mixed-methods approach and a theoretical framework in assessing the practice of integrated healthcare, thus extending the body of knowledge by echoing the voice of hospital administrators. The findings offer a deeper understanding of the contextual, governance, and financing factors that hinder or promote TM integration. The selection of two different geographical settings enhances the generalisability, transferability and reliability of the research findings, implying that the research could be replicated in African settings because of similar socio-cultural and economic characteristics.

However, selection bias and the exclusion of the experiences of leaders of the Traditional Medicine Practice Council (TMPC) are limitations of this research. In that, the study participants could be individuals who have a keen interest in the concept and practice of TM integration. In addition, participants had to recall their experiences; therefore, the study findings could be affected by over-or under-estimation of the concept/practice of TM integration studied in this thesis.

Chapter 7: Conclusions and Recommendations

7.1 Chapter Overview

Chapter 7 summarises the key findings of the study and emerging recommendations therein. The research primarily focused on assessing the enablers and barriers, effectiveness, perceptions, knowledge, attitudes, preferences, and experiences of community members, health practitioners and hospital administrators in the Ashanti region regarding the integration of TM into the Ghanaian health system for an efficient and sustainable health delivery.

7.2 Summary of the study findings

7.2.1 Effectiveness of integrated health systems in Africa

The systematic review conducted in this study showed that the practice of an integrated health system has not been effective in Africa. Healthcare practitioners were reported to exhibit low usage, acceptance and satisfaction levels with the integrated health system. Similarly, usage of TM products/services from integrated facilities was also low among service users. However, consumers of healthcare services were receptive to the integration process. Evidently, barriers existed in the implementation of the integrated health system. These barriers needed to be identified and addressed. This thesis performed this role using Ghana (Ashanti region) as the study setting.

The review indicated a lack of a mixed-methods research approach to the study of TM integration in Ghana. Studies that originated from Ghana employed either qualitative or quantitative research methods only in achieving the study objectives. Hence, there was the need to conduct a multi-methods study to ascertain the effectiveness of the practice of TM integration in Ghana.

The review also demonstrated a philosophical gap. In that, the Ghanaian included studies failed to use theories to support their work. This thesis filled this gap and extended the scope of previous studies by adapting a TM integration framework to understand the perceptions, knowledge, preference, and experiences of different stakeholders such as

community members (health service users), health practitioners, and hospital administrators (the group mostly overlooked in integrated health studies in Ghana).

7.2.2 Knowledge, preference, and experiences of community members regarding TM integration into the health system.

Population/contextual characteristics/Consumer experiences:

Findings from the sequential explanatory mixed methods data analysis revealed that a key facilitator of the preference, efficacy and integration of TM by community members/service users, is the compassionate attitude of TM practitioners, which in turn, results in high level of trust and usage by many people in the Ashanti region. Despite the high preference for TM integration into the healthcare system as dictated by monthly household incomes and sizes, most people were unaware of the existence of TM clinics within public hospitals in the Ashanti region, hence only few cross-referrals and lower than expected patronage. Nonetheless, the few integrated healthcare service users among the community members expressed their satisfaction and high preference for integration-an essential enabling ingredient for incorporation of TM into the Ghanaian health delivery system. Therefore, to remove the barrier of inadequate access to, and practice of, a holistic integrated healthcare system, an active and far-reaching awareness campaign among community members is required.

7.2.3 Perceptions and experiences of health practitioners and hospital administrators in relation to benefits and barriers associated with the current practice of TM integration in Ghana.

Health governance and financing/Architecture:

The qualitative data analyses showed that health practitioners and hospital administrators were aware of the practice of TM integration (existence of TM regulatory bodies, policies, and integrated health facilities). However, the narrow financial strategic focus of the national health insurance scheme just on the orthodox health system, narrow institutional governance base for upholding proper medical practices within the TM field, and unbalanced professional training for both health practitioners were sources of discontent. Some aspects of

the Ghanaian health governance and financing structure have negatively influenced the health architecture as determined by the weak cross-referral (between orthodox and TM practitioners) or intra-consultative (among TM practitioners) healthcare delivery, pricey TM products and consequently low usage of integrated health services.

Regardless of these challenges, health practitioners disclosed the availability of an effective alternative health delivery system as the key benefit of the practice of TM integration. Hospital administrators on the other hand identified improvement in healthcare databases or records as another benefit of integrated healthcare where they explained that the integration intervention has made it possible to collect data on service users, particularly TM users, leading to an improvement in the services to meet their health needs.

To conclude, this thesis makes significant contributions to understanding the current practice of TM integration in Ghana using an adapted conceptual framework for TM integration into national health systems. The adapted framework emphasises that factors such as population/contextual characteristics, consumer experiences, health architecture, health governance, and financing structures influence the practice of TM integration. The relevance of integrating TM into the formal health system is emphasised, which are novel findings in health systems research in Ghana. The results of this research also highlight some gaps in the Ghanaian health governance, financing, and architectural structures, which have negatively affected the experiences of community members/service users. Taking together the experiences of community members/service users, health practitioners, and hospital administrators in the Ashanti region, one can conclude that the current practice of TM integration in Ghana is more of a consumer-led tolerant health system rather than an inclusive system because these stakeholders find themselves at the parallel and intra-consultative levels of healthcare delivery or practice.

7.2.4 Recommendations for improving TM integration in Ghana

Based on the model developed from the findings of this study, the following recommendations for policy makers, TM regulatory bodies and TM practitioners are suggested in the bid to promote an effective integration of the two health systems in Ghana.

7.2.4.1 Policymakers: Ghanaian policymakers should adopt an improved communication approach to intensify awareness of the establishment of TM clinics in some government-owned health facilities. Heightening awareness about the existence of integrated health facilities could yield high usage of integrated health services. Directly related to improved communication strategy is widening the scope of the Ghanaian health insurance scheme to include certified TM products. The inclusion of certified TM products in the health cover could edge health service users to seek TM-related healthcare services/products from approved centres (integrated health facilities), hence eliminating consumer-led integration. Chung et al. (2013) have also identified the inclusion of TM products in national health coverage as an effective strategy to improve TM integration and promote healthcare equity in countries (Chung et al., 2013).

