

DETERMINANTS OF HEALTH-SEEKING BEHAVIOR IN GHANA

By

Kaamel M. Nuhu

B.S (Medical Sciences), University of Ghana, 2008

MD, University of Ghana, 2012

MPH, Southern Illinois University Carbondale, 2016

A Dissertation

Submitted in Partial Fulfillment of the Requirements for the

Doctor of Philosophy Degree in Education

In the field of Health Education

Department of Public Health and Recreation Professions

in the Graduate School

Southern Illinois University Carbondale

March 2018

DISSERTATION APPROVAL
DETERMINANTS OF HEALTH-SEEKING BEHAVIOR IN GHANA

By

Kaamel M. Nuhu

A Dissertation Submitted in Partial

Fulfillment of the Requirements

for the Degree of

Doctor of Philosophy in Education

In the field of Health Education

Approved by:

Wendi Middleton, PhD, Chair

Aaron Diehr, PhD

Justin McDaniel, PhD

Yanyan Sheng, PhD

Leonard Gadzekpo, PhD

Graduate School

Southern Illinois University Carbondale

March 27, 2018

AN ABSTRACT OF THE DISSERTATION OF

Kaamel M. Nuhu, for the Doctor of Philosophy degree in Health Education, presented on March 27, 2018 at Southern Illinois University Carbondale.

TITLE: DETERMINANTS OF HEALTH-SEEKING BEHAVIOR IN GHANA

MAJOR PROFESSOR: Dr. Wendi Middleton

Health can be described as both a product and a process of life, and is necessary for human wellbeing, overall quality of life and productivity. While health is generally desirable, many factors affect health and health outcomes of individuals and populations the world over. Virtually all individuals will be faced with one health problem or another during their lifetime, that requires some form of health care intervention. Whatever their reasons for seeking care, all health care consumers share a common interest – a desire to get better.

In a pluralistic health care environment where different avenues exist for seeking and receiving health care, differential choice of care may be influenced by sociodemographic and related factors. To the extent that the available avenues for seeking and receiving health care do not offer the same opportunities for improving health, significantly different health outcomes may be realized for comparable conditions for which different types and volume of health care are sought and received. Understanding the factors that influence health-seeking behaviors among various populations may therefore, be an important first step in designing intervention programs that nudge health consumers toward better health-seeking behaviors with the goal to improving health and health outcomes among these populations. The purpose of this research was to develop a research instrument for studying health-seeking behaviors based on the Health Belief Model, and to use the instrument to study the factors that influence/predict health-seeking behaviors among Ghanaians.

Using a convenience sample of 504 participants recruited from the Greater Accra, Ashanti, Volta and Northern Regions, analyses of the data showed that different sociodemographic characteristics such as age group, gender and health insurance status as well as selected modified constructs of the Health Belief Model such as Perceived Barriers to mainstream care, variously and collectively influence health-seeking behaviors at government and private health facilities, self-medication with herbal and pharmaceutical drugs, faith healing and care from traditional/herbal practitioners.

Based on the findings of this study, the author concludes that health-seeking behaviors in Ghana are influenced by a multiplicity of factors including sociodemographic characteristics. Subsequently, recommendations for a more extensive study with a complementary qualitative enquiry are made in order to gain a more wholistic insight of the drivers of health-seeking behaviors in Ghana.

DEDICATION

This dissertation is dedicated to the memory of my late son, Sunnibe Zidan Nuhu, who passed away on March 5, 2017. The many sleepless nights following your unexpected demise, found meaningful expression in the writing of this dissertation. You are forever immortalized in our hearts.

ACKNOWLEDGEMENTS

First and foremost, I would like to thank the almighty God, whose unending grace and favor gave me the strength through the most turbulent period in my personal life to be able to complete this dissertation. Next, I would like to thank my committee members for your priceless individual and collective contributions and support throughout this endeavor. To my chair, Dr. Wendi Middleton, thank you “elephantly” for nudging me into the program at a time I was undecided about my career path, and for “pushing” me beyond the boundaries of my comfort to give more than what I perceived to be my best every step of this journey. I also greatly appreciate your kind and encouraging words during the most difficult time in my personal life. Dr. Yanyan Sheng, thank you for permitting me to imbibe the rudiments of quantitative/research methods from under your feet. You are a gifted teacher, and statistics cannot be taught any easier! Dr. Aaron Diehr, thank you so much for the support and encouragement during this journey, and for your unparalleled attention to detail that filtered the finest details of my prospectus and contributed in no small measure to improving my writing ability. I am also very thankful for your immense contributions to my career objectives. Dr. Justin McDaniel, you have been a true blessing, and your unending contributions and support to my professional growth are greatly appreciated. Dr. Leonard Gadzekpo, thank you for believing in this cause, and for your encouragement to do something that contributes to Ghana’s health delivery system. Special

thanks to Christine Cisco (Administrative Aide, Department of Public Health and Recreation Professions) for the support and encouragement throughout my studies/work at the department. To Dr. Juliane Poock-Wallace, immediate past chair of the Department of Public Health and Recreation Professions and now Dean of the Graduate School, I am forever grateful for your massive support during my doctoral studies and professional development.