Policymakers must expand TM training institutions in Ghana. The number of educational institutions that run TM programmes should increase and TM courses should be introduced in medical schools. In addition, the creation of integrated health facilities must be extended to rural areas, so that, the few health facilities in the rural areas could have TM clinics situated within them to eliminate geographical barriers to access to integrated health services.

7.2.4.2 TM regulatory bodies: Similar to the recommendation to policymakers, TM regulatory agencies, particularly the FDA must execute their duties in a rigorous manner. It is essential for the agencies to adopt a more decentralised approach to its activities, with sub-offices set up around the country to enhance the TM practice (usually in processing and packaging) and market surveillance. This could be achieved if health policies (TM policies) are modified to grant the agencies more room to perform their duties.

7.2.4.3 TM practitioners: In addition to policymakers and TM regulatory bodies, TM practitioners need to improve the conditions under which TM products are processed and offer adequate health information concerning their products. The leaders of TM practitioners and the TMPC must ensure that their members are adhering to standard medical practices. An upgrade in TM practitioners' operations coupled with healthy interaction/dialogue between the TMPC and the Ghana Medical Council might create a harmonious relationship between the two councils, leading to improved professional collaboration. The acceptance of the integration intervention by the Ghana Medical Council could encourage the government to be more politically committed to the implementation of the intervention.

7.2.4.4 Orthodox health practitioners: To address the issue of non-disclosure of TM use, orthodox health practitioners need to adopt a more sensitive and culturally appropriate approach when interacting with service users. Asking about TM use in a compassionate and empathetic manner is essential, as the study findings indicate that this can encourage service users to disclose their symptoms, health concerns and actions already taken (including TM use). This can lead to more accurate diagnosis, better care, and positive health outcomes. Furthermore, orthodox health practitioners should be willing to facilitate the access of patients to TM services and products from approved sources. If a patient expresses interest in TM and trusts its efficacy, orthodox practitioners should assist the patient to find certified TM clinics or integrated health facilities. This can enhance the functionality of the Ghanaian integrated health system.

It is important to educate orthodox and TM practitioners about the respective disciplines and clinical approaches of each other. Hence, orthodox health practitioners should advocate for the incorporation of TM in the medical school curriculum. This would enable them to become familiar with the traditional health system and to interact effectively with their TM counterparts.

A successful collaboration between the two health practitioners could facilitate the integration process.

7.3 Direction for future research

It is necessary to assess the longevity and usefulness of existing health policies, particularly those regarding TM practice. Future research could focus on exploring the relevance of existing TM policies and the nature of health administration in Ghana to uncover gaps relating to policy formulation, implementation structure, and stakeholders' involvement in the policy formulation. This could be accomplished by conducting a study exploring the experiences of policymakers and heads of regional health directorates in Ghana regarding the practice of TM integration (relevance of existing policies relating to the TM practice and its integration, the mode of implementation of such policies, and the involvement of relevant stakeholders).

Additionally, it is essential to assess the actual impact of the practice of an integrated health system on managing infectious diseases in Ghana. This could be a nationwide study to investigate the contributions or otherwise of the integration intervention in dealing with the prevalence of infectious diseases such as malaria. Thus, identifying whether the practice of integration is helping reduce the prevalence of certain infectious diseases through proper TM practices or creating a clinical problem such as drug resistance.

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Appendices

Appendix A – Ethics Approvals

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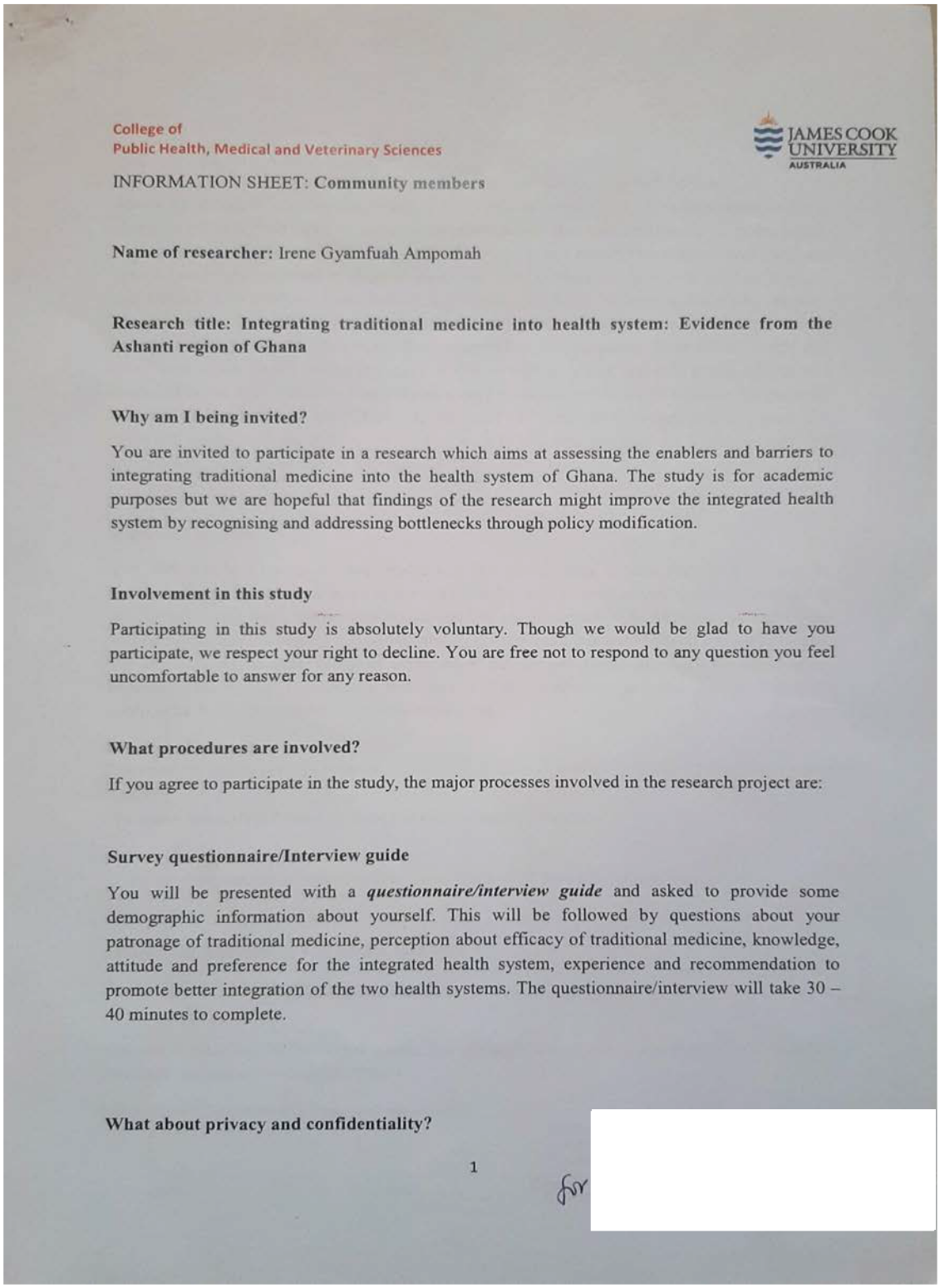
Appendix B – Information Sheets and Informed Consent Forms

B.1 – Information Sheet (Community members)



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INFORMATION SHEET: **Community members**

Name of researcher: Irene Gyamfuah Ampomah

Research title: Integrating traditional medicine into health system: Evidence from the Ashanti region of Ghana

Why am I being invited?

You are invited to participate in a research which aims at assessing the enablers and barriers to integrating traditional medicine into the health system of Ghana. The study is for academic purposes but we are hopeful that findings of the research might improve the integrated health system by recognising and addressing bottlenecks through policy modification.

Involvement in this study

Participating in this study is absolutely voluntary. Though we would be glad to have you participate, we respect your right to decline. You are free not to respond to any question you feel uncomfortable to answer for any reason.

What procedures are involved?

If you agree to participate in the study, the major processes involved in the research project are:

Survey questionnaire/Interview guide

You will be presented with a ***questionnaire/interview guide*** and asked to provide some demographic information about yourself. This will be followed by questions about your patronage of traditional medicine, perception about efficacy of traditional medicine, knowledge, attitude and preference for the integrated health system, experience and recommendation to promote better integration of the two health systems. The questionnaire/interview will take 30 – 40 minutes to complete.

What about privacy and confidentiality?

1

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Any information you give will be kept confidential; the information will be used strictly for academic purposes (study only). The thesis or articles will use collective responses to questions and will NOT disclose names or personal details that may be traced back to the person who gave the information. Again, any individual who is not part of the research team will not have access to the information obtained from you. The answers you give will be recorded on a paper which does not have your name or any details which can be used to trace your identity. The consent form which has your signature or thumb print on it will not be added to the survey instruments and will be destroyed five years after the research. Data (field notes and questionnaires) collected during the study would be kept in a lock and safe filling cabinet in a locked office at JCU. The files would be password protected and securely saved in the personal folder of the researcher on the JCU server. The data will be stored for a period of five years and discarded completely per JCU protocol. We want to reassure you that the responses you will provide will not be accessible to anyone outside the study team.

Risks and benefits

You will not be exposed to any health risk for participating in this survey. You may be uncomfortable responding to some of the questions but as discussed earlier, you have the right to decline answering any question that makes you feel uncomfortable. The responses you will offer will be useful for interpreting and understanding the nature of integrated health system in Ghana. We shall ensure confidentiality of information but cannot assure any leak of information. However, the survey instruments and files will not have any personal details; therefore, confidentiality of your participation will be ensured.

Conflict of interest
The research has no conflict of interest
Funding
The entire research is funded by James Cook University, Australia

If you have any concerns regarding the ethical conduct of the study, please contact:

Human Ethics, Research office

James Cook University, Townsville, Qld 4811

Phone: (07) 4781 5011 (ethics@jcu.edu.au)

You can also contact **Nana Abena Apatu**, the administrator of the Ghana Health Service Ethics Review Committee on [redacted]

Who Should I contact if I have any questions?

[redacted]

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If you have any question about the study, please contact Irene Gyamfuah Ampomah and /or Dr. Theophilus Emeto, whose contact details are provided below

Principal Investigator Details:

Irene Gyamfuah Ampomah

College of Public health, Medical and Veterinary Sciences, James Cook University

Email: irene.ampomah@my.jcu.edu.au

[redacted]

Primary Supervisor Details:

Dr. Theophilus Emeto

College of Public Health, Medical and Veterinary Sciences; James Cook University

Email: theophilus.emeto@jcu.edu.au

[redacted]

ROLE(S) OF THE PRINCIPAL INVESTIGATOR

- Preparation, conduct and administration of the research project in compliance with applicable laws and regulations and institutional policy governing the conduct of good ethical research.
- Development of the research proposal, literature review and the written work (thesis chapters and publication)
- Data collection, analysis and management.

[redacted]

B.2 – Information Sheet (Health Practitioners and Hospital Administrators)

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INFORMATION SHEET:**Health practitioners and hospital administrators**

Name of researcher: Irene Gyamfuah Ampomah

Research title: Integrating traditional medicine into health system: Evidence from the Ashanti region of Ghana

Why am I being invited?

You are invited to participate in a research which aims at assessing the enablers and barriers to integrating traditional medicine into the health system of Ghana. The study is for academic purposes but we are hopeful that findings of the research might improve the integrated health system by recognizing and addressing bottlenecks through policy modification.

Involvement in this study

Participating in this study is absolutely voluntary. Though we would be glad to have you participate, we respect your right to decline. You are free not to respond to any question you feel uncomfortable to answer for any reason.

What procedures are involved?