My greatest appreciation also goes to my loving and supportive family, whose time I borrowed heavily in the writing of this dissertation. Special thanks to my caring and illustrious wife, Dr. (Mrs.) Genevieve Alorbi-Nuhu, for the support and encouragement every step of the way. To my son, Kaamel Nuhu Jr (KJ), thank you so much for lending me precious family time to do my “school work” as you call it. You and your mum (my wife) not only bore the brunt of this entire process, you have been my greatest inspiration and cheerleaders! I will also like to thank my “dad”, Alhaji Mankama Nuhu and “mum”, Catherine Ama Deri, whose knees turned sore in unending prayers for my academic and professional success. “Mum”, thank you for the many sacrifices that fed my dreams and made them possible. Many thanks to my parents-in-law, Mr. Rex Alorbi and Mrs. Cynthia Holm-Alorbi for the support and encouragement during the pilot testing and throughout this journey. To all my siblings, thank you for the love and support over the years. Special thanks to Mujeeb Nuhu for the support to the research assistants during the data collection in the Northern Region.

Additional thanks go to my classmates - Eric, Eva, Kombe, Mohammed and Amber for the friendship and thorough discussions during my coursework. To my team of trained research assistants (Mike and colleagues) and community volunteers, thank you for making the data collection process less stressful. Finally, I will like to thank the 504 participants, who volunteered to participate in this study, and invested valuable time in the completion of the

surveys. Your contributions form what I hope will be the first step of graduated efforts to improve health-seeking behaviors for all health care consumers in Ghana.

TABLE OF CONTENTS

<u>CHAPTER</u>	<u>PAGE</u>
ABSTRACT.....	i
DEDICATION.....	iii
ACKNOWLEDGEMENTS.....	iii
LIST OF TABLES.....	xi
CHAPTERS	
CHAPTER 1 – Introduction.....	1
Introduction.....	1
Morbidity and Mortality in Ghana.....	2
Options for Health care in Ghana.....	2
Statement of the Problem.....	6
Need for the Study.....	8
Purpose of the Study.....	9
Research Questions.....	10
Significance to Health Education.....	10
Research Method.....	12
Instrument.....	12
Sample and Participant Selection.....	13
Theoretical Framework.....	13
Assumptions.....	14
Limitations.....	15
Delimitations.....	15

Definition of Terms.....	16
Summary.....	17
CHAPTER 2 – Literature Review.....	18
Introduction.....	18
Purpose of Study.....	18
Background of the Problem.....	19
Profile of Ghana.....	19
Health and Health Outcome.....	21
Introduction.....	21
Determinants of Health and Health Outcomes.....	22
Avenues for Seeking Health care.....	26
The Health-Seeking Process and Stages in Health-Seeking.....	28
Determinants of Health-Seeking Behavior.....	30
Modern Medicine/Primary Care.....	35
Introduction.....	35
Primary Care.....	36
Modern Medicine/Primary Care and Health Outcomes..	37
Factors Affecting Primary Care Utilization.....	38
Primary Care in Ghana.....	40
Self-Medication.....	43
Introduction.....	43
Self-Medication and Health Outcomes.....	44
Determinants of Self-Medication.....	45

Self-Medication in Ghana.....	48
Traditional/Herbal Medicine.....	49
Introduction.....	49
Traditional/Herbal Medicine and Health Outcomes.....	50
Determinants of Traditional/Herbal Medicine.....	51
Traditional/Herbal Medicine in Ghana.....	56
Faith Healing.....	57
Introduction.....	57
Faith Healing and Health Outcomes.....	57
Determinants of Faith Healing.....	58
Faith Healing in Ghana.....	60
Theoretical Framework.....	61
Health Belief Model.....	62
Summary.....	63
CHAPTER 3 – Methods	65
Introduction.....	65
Purpose of the Study.....	65
Significance to Health Education.....	65
Quantitative Design.....	66
Research Questions and Hypotheses.....	66
Research Method.....	69
Operationalization of Study Variables.....	70
Study Sample and Participant Selection.....	73