If you agree to participate in the study, the major processes involved in the research project are:

Interview (interview guide)

You will be interviewedusing an ***interview guide***and you will be asked to provide some demographic information about yourself. This will be followed by questions about your knowledge about the integrated health system, experiencewiththe integration of traditional medicine(in terms of risk, benefits, opportunities, barriers),nature of health delivery in Ghana, communication within the integrated system and your recommendation in relation to the practice of integrated health system in Ghana. The interview will take 30 – 40 minutes to complete.

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What about privacy and confidentiality?

Any information you give will be kept confidential; the information will be used strictly for academic purposes (study only). The thesis or articles will use collective responses to questions and will NOT disclose names or personal details that may be traced back to the person who gave the information. Again, any individual who is not part of the research team will not have access to the information obtained from you. The answers you give will be recorded on a paper which does not have your name or any details which can be used to trace your identity. The consent form which has your signature or thumb print on it will not be added to the survey instruments and will be destroyed five years after the research. Data (field notes and questionnaires) collected during the study would be kept in a lock and safe filling cabinet in a locked office at JCU. The files would be password protected and securely saved in the personal folder of the researcher on the JCU server. The data will be stored for a period of five years and discarded completely per JCU protocol. We want to reassure you that the responses you will provide will not be accessible to anyone outside the study team.

Risks and benefits

You will not be exposed to any health risk for participating in this survey. You may be uncomfortable responding to some of the questions but as discussed earlier, you have the right to decline answering any question that makes you feel uncomfortable. The responses you will offer will be useful for interpreting and understanding the nature of integrated health system in Ghana. We shall ensure confidentiality of information but cannot assure any leak of information. However, the survey instruments and files will not have any personal details; therefore, confidentiality of your participation will be ensured.

Conflict of interest

The research has no conflict of interest

Funding

The entire research is funded by James Cook University, Australia

If you have any concerns regarding the ethical conduct of the study, please contact:

College of
Public Health, Medical and Veterinary Sciences

JAMES COOK UNIVERSITY AUSTRALIA

Human Ethics, Research office

James Cook University, Townsville, Qld 4811

Phone: (07) 4781 5011 (ethics@jcu.edu.au)

You can also contact **Nana AbenaApatu**, the administrator of the Ghana Health Service Ethics Review Committee on

Who Should I contact if I have any questions?

If you have any question about the study, please contact Irene Gyamfuah Ampomah and /or Dr. Theophilus Emeto, whose contact details are provided below

Principal Investigator Details:

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Primary Supervisor Details:

Dr. Theophilus Emeto

College of Public Health, Medical and Veterinary Sciences; James Cook University

Email: theophilus.emeto@jcu.edu.au

Tel:

ROLE(S) OF THE PRINCIPAL INVESTIGATOR

- Preparation, conduct and administration of the research project in compliance with applicable laws and regulations and institutional policy governing the conduct of good ethical research.
- Development of the research proposal, literature review and the written work (thesis chapters and publication)
- Data collection, analysis and management.

B.3 – Informed Consent Form (Community Members)

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INFORMED CONSENT: Community Members

PRINCIPAL INVESTIGATOR: Irene Gyamfuah Ampomah
PROJECT TITLE: Integrating traditional medicine into health system: Evidence from the Ashanti region of Ghana.
COLLEGE: College of Public Health, Medical and Veterinary Sciences

I understand the aim of this research is to **"assess the enablers and barriers to integrating traditional medicine into health system of Ghana".** I consent to participate in this project, the details of which have been explained to me, and I have been provided with a written information sheet to keep.

I understand that my participation will involve answering a **questionnaire / interview guide.** I agree that the researcher may use the results as described in the information sheet.

I acknowledge that:

- Any risks and possible effects of participating in the ***survey/questionnaire/interview*** have been explained to my satisfaction.
- Taking part in this study is voluntary and I am aware that I can stop participating in the study at any time without explanation or prejudice. I can also withdraw any unprocessed data I have provided.
- Any information I give will be kept strictly confidential/anonymous and that no names will be used to identify me with this study without my approval

Please tick (✔) to indicate consent

I consent to complete a questionnaire / interview guide Yes ☐ No ☐

Participant's signature: …… OR Thumb print: ……..	Date:

[redacted]

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AUSTRALIA

PERMISSION TO RECORD INTERVIEWS

I request permission to audio record the interviews and assure you that the recorded interviews will be password protected and kept confidential. Do you agree that the interviews should be recorded?

Yes ☐ No ☐ Please tick (✓)

Participant's signature: …… OR Thumb print: ……	Date:

B.4 – Informed Consent Form (Health practitioners and Hospital Administrators)

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Public Health, Medical and Veterinary Sciences

JAMES COOK UNIVERSITY AUSTRALIA

INFORMED CONSENT:Health practitioners and hospital administrators

PRINCIPAL INVESTIGATOR: Irene Gyamfuah Ampomah
PROJECT TITLE: Integrating traditional medicine into health system: Evidence from the Ashanti region of Ghana.
COLLEGE: College of Public Health, Medical and Veterinary Sciences

I understand the aim of this research is to **"assess the enablers and barriers to integrating traditional medicine into health system of Ghana".** I consent to participate in this project, the details of which have been explained to me, and I have been provided with a written information sheet to keep.

I understand that my participation will involve being interviewed using an**interview guide** and I agree that the researcher may use the results as described in the information sheet.

I acknowledge that:

- Any risks and possible effects of participating in the ***survey/interview***have been explained to my satisfaction.
- Taking part in this study is voluntary and I am aware that I can stop participating in the study at any time without explanation or prejudice.I can also withdraw any unprocessed data I have provided.
- Any information I give will be kept strictly confidential/anonymous and that no names will be used to identify me with this study without my approval.

Please tick (✓) to indicate consent

I consent to complete an interview guide Yes ☐ No ☐

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AUSTRALIA

PERMISSION TO RECORD INTERVIEWS

I request permission to audio record the interviews and assure you that the recorded interviews will be password protected and kept confidential. Do you agree that the interviews should be recorded?

Yes ☐ **No** ☐ Please tick (✓)

Participant's signature: …… OR Thumb print: ……..	Date:

Appendix C – Study Instruments

C.1 – Survey Questionnaire (Community Members)

Integrating Traditional Medicine into health system: Evidence from the Ashanti region of Ghana	
Please read and answer the following questions carefully. Your candid responses are needed to guarantee the reliability of this study. Please make sure you answer all the questions. Please, you are expected to choose (✓) only one appropriate response. **Traditional medicine (TM):** 'The use of plant seeds, berries, roots, leaves, bark, flowers for medicinal purposes'.	
Contextual Characteristics	
SECTION 1: Patronage of TM	
1.1 How do you perceive your health status?	1. ☐ Very good 2. ☐ Good 3. ☐ Average 4. ☐ Poor 5. ☐ Very poor
1. On average, how often do you fall sick in a year?	1. ☐ Very frequently 2. ☐ Frequently 3. ☐ About 2-3 times 4. ☐ Only once 5. ☐ Rarely/Never
1.3 Which medical care do you usually seek when sick?	1. ☐ Orthodox medicine 2. ☐ TM 3. ☐ Spiritual healing 4. ☐ Other (please, specify)……
1.4 Have you ever used TM? (By TM, I mean the use of plant seeds, berries, roots, leaves, bark, and flowers for medicinal purposes) (**If No, skip to Q2.5 to 2.9)**	1. ☐ Yes 2. ☐ No
1.5 What was the reason for using TM?	1. ☐ Closeness to me/accessibility 2. ☐ Affordability/Less costly 3. ☐ More effective 4. ☐ In line with my religion 5. ☐ In line with my customs and practices 6. ☐ Other……
1.6 How often do you use TM?	1. ☐ Always/Whenever sick 2. ☐ Sometimes 3. ☐ Once in a while 4. ☐ Rarely/Never

1.7 How do you use TM?	1. ☐ First choice treatment 2. ☐ Traditional to orthodox medicine 3. ☐ Complementary to orthodox medicine 4. ☐ Other (please, specify)……
1.8 Do you self-prescribe TM?	1. ☐ Yes 2. ☐ No
1.9 In which way(s) do you use TM?	1. ☐ Prevention of Illness 2. ☐ Treatment of illness 3. ☐ Promotion of health 4. ☐ Other (please, specify)……
2.0 Do you use TM for your child (ren)?	1. ☐Yes 2. ☐ No
2.1 Which of the following describe way(s) you have obtained TM?	1. ☐ Prescribed by TM practitioner 2. ☐ Prescribed by orthodox health practitioner (doctor, pharmacist etc.) 3. ☐ Prescribed by a relative 4. ☐ Over the counter traditional remedies 5. ☐ Collected from garden/farm/backyard 6. ☐ Other (please, specify)……
2.2 Do you ask your physician about TM when you want to use them?	1. ☐ Yes 2. ☐ No
2.3 Do you ask the pharmacist about TM when you want to use them?	1. ☐ Yes 2. ☐ No
2.4 How many times have you used TM in the last three months?	1. ☐ Very frequently 2. ☐ Frequently 3. ☐ About 2-3 times 4. ☐ Only once 5. ☐ Rarely/Never
2.5 How many times have you used orthodox medicine in the last three months?	1. ☐ Very frequently 2. ☐ Frequently 3. ☐ About 2-3 times 4. ☐ Only once 5. ☐ Rarely/Never
2.6 Which medical care system do you find less expensive?	1. ☐ TM 2. ☐ Orthodox Medicine 3. ☐ Indifferent
2.6 (b) Please, elaborate on your answer from (Q 2.6) above	
2.7 Which medical care system do you find more readily available?	1. ☐ TM 2. ☐ Orthodox medicine 3. ☐ Indifferent

2.7 (b) Please, elaborate on your answer from (Q 2.7) above	
2.8 Which medical care system do you find more culturally acceptable?	1. ☐ TM 2. ☐ Orthodox medicine 3. ☐ Indifferent
2.8 (b) Please elaborate on your answer from (Q 2.8) above	
2.9 For each of the following groups of people, indicate those who mostly use TM	1. ☐ Males ☐ Females 2. ☐ Formally educated people ☐ Non formally educated people 3. ☐ Poor ☐ Rich 4. ☐ Rural ☐ Urban 5. ☐ Southern Ghanaians ☐ Northern Ghanaians 6. ☐Christians ☐ Non-Christians
3.0 Do you seek health advice from TM practitioners?	1. ☐ Yes 2. ☐ No
3.1 In a nutshell, what is your motivation for using TM?	1.☐ More effective 2.☐ Affordability/Less expensive 3.☐ Close to me/Accessibility 4.☐ Less side effects 5.☐ In line with my religion 6.☐ Past experience with its use 7.☐ Other (specify)……

SECTION 2: Perception about the efficacy of TM	
3.2 Do you think TM is effective in the treatment of diseases/illnesses?	1. ☐ Yes 2. ☐No
3.2 (b) If Yes, name some of the diseases/illnesses effectively treated with TM	
3.3 Comparing TM to orthodox medicine, which one do you consider more effective?	1. ☐ TM 2. ☐ Orthodox medicine 3. ☐ Indifferent
3.4 Generally, how would you rate the efficacy of TM?	1. ☐ Very effective 2. ☐ Effective 3. ☐ Moderate 4. ☐ Ineffective
3.5 In generally, how would you rate the safety of TM?	1. ☐ Very safe 2. ☐ Safe 3. ☐ Somehow safe 4. ☐ Very unsafe
3.6 In your opinion, what makes TM safe for consumption?	