Sample Size Estimation.....	74
Data Collection.....	75
Instrumentation.....	77
Pilot Study.....	78
Demographic Characteristics of Pilot Participants...	80
Reliability of the Instrument.....	81
Validity of the Instrument.....	83
Health-Seeking Behaviors among Pilot Group.....	100
Data Analysis.....	101
Summary.....	103
CHAPTER 4 – Results.....	104
Introduction.....	104
Purpose of Study.....	104
Research Questions.....	105
Demographic Characteristics of Study Participants.....	105
Instrument Validity.....	107
Instrument Reliability.....	118
Results of Analysis for Research Questions.....	120
Results for Research Question 1.....	120
Results for Research Question 2.....	121
Results for Research Question 3.....	128
Results for Research Question 4.....	130
Results for Research Question 5.....	134

Summary.....	138
CHAPTER 5 – Discussion, Recommendations and Conclusions.....	140
Introduction.....	140
Demographic Characteristics of Study Participants.....	140
Discussion of Results from Research Question One.....	141
Discussion of Results from Research Question Two.....	143
Discussion of Results from Research Question Three.....	151
Discussion of Results from Research Question Four.....	153
Discussion of Results from Research Question Five.....	157
Limitations of the Study.....	158
Recommendations for Future Research.....	159
Contributions and Implications for Health Education.....	160
Conclusions.....	162
REFERENCES.....	165
APPENDICES.....	186
APPENDIX A – Approval for Pilot Study.....	187
APPENDIX B – Approval for Main Study.....	188
APPENDIX C – Cover Letter for Consent.....	189
APPENDIX D – Original Survey Instrument.....	190
APPENDIX E – Revised Survey Instrument.....	203
VITA.....	213

LIST OF TABLES

Table 1 - Dependent Variable, Independent Variables and Levels of Measure

Table 2 - Number of Ghanaians aged 18 years and older in the Greater Accra, Volta, Ashanti and Northern Regions of Ghana

Table 3 - Demographic Characteristics of Pilot Participants

Table 4 - Results for Reliability Analysis of Pilot Study

Table 5 - Pilot Study Factor Loadings for PCA with Varimax Rotation of Health-Seeking Behaviors at Government Health Facility

Table 6 - Pilot Study Factor Loadings for PCA with Varimax Rotation of Health-Seeking Behaviors at Private Health Facility

Table 7 - Pilot Study Factor Loadings for PCA with Varimax Rotation of Health-Seeking Behaviors using Self-Medication with Herbal Drugs

Table – 8 Pilot Study Factor Loadings for PCA with Varimax Rotation of Health-Seeking Behaviors using Self-Medication with Pharmaceutical Drugs

Table 9 - Pilot Study Factor Loadings for PCA with Varimax Rotation of Health-Seeking Behaviors from Traditional/Herbal Practitioners

Table 10 - Pilot Study Factor Loadings for PCA with Varimax Rotation of Health-Seeking Behaviors from Faith Healers

Table 11 - Pilot Study Factor Loadings for PCA with Varimax Rotation of Perceived Severity of Last Illness

Table 12 - Pilot Study Factor Loadings for PCA with Varimax Rotation of Perceived Susceptibility to Illness

Table 13 - Pilot Study Factor Loadings for PCA with Varimax Rotation of Perceived Benefits of Seeking Healthcare at Government Health Facilities

Table 14 - Pilot Study Factor Loadings for PCA with Varimax Rotation of Perceived Benefits of Healthcare at Private Health Facilities

Table 15 - Pilot Study Factor Loadings for PCA with Varimax Rotation of Perceived Benefits of Self-Medication with Herbal Drugs

Table 16 - Pilot Study Factor Loadings for PCA with Varimax Rotation of Perceived Benefits of Self-Medication with Pharmaceutical Drugs

Table 17 - Pilot Study Factor Loadings for PCA with Varimax Rotation of Perceived Benefits of Seeking Healthcare from Traditional/Herbal Practitioners

Table 18 - Pilot Study Factor Loadings for PCA with Varimax Rotation of Perceived Benefits of Seeking Healthcare from a Faith Healer

Table 19 - Pilot Study Factor Loadings for PCA with Varimax Rotation of Perceived Barriers to Seeking Healthcare from a Government Health Facility

Table 20 - Pilot Study Factor Loadings for PCA with Varimax Rotation of Perceived Barriers to Seeking Healthcare from a Private Health Facility

Table 21 - Pilot Study Factor Loadings for PCA with Varimax Rotation of Cues to Action in Seeking Healthcare from a Government Health Facility

Table 22 – Pilot Study Factor Loadings for PCA with Varimax Rotation of Cues to Action in Seeking Healthcare from a Private Health Facility

Table 23 – Pilot Study Factor Loadings for PCA with Varimax Rotation of Cues to Action for Self-Medication with Herbal Drugs

Table 24 – Pilot Study Factor Loadings for PCA with Varimax Rotation of Cues to Action for Self-Medication with Pharmaceutical Drugs

Table 25 – Pilot Study Factor Loadings for PCA with Varimax Rotation of Cues to Action for Seeking Healthcare from a Traditional/Herbal Practitioner

Table 26 – Pilot Study Factor Loadings for PCA with Varimax Rotation of Cues to Action in Seeking Healthcare from a Faith Healer

Table 27 – Summary of research questions, hypotheses, and planned analyses procedures

Table 28 – Demographic Characteristics of Main Study Participants

Table 29 – Main Study Factor Loadings for PCA with Varimax Rotation of Health-Seeking Behaviors at Government Health Facility

Table 30 – Main Study Factor Loadings for PCA with Varimax Rotation of Health-Seeking Behaviors at Private Health Facility

Table 31 – Main Study Factor Loadings for PCA with Varimax Rotation of Health-Seeking Behaviors through Self-Medication with Herbal Drugs

Table 32 – Main Study Factor Loadings for PCA with Varimax Rotation of Health-Seeking Behaviors through Self-Medication with Pharmaceutical Drugs

Table 33 – Main Study Factor Loadings for PCA with Varimax Rotation of Health-Seeking Behaviors of Care from Traditional/Herbal Practitioner

Table 34 – Main Study Factor Loadings for PCA with Varimax Rotation of Health-Seeking Behaviors of Care from Faith Healers

Table 35 – Main Study Factor Loadings for PCA with Varimax Rotation of Perceived Severity of Last illness

Table 36 – Main Study Factor Loadings for PCA with Varimax Rotation of Perceived Susceptibility to illness

Table 37 – Main Study Factor Loadings for PCA with Varimax Rotation of Perceived Benefits of Healthcare at Government Health Facilities

Table 38 – Main Study Factor Loadings for PCA with Varimax Rotation of Perceived Benefits of Healthcare at Government Health Facilities

Table 39 – Main Study Factor Loadings for PCA with Varimax Rotation of Perceived Benefits of Self-Medication with Herbal Drugs

Table 40 – Main Study Factor Loadings for PCA with Varimax Rotation of Perceived Benefits of Self-Medication with Pharmaceutical Drugs

Table 41 – Main Study Factor Loadings for PCA with Varimax Rotation of Perceived Benefits of Care from Traditional/Herbal Practitioners

Table 42 – Main Study Factor Loadings for PCA with Varimax Rotation of Perceived Benefits of Care from Faith Healers

Table 43 – Main Study Factor Loadings for PCA with Varimax Rotation of Perceived Barriers to Care from Government Health Facilities

Table 44 – Main Study Factor Loadings for PCA with Varimax Rotation of Perceived Barriers to Care from Government Health Facilities

Table 45 – Main Study Factor Loadings for PCA with Varimax Rotation of Cues to Seeking Care from Government Health Facilities

Table 46 – Main Study Factor Loadings for PCA with Varimax Rotation of Cues to Seeking Care from Private Health Facilities

Table 47 – Main Study Factor Loadings for PCA with Varimax Rotation of Cues to Self-Medication with Herbal Drugs

Table 48 – Main Study Factor Loadings for PCA with Varimax Rotation of Cues to Self-Medication with Pharmaceutical Drugs

Table 49 – Main Study Factor Loadings for PCA with Varimax Rotation of Cues to Seeking Care from Traditional/Herbal Practitioners

Table 50 – Main Study Factor Loadings for PCA with Varimax Rotation of Cues to Seeking Care from Faith Healers

Table 51 – Results for Reliability Analysis of Main Study Compared Pilot Study

Table 52 – Independent-Samples Kruskal-Wallis/Mann Whitney U Tests for Effect of Demographic Characteristics on Choice of Healthcare

Table 53 – Bonferroni-adjusted Post-Hoc Comparisons for significant effects of sociodemographic factors on choice of healthcare

Table 54 – Correlations between health-seeking behaviors and selected modified constructs of HBM

Table 55 – Sociodemographic Predictors of Health-Seeking Behaviors

Table 56 – Predictors of Health-Seeking Behaviors based on Modified Constructs of the Health Belief Model

CHAPTER ONE

INTRODUCTION

According to the World Health Organization (1948), “Health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity”. Despite its broad scope and appeal when it was first introduced in 1948, this definition has since faced heavy and growing criticism, with many experts citing the absoluteness of the word “complete” as being inconsistent with “wellbeing” (Huber et al., 2011; Larson, 1999, p. 123 – 136). Current and improved understanding of disease processes and changes in population dynamics further accentuate the limitations of this definition (Sartorius, 2006). Many researchers and experts now represent health as a continuum, arguing the apparent absence of disease does not guarantee the presence of health (Neuman, 1990; O'Donnell, 1986). On this proposed continuum of health, death and optimum health represent the extremes, and individuals swing back and forth along this continuum at various points in life (O'Donnell, 1986).