3.7 Have you ever experienced any side effect(s) with the use of TM? (**If No to Q1.4, Skip to Q3.8**)	1. ☐ Yes 2. ☐ No
3.8 Have you ever experienced any adverse side effect(s) with the use of orthodox medicine?	1. ☐ Yes 2. ☐ No
3.9 It is popularly argued that the use of TM is dangerous to human health. To what extent do you agree with this statement?	1. ☐ Strongly agree 2. ☐ Agree 3. ☐ Disagree 4. ☐ Strongly disagree
3.9 (b) What is/are the reason(s) for your answer in (Q 3.9) above?	
SECTION 3: Knowledge about integrated health system	
4.0 Do you have knowledge about the incorporation of TM into health system? (**If No to Q4.0, skip to Q 4.4**)	1. ☐ Yes 2. ☐ No
4.0 (b) If Yes to (Q 4.0), how did you learn about it?	1. ☐ Orthodox health practitioner 2. ☐ TM practitioner 3. ☐Television/Radio 4. ☐Friend/relative 5. ☐Other, please specify…
4.1 Is there a license for TM practice in Ghana health system?	1. ☐ Yes 2. ☐ No
4.2 Are there laws to regulate TM in Ghana?	1. ☐ Yes 2. ☐ No
4.3 Are you aware of the introduction of TM directorate in some hospitals in Ghana/Ashanti region?	1. ☐ Yes 2. ☐ No
4.3 (b) If Yes (Q 4.3), please give examples of such hospitals	
4.4 Are there laws to regulate TM practice in developed countries?	1. ☐ Yes 2. ☐ No
4.5 What kind of health delivery is practiced in Ghana?	1. ☐ Orthodox health care only 2. ☐ Traditional health care only 3. ☐ Integrated but traditional is informal 4. ☐ Formalised integrated health system
4.5(b) What type of health care do people in this district normally access?	1. ☐ People seek health care from hospitals 2. ☐ People seek health care from pharmacy shops 3. ☐ People visit hospitals but compliment with TM 4. ☐ People consult faith healers when sick
4.6 Is there a difference between orthodox and traditional health care?	1. ☐ Yes 2. ☐ No
4.6 (b) If Yes (Q 4.6) what is the difference?	
SECTION 4: Attitude (Regulation of practicing and safety of TM)	
4.7 Should TM practitioner have a degree in this profession?	1. ☐ Yes 2. ☐ No

4.8 Should TM practitioner be certified from the Ministry of Health?	1. ☐ Yes	2. ☐ No
4.9 Does the production and selling of TM products need to be regulated by Ministry of Health?	1. ☐ Yes	2. ☐ No
5.0 Should TM container have a license and registration number?	1. ☐ Yes	2. ☐ No
5.1 Should TM container be labelled with the name of active ingredients, required dose and instruction on when to use?	1. ☐ Yes	2. ☐ No
5.2 Should TM container be labelled with the expiry date?	1. ☐ Yes	2. ☐ No
5.3 Should TM container have a warning of possible side effects and interaction with other medications?	1. ☐ Yes	2. ☐ No
5.4 Should TM container have a clear note if the medicine is approved by FDA as a safe medication?	1. ☐ Yes	2. ☐ No
5.5 Do you think the pharmacist can give useful advice to you if you want to use TM?	1. ☐ Yes	2. ☐ No
SECTION 5: Preference for Integration		
5.6(a) Do you prefer TM integration into the formal health system?	1. ☐ Yes	2. ☐ No
5.6(b) Please, elaborate on your answer (Q5.6a)		
5.6 Do you like to visit a licensed and qualified TMP within the health setting?	1. ☐ Yes	2. ☐ No
5.7 Would integrating TM practice into health system make you feel safer to use TM?	1. ☐ Yes	2. ☐ No
5.8 Do you think a physician can monitor your health better if he/she knows the kind of TM you are using and who prescribed it?	1. ☐ Yes	2. ☐ No
5.9 Do you want your physician to give you advice about safe use of TM?	1. ☐ Yes	2. ☐ No
6.0 Do you want your physician to follow up when you are using TM to avoid any side effect?	1. ☐ Yes	2. ☐ No
6.1 Which health system do you think would be suitable for managing Covid-19 health problem?	1. ☐ TM 2. ☐ Orthodox medicine 3. ☐ Integrated health system	
6.1 (b) Please, give reasons for your answer in (Q 6.1) above		
Consumer Experiences		
SECTION 6: Experience in relation to the integrated health system		
6.2 Have you ever been referred by a medical doctor to a TM practitioner?	1. ☐ Yes	2. ☐ No
6.3 Have you ever been referred by a TM practitioner to a medical doctor/ hospital/clinic?	1. ☐ Yes	2. ☐ No
6.4 Have TM ever been prescribed for you at the hospital/clinic or by a medical doctor?	1. ☐ Yes	2. ☐ No

6.5 Have orthodox medicine(s) ever been prescribed for you by a TM practitioner?	1. ☐ Yes 2. ☐ No
6.6 Do you support the integration of TM into formal health system?	1. ☐ Yes 2. ☐ No
6.6 (b) Please, give reasons for your response in (Q6.6) above	
6.7 Are there risks associated with TM integration into the formal health system?	1. ☐ Yes 2. ☐ No
6.7 (b) Please, give reasons for response in (Q 6.7) above	
6.8 Are there barriers hindering the integration process?	1. ☐ Yes 2. ☐ No
6.8 (b) Please, give reasons for your answer in (Q 6.8) above	
6.9 Are there opportunities, which can promote TM integration into the health system?	1. ☐ Yes 2. ☐ No
6.9 (b) Please, give reasons for your response in (Q6.9) above	
SECTION 7: Improvement in the practice of TM/integration	
7.0 Which solution do you recommend for the improvement of the practice of TM/integration?	1. ☐ Promote scientific research into the safety and efficacy of TM 2. ☐ Advocate for sustainable use of medicinal plants 3. ☐ Provision of license to TM practitioners 4. ☐ Creating TM directorate in health facilities 5. ☐ Specified protocol for posting of TM practitioners to health facilities 6. ☐ Hospitals stocking their pharmacies with TM 7. ☐ Other (please, specify)……
7.1 Do you support the formal training of TM practitioners for the improvement of their practices/integration? (**If No to Q 7.1 Skip to Q 7.4**)	1. ☐ Yes 2. ☐ No
7.2 What type of training do you support?	1. ☐ Classroom educational training 2. ☐ Practical training by experienced TM practitioners 3. ☐ University level training/education 4. ☐ Training abroad 5. ☐ Other (please, specify)……
7.3 What area do you think is important in the training of TM practitioners?	1. ☐ Dosage and side effects of TM