To the extent that many researchers and experts now argue health is not absolute but represented on a continuum, this author believes health is both a process and a product of life and living. Therefore, virtually all individuals will be faced with at least one health problem or another in their lifetime that requires some form of health care or intervention. While many avenues exist for seeking health care or interventions to health problems such as allopathic (mainstream) health care, through alternative and traditional herbal medicine to faith-healing (Ahmed et al., 2000; Marin et al., 1983; Marsh et al., 1999; Ryan, 1998), the wide variations in health outcomes based on type, timing, and quality of health intervention sought or received can be hard to ignore (Debas, Laxminarayan & Straus, 2006). Whatever their choice of intervention, individuals with health problems have one thing in common – they all desire to get better.

Unfortunately, not all the avenues for health intervention offer the same level of opportunity to improve the health seekers' conditions. Indeed, some of these avenues may worsen the health status of an individual or even lead to fatal outcomes, especially in situations where time-sensitive health conditions are concerned (Ernst, 2003; Ruiz, 2010). Understanding the factors that affect the health-seeking behaviors of individuals may therefore, help in the design of intervention programs that nudge individuals towards evidence-based health care services or methods of improving health.

Morbidity and Mortality in Ghana

Ghana is a small country on the west coast of Africa. Life expectancy in Ghana is 62.4 years at birth, with males averaging 61.0 years compared to 63.9 years for females (WHO, 2015). Ghana's morbidity and mortality profile is heavily burdened by infectious diseases such as malaria, lower respiratory tract infections and diarrheal diseases (CDC, 2016). In 2012 alone, malaria was responsible for 38 percent of all out-patient visits to health facilities (Fenny et al., 2015). The mortality profile also features these infectious diseases among the top ten causes of death, with lower respiratory tract infections and malaria among the top three causes of death together with stroke. Cardiovascular diseases are also an important cause of death, accounting for over 12,000 deaths in 2012 alone and placing fourth on the top ten causes of death (IHME, 2015).

Options for Health care in Ghana

Virtually all individuals will need some form of health care at one point or another in their lifetime. Whatever the health need(s) may be, the decision to seek health care is as important as the options available to those in need of the care, since different avenues for seeking and receiving care may produce different outcomes at different rates, costs and related factors. In

Ghana, consumers of health care resort to one of six main avenues as a first point of call for addressing their health issues; seeking medical care at a government health facility, seeking medical care at a private health facility, traditional/herbal medical care, self-medication with herbal medications, self-medication with patent drugs and pharmaceutical products, and faith-healing.

Primary Health care in Ghana

The Ministry of Health has the mandate to oversee health care delivery in Ghana, which is done through the public health care system or the private health care facilities. The public health care facilities are all government owned and are operated under the Ghana Health Service (GHS), with a few quasi-government facilities such as the military, police and teaching hospitals which are semi-autonomous. The government facilities are organized into community-based facilities, sub-district, district, and regional facilities, with each succeeding level serving as referral point for the facilities beneath it. The private hospitals are either mission hospitals, company, group, or individual owned. Primary care services are available at all public and private health facilities in the country (MOH, 2015).

Traditional and Herbal Medicine in Ghana

Traditional and herbal medicine served the health needs of the people of Ghana long before the introduction of modern health services in the country and remain an integral part of the Ghanaian culture to date. There are many traditional and herbal medicine practitioners across the country who diagnose and treat all manners of disease ranging from childhood illnesses through bone fractures and chronic diseases, such as diabetes and hypertension, to spiritual diseases or diseases believed to be due to curses or evil forces (Tabi, Powell & Hodnicki, 2006; Tsey, 1997). Practitioners of traditional and herbal medicine often use a combination of herbal

preparations of selected plant parts (such as leaves and roots) and some animal parts/products in addition to stringent traditions, health behavior patterns and rules, in their diagnosis and treatment of diseases (Wachtel-Galor & Benzie, 2011).

To the extent that traditional/herbal medicine serves the health needs of a significant and growing part of the Ghanaian population (Tabi, Powell & Hodnicki, 2006; Tsey, 1997) and forms part of the country's rich heritage, successive governments have sought to regularize the practice of traditional/herbal medicine and align it with mainstream modern health services for the purposes of regulation and oversight. The establishment of the Centre for Scientific Research into Plant Medicine in 1975, subsequent setting up of the Traditional and Alternative Medicine Directorate, followed by the Food and Drugs Authority in 1992, were carefully orchestrated with complementary roles to ensure oversight, monitoring, and evaluation of the delivery of traditional and alternative health care in the country (CSRIPM, 1975). To give further legal backing to the practice of traditional/herbal medicine, the government of Ghana enacted the TMPC (Traditional Medicine Practitioners' Council) Act, Act 575 for the establishment of the Traditional Medicine Council which is tasked with the sole responsibility of registering all traditional medical practitioners in the country (MOH, 2015). Despite all these attempts at regularizing and regulating the practice of herbal/traditional medicine at the national level, concerns about the safety of many of these traditional/herbal medicine preparations and practices are hard to ignore (Drew & Myers, 1997). Whereas there is little scientific evidence to support the effectiveness of many of these herbal products and practices (Bent, 2008), concerns about safety and adverse reactions and the lack of capacity of the regulatory bodies to protect the public against unregistered/unsafe products and practitioners continue to proliferate.

Self-Medication in Ghana

Self-medication has become increasingly important for both positive and negative reasons. While it may be convenient in managing minor illnesses, the potential risks of misdiagnosis and inappropriate use of medications are huge (Hughes, McElnay & Fleming, 2001).

To ensure compliance with prescribed standards for the use of medications (both prescription and over-the-counter drugs), the Ghana Pharmacy Council was established as a statutory regulatory body by an Act of Parliament, The Pharmacy Act, 1994 (Act 489), and tasked with the responsibility of regulating the distribution and practice of pharmacy in the country (MOH, 2015). However, limited capacity and efficacy in its monitoring and evaluation role, make it possible for individuals to buy virtually any kind of medication ranging from antibiotics through prescription pain medications to antipsychotics in Ghana without a prescription. Indeed, self-medication in Ghana may involve the use of mainstream drugs as well as traditional/herbal preparations. The misdiagnosis and attendant inappropriate use of prescription and non-prescription drugs in addition to herbal preparations, endangers the lives of the individuals concerned and poses the problem of drug resistance in the case of antibiotics, antimalarial drugs, and other such medications for the general population (Awad et al., 2017).

Faith-Healing in Ghana

Faith-healing in Ghana has gained prominence over the past couple of decades. Most Ghanaians practice one religion or another, and religious beliefs and practices have become an important part of the Ghanaian society (Senah, 2004). Faith healing in Ghana is operated at many levels; from the individual level through small groups to prayer camps, shrines, mosques, churches, and in recent times through the mass media (television and radio evangelism). Many

faith-healers are believed to have spiritual prowess and powers to cure all manner of diseases ranging from conditions thought to be due to curses and evil forces such as mental disorders through diabetes and hypertension to infertility. It is not uncommon to see advertisements for faith-healing and faith-healers on billboards across various parts of the country and hear them on radio and television stations. While some faith-healers enjoy significant followings from segments of the population and are a preferred first point of call for any ill-health, there is generally no scientific evidence to support their claims (Miller et al., 1998), only the testimonies of those they have “healed” in the past.

Statement of the Problem

Accurate diagnosis and appropriate, timely intervention can mean all the difference between life and death for many individuals with various health problems. To the extent that delays in seeking and receiving appropriate medical care for various health conditions tend to lead to development of complications that may end up in fatalities, disabilities in the long term or increased cost of care, the first point of call following ill-health is very important (Kraft et al., 2009). In Ghana, the top causes of morbidity and mortality, all require time-sensitive interventions to curb the development of complications and attendant fatalities.

Referral health facilities in Ghana tend to have higher mortality rates because not only do these facilities receive most of the complicated health cases, many of these cases did not seek or receive appropriate care at the primary care level. As a clinician in a tertiary facility, the author of this current dissertation experienced many complicated cases of patients who wasted a significant amount of time inappropriately treating themselves for the wrong condition or in the wrong manner (self-medication), seeking traditional/herbal remedies to medical problems that actually required surgical intervention, such as breast cancer or hernias, or resorting to faith-

healing for conditions that were organic or functional in nature, when their condition(s) would have instead responded favorably to appropriate medical intervention at a primary care facility. The result is that these patients, after failing to obtain the desired results from these non-orthodox approaches to health care, develop complications and then present late to the mainstream health facilities, at which point their conditions have become much more difficult to manage. When such patients eventually expire because they presented late after wasting time seeking care elsewhere for a condition that could easily be managed at a primary care facility if they had gone there first and early on, the impression is created that mainstream health care is not effective, and other people needing health care will then seek out alternative avenues for receiving same.