	2. 1 Branding and packaging of TM 3. ☐ Hygienic preparation and administration of herbal medicine 4. ☐ Revelation of indigenous knowledge 5. ☐ Sustainable utilisation of medicinal plants 6. ☐ Other (please, specify)……
SECTION 8: National health insurance coverage	
7.4 Have you subscribed to the national health insurance scheme? (**If No, answer Q7.5&7.5b only**)	1. ☐ Yes 2. ☐ No
7.5 Apart from the national health insurance scheme, do you have any other form of health insurance?	1. ☐ Yes 2. ☐ No
7.5 (b) If Yes, what kind of insurance is it?	
7.6 Why did you subscribed to the national health insurance scheme?	
7.7 Do you still use TM, having subscribed to the national health insurance scheme? (**If No to Q1.4 skip to Q 9.1)**	1. ☐ Yes 2. ☐ No
7.7 (b) Please, give reasons for your answer to question (Q 7.7) above	
7.8 Are you able to renew your national health insurance status on a consistent basis?	1. ☐ Yes 2. ☐ No
7.8 (b) Please, give reasons for your answer to question (Q7.8) above	
Population Characteristics	
SECTION 9: Background characteristics	

9.1 Sex	1. ☐ Male 2. ☐ Female	9.2 Age	_____
9.3 Residential status	1. ☐ Urban (Kumasi metropolis)		2. ☐ Offinso North
9.4 Name of community			
9.5 Marital status	1. ☐ Never married 2. ☐Married 3. ☐ Separated 4. ☐Divorced 5. ☐Widowed		
9.6 Level of education	1. ☐ No formal education 2. ☐ Primary 3. ☐ Middle/Junior High School (JHS)		

	4. ☐ Secondary/Senior High School 5. ☐ Tertiary
9.7 Employment status	1. ☐ Trading 2. ☐ Farming 3. ☐ Government employee 4. ☐ Artisan 5. ☐ Student 6. ☐ Other, (please, specify)……..
9.8 Religion	1. ☐Christianity 2. ☐Islam 3. ☐ Traditional religion 4. ☐Other (please, specify)……
9.9 Ethnicity	1. ☐Akan 2. ☐ Ewe 3. ☐ Ga-Adamgbe 4. ☐ Mole Dangbani 5. ☐ Guan 6. ☐ Gurma
9.10 Household size	----------
9.11 Household monthly income (GH Cedi)	1. ☐ ≤ 100 2. ☐ 101 - 300 3. ☐ 301 - 500 4. ☐ 501 - 1,000 5. ☐>1,001
9.12 Do your belief system support the use of TM?	1. ☐Yes 2. ☐ No 3. ☐ Not sure
9.12 (b) Please, explain your answer in (Q 9.12) above	
9.13 Can you describe how the community/society perceives the use of TM?	

C.2 – Interview Guide (Community Members)

Interview questions: Community members (Continuation of Stage 2)

- Which healthcare system do you find more accessible? *(Probe for affordability, waiting time, geographical and social accessibility, attitude of providers)*
- Can you please tell me what you know about the integration of traditional medicine (TM) into the Ghanaian health system? *(Probe for understanding of TM integration, facilities with TM units and source of information)*
- What is your preference in relation to TM integration into the Ghanaian health system? *(Probe for whether or not respondent favour integration)*
- What is your opinion/view about TM integration into the health system? *(Probe for reasons/benefits/risks of TM integration)*
- Can you share your engagement or experience with the integrated health system? *(Probe for nature of experience, outcome-positive/negative, reasons for no experience)*
- Please, how do you think TM integration should be done? *(Probe for style of integration, opportunities/measures that could promote integration)*
- What is your attitude towards safe TM practice?
- What other information concerning TM integration would you like to share with me?

Thank you for your cooperation!

C.3 – Interview Guide (Orthodox Health Practitioners)

Interview Questions: Orthodox Health Practitioners (Stage 3A of the study)

SECTION 1: BACKGROUND CHARACTERISTICS

Name of district/Metropolis:

Name of community:

Name of facility:

Sex:

Age:

Tribe/ethnic origin:

Qualification / Title:

Area of Specialty:

Number of years of practice:

SECTION 2: HEALTH ARCHITECTURE

Knowledge of OMPs on integration of traditional medicine

- Please, what are your thoughts about orthodox health care in comparison with traditional health system?
- What do you know about TM integration into the Ghanaian health system? *(Probe for source of knowledge, hospitals with TM units, opinion about integration)*

Attitudes/perceptions of OMPs towards integrating traditional medicine into health system

- How do you perceive the safety and effectiveness of TM?
- How can safety of TM be ensured or promoted? *(Labelling of side effects, required dosage, expiry date, active ingredients, FDA approval, license & registration number)*

Communication within the integrated health system (referral system)

- What are your experiences in relation to patients' communication about TM use?
- Share with me your referral experience with TM practitioners? *(Probe for medical conditions deemed referable, conditions presented by referred patients, actual referrals and record keeping, particularly on your collaboration with TM practitioners)*
- How is the integrated process/system publicised? *(probe for existence of protocol, agency/institution responsible for publicity)*

Nature of health delivery

- Reflecting on health care in Ghana, what are the **benefits** of TM integration into the health system? *(probe for safe/evidence-based TM practice, comprehensive health care delivery, accessibility, sustainability of the health system)*
- What are the **risks** associated with integrating TM into the health system?
- What are the **opportunities** that promote TM integration into health system of Ghana?
- What do you think are the **barriers/challenges** hindering the integration process?
- What **measures** should be put in place to promote TM integration into the health system?
- Given that a considerable number of people in Ashanti region reside in remote areas and have limited access to orthodox health services, please what do you propose should be done to meet the health needs of such people?
- How do you perceive the future of the integration of TM into the health system of Ghana?