Previous researchers have found important links between health-seeking behavior and sociodemographic factors, cultural beliefs and practices, educational level, and political and economic environments and systems (Baranowski, Perry & Parcel, 2002; Palank, 1991). Several other researchers have found mainstream medical care costs and lack of access to health care facilities are important determinants of health-seeking behavior (Akeju et al., 2016; Audu et al., 2014; O'Donnell, 2007; Shaikh & Hatcher 2005).

Other researchers have questioned the effectiveness of and rationale behind self-medication (Hughes, McElnay & Fleming, 2001), faith-healing (Miller et al., 1998), and use of traditional/herbal medicine (Angell & Kassirer 1998) as options in the management of various health conditions. Indeed, attempts to integrate traditional/herbal medicine into mainstream health care have been met with stiff resistance from mainstream medical practitioners who argue there is little to no scientific support for the use of traditional/herbal preparations and methods in the diagnosis and management of medical conditions (Boateng et al., 2016) as is the case for many other “unscientific” methods of medical care (Debas, Laxminarayan & Straus, 2006).

Despite the wealth of available literature looking at factors affecting health-seeking behaviors and the relative effectiveness of the different avenues for seeking and receiving health care, no single study has looked at all these avenues together in a comparative analysis that includes important variables such as health insurance status and religious affiliation/beliefs that may potentially predict health-seeking behaviors in a defined population. The importance of individual perceptions about the severity of ill-health, susceptibility to adverse effects of misdiagnosis and inappropriate treatments, perceived benefits of engaging in suggested health-seeking behaviors as well as barriers to seeking health care through one medium or another together with subjective norms, and attitude towards a particular health-seeking behavior through modifying factors such as age, sex, and socioeconomic status cannot be overlooked.

The needless loss of human lives due to late presentations (when complications have already developed) at mainstream health facilities (particularly referral hospitals) in Ghana is of as much concern to the present researcher as it is to other medical practitioners and policy makers in Ghana. Understanding the factors that influence decisions of health care consumers in the country to choose other avenues rather than primary care facilities as their first point of call following ill-health is an important first step towards developing policies and intervention programs that will make mainstream primary health care facilities the preferred first point of call for individuals needing health care.

Need for the Study

Many medical conditions can be sufficiently treated if not cured if they are diagnosed early, and appropriate treatment/intervention given (Gæde et al., 2008; Shapiro & Taylor, 2002). The leading causes of morbidity and mortality in Ghana, as mentioned earlier, include diseases such as malaria, lower respiratory tract infections, stroke, cardiovascular diseases, and diarrheal

diseases (CDC 2016). When diagnosed early, all the infectious diseases on the list can be cured, while the chronic diseases such as cardiovascular diseases can be sufficiently managed to prevent and/or delay the development of complications. Individuals suffering from these top causes of morbidity in Ghana who resort to self-medication, faith-healing, or traditional/herbal medicines not only risk being misdiagnosed, but are more likely to develop complications due to inappropriate, inadequate, or ineffective treatment.

Since a large proportion of Ghana's morbidity and mortality burden comes from mainly infectious diseases and some manageable chronic conditions (such as cardiovascular diseases), it is possible to significantly reduce cause-specific morbidity and mortality rates by reducing barriers to primary health care facilities and making them the preferred first point of call following ill-health. This study is, thus, partly intended as a form of action research, where it serves a local need by diagnosing the problems associated with health-seeking behaviors as a basis for promoting primary health care facilities as the preferred first point of call for health needs.

Purpose of the Study

The success of public health intervention programs partly rests on prevailing circumstances such as culture, beliefs, and attitudes of the local population (Thomas, Fine & Ibrahim, 2004). To improve chances of success for intervention programs, local content research is necessary to aid in understanding the health problem(s) of interest and to serve as a basis for developing the intervention programs. While much research has been done on the determinants of health-seeking behavior, most researchers have limited their work to specific health outcomes such as maternal and child health, and on specific health-seeking behaviors such as self-

medication or traditional/herbal medicine. This current research work is intended to serve the following purposes;

- 1) Create a comprehensive survey instrument to evaluate the factors that influence health-seeking behaviors among Ghanaians using selected constructs of the Health Belief Model (HBM).
- 2) Use the survey instrument to study determinants and predictors of health-seeking behaviors among Ghanaians as a basis for developing future intervention programs.

Research Questions

This research seeks to find answers to the following questions;

- 1) What is the first point of call for seeking health care among Ghanaians?
- 2) Which sociodemographic factors influence choice of first point of call for health care among Ghanaian health care consumers?
- 3) Are there any relationships between selected constructs of the HBM and first point of call for health care among Ghanaians?
- 4) What are the sociodemographic predictors of health-seeking behaviors among Ghanaians?
- 5) What factors based on selected constructs of the Health Belief Model (HBM), predict health-seeking behaviors among Ghanaians?

Significance to Health Education

Health education has been defined in a variety of ways by different experts (Gold and Miner, 2002; Tones & Tilford, 2001). Many other researchers have linked health education to health promotion in their definition of the former (Caraher, 1998; Chen, 2001). While many of

these definitions share similarities in many respects, perhaps the most succinct definition of health education is that by the World Health Organization (WHO, 2015);

Health education is any combination of learning experiences designed to help individuals and communities improve their health, by increasing their knowledge or influencing their attitudes.

Whatever the definition of health education may be, the present author views health education as the most potent tool of public health. Indeed, it is this researcher's belief that health education is the "heartbeat" of preventive medicine. Both consumers and providers of health care share the same goal – to make the former (health consumers) better in the most efficient, effective, and timely manner. Similarly, whatever their first point of call may be for health care needs (self-medication, traditional/herbal medicine, faith-healing or mainstream primary health facility), sick Ghanaians want the same thing – to get better. Unfortunately, not all the avenues for seeking health care in Ghana produce the same outcomes. Mainstream primary health care is supported by sound theoretical basis and overwhelming empirical evidence for both effectiveness and efficiency. Nevertheless, many Ghanaians still resort to other avenues such as self-medication, faith-healing, and herbal/traditional medicine for health care needs. Although, to be fair, some Ghanaians have reported obtaining desired outcomes from self-medication, faith-healing, and traditional/herbal preparations. Many other Ghanaians have visited mainstream health care facilities because of complications from self-medication and/or herbal preparations or simply just due to delay in seeking medical care at a primary health facility, at a time when their conditions have become not only difficult to manage, but also costlier to manage as well.

This study sought to understand the factors that inform the health-seeking behaviors of Ghanaians, with the hope that future programs aimed at promoting primary health care facilities

as the preferred point of call among Ghanaians needing health care, can refer to evidence generated from this study. Such evidence can then be used to improve knowledge about the benefits of seeking health care needs from primary health facilities first, while eliminating barriers to primary health care among Ghanaians.

Research Method

This study was conducted using a cross-sectional research design such that data was collected at a single point in time from the target population using a self-administered survey (Creswell, 2003). Despite their limitation in establishing causal inference, cross-sectional studies have the advantage of presenting researchers the opportunity to have good control over the measurement process, leading to better understanding of the relationships within representative samples (Mann, 2003). The current researcher believes the foregoing advantage of cross-sectional designs allowed a meaningful analysis and understanding of the factors that influence health-seeking behaviors in Ghana, and most importantly, what relationships exist between these factors and how they independently and collectively predict health-seeking behaviors among Ghanaians.

Instrument

To determine the factors that influence health-seeking behaviors in Ghana, a comprehensive survey instrument was synthesized from existing literature and survey instruments from studies that have overlapping themes with this current study. Carefully crafted survey questions incorporating the variables and theoretical constructs of interest (based on Health Belief Model) for the purposes of answering the research questions under study were generated, subjected to expert review, pilot-tested and revised for reliability and validity prior to the main study.

Sample and Participant Selection

The population for the current study was Ghanaians currently living in Ghana. Convenience sampling was utilized to recruit study participants from each of the four main ethnic groupings in the country, namely Ga/Adangme, Akan, Ewe and Northern ethnic groups from the Greater Accra, Ashanti, Volta and Northern regions, where these ethnic groupings are the dominant ethnic groupings respectively. Sample size analysis was conducted to determine the minimum sample size required to determine significant differences between groups, and to allow meaningful estimation of which independent variables predict health-seeking behaviors in Ghana.

To the extent that this researcher anticipated and hoped to include participants with no formal education in the study sample (educational level is an independent variable of interest in the study), trained research assistants (RAs) were recruited to administer the survey questions among such participants. To be eligible to participate in the study, individuals had to be at least 18 years of age or older at the time of data collection. A survey instrument developed from extant literature and existing scales served as the research instrument, and an estimated average of 30 minutes were spent in completing each survey.

Theoretical Framework

The Health Belief Model (HBM), was first developed in the 1950s to explain and predict health-related behaviors (Hochbaum, 1958). To date, this theory remains widely used in health behavior research (Glanz et al., 2008). The HBM currently has six constructs: Perceived Severity, Perceived Susceptibility, Perceived Benefits, Perceived Barriers, Cues to Action, and Self-Efficacy. The HBM postulates that individual beliefs about the seriousness of a health problem (Perceived Severity), their beliefs about likelihood of being affected by the health

problem (Perceived Susceptibility), beliefs about benefit of engaging