SECTION 3: HEALTH GOVERNANCE AND FINANCING

Registration, training and regulation of traditional health care practices

- What are your thoughts on the regulation/registration of TM practice in Ghana? *(probe for licensing and appropriateness of the process involved – burdensome or not)*
- What is your assessment of the performance of the regulatory body that supervises the practice of TM?
- TM should be included in the national health insurance scheme, to what extent do you agree/disagree with this issue and why?
- How prepared are you to support any organisation which advocates for proper integration of TM into the health system?
- Please, what other information concerning the integration of TM would you like to share with me?

Thank you for your cooperation!

C.4 – Interview Guide (Hospital Administrators)

Interview Questions: Hospital administrators (Stage 3A of the study)

SECTION 1: BACKGROUND CHARACTERISTICS

Name of district/Metropolis:

Name of community:

Name of facility:

Sex:

Age:

Tribe/ethnic origin:

Qualification / Title:

Area of Specialty:

Number of years of practice:

SECTION 2: HEALTH ARCHITECTURE

Knowledge of hospital administrators on TM integration

- Is this hospital an integrated health facility and why? *(Probe for source of knowledge, other integrated facilities)*
- Please, can you tell me the roles you play within the facility? *(Probe for roles related to recruitment of health providers, stocking of pharmacies)*
- What is your opinion on TM integration into the Ghanaian health system? *(probe for contributions of TM to health delivery in Ghana)*

Perception of hospital administrators about health systems integration

- How do you perceive the safety and effectiveness of TM?
- How can safety of TM be ensured or promoted? *(Labelling of side effects, required dosage, expiry date, active ingredients, FDA approval, license & registration number)*

Communication within the integrated health system (referral system)

- How would you describe the nature of communication between orthodox and TM practitioners in Ghana, Ashanti region? *(probe for referrals and record keeping between TM and OM practitioners)*
- As an administrator, how do you influence the communication process between TM and OM practitioners?
- How is the integrated process/system publicised? *(probe for existence of protocol, agency/institution responsible for publicity)*

Experiences/nature of health delivery

- Reflecting on health care in Ghana, what are the **benefits** of integrating TM into the health system? *(probe for safe/evidence-based TM practice, comprehensive health care delivery, accessibility, sustainability of the health system)*
- What are the **risks** associated with integrating TM into the health system?
- What are the **opportunities** that promote the integration of TM into health system of Ghana?
- What are the **barriers/challenges** to achieving an improvement in TM integration?
- What **measures** should be taken to improve the integration process?
- Given that a considerable number of people in Ashanti region reside in remote areas and have limited access to orthodox health services, please what do you propose should be done to meet the health needs of such people?
- How do you perceive the future of the practice of integrated health in Ghana?

SECTION 3: HEALTH GOVERNANCE AND FINANCING

Regulations and policies

- What are your thoughts on the regulation/registration of TM practice in Ghana? *(probe for licensing and appropriateness of the process involved – burdensome or not)*
- What is your assessment of the performance of the regulatory body that supervises the practice of TM?
- What is the level of health insurance coverage in the Ashanti region? Does health insurance has an influence on the use of TM and its integration. Why?
- How prepared are you to support any organisation which advocates for proper integration of TM into the health system?
- Please, what other information concerning TM integration would you like to share with me?

Thank you for your cooperation!

C.5 – Interview guide (TM Practitioners)

Interview Questions: Traditional medicine practitioners (Stage 3B of the study)

SECTION 1: BACKGROUND CHARACTERISTICS

Name of district/Metropolis:
Name of community:
Name of clinic:
Age:
Sex:
Tribe / ethnic origin:
Educational level:
Specialty of participant:
Number of years in practice:

SECTION 2: HEALTH ARCHITECTURE

Practice of Traditional medicine (TM) /Nature of health delivery

- What is your area of specialization?
- How did you acquire your training on TM?
- What are your thoughts about traditional health system in comparison with orthodox health care/medicine?
- How do you perceive the safety and effectiveness of TM?
- How can safety of TM be promoted or ensured? *(Labelling of side effects, required dosage, expiry date, active ingredients, FDA approval, license & registration number, packaging)*
- What is your knowledge/opinion about TM integration into the Ghanaian health system? *(Probe for source of knowledge, hospitals with TM units)*

Communication within the integrated health system (referral system)

- How willing are you to work with other professionals to investigate your TM preparation?
- Can you share your referral-related experience with me? *(Probe for medical conditions deemed referable, conditions presented by referred patients, actual referrals and record keeping, particularly on your collaboration with orthodox medicine practitioner,)*
- How do you determine the satisfaction of your clients?
- How is the integrated process/system publicised? *(probe for existence of protocol, agency/institution responsible for publicity)*

Nature/perception of TM practitioners about health systems integration

- Reflecting on health care in Ghana, what are the **benefits** of integrating TM into health system? *(probe for safe/evidence-based TM practice, comprehensive health care delivery, accessibility, sustainability of the health system)*
- What are the **risks** associated with integrating TM into the health system?

- What are the **opportunities** that promote the integration of TM into health system of Ghana?
- I would like you to tell me the **barriers/challenges** hindering the integration process?
- What **measures** should be put in place to promote TM integration into the health system?
- Given that a considerable number of people in Ashanti region reside in remote areas and have limited access to orthodox health services, please what do you propose should be done to meet the health needs of such people?
- How do you perceive the future of the integration of TM into the health system of Ghana?

SECTION 3: HEALTH GOVERNANCE AND FINANCING

Registration, training and regulation of traditional health care practices

- How is TM practice regulated/registered in Ghana? *(Probe for licensing)*
- How do you assess the process involved in registering TM practitioners in Ghana? *(probe for burdensome or not)*
- What is your assessment of the performance of the regulatory body, which supervises the practice of TM?
- Please, can you tell me whether or not TM practice should be included in the national health insurance scheme and why?
- How prepared are you to join any organisation which advocates for proper integration of your practice into the health system?
- Please, what other information concerning the integration of TM into the health system would you like to share with me?

Thank you for your cooperation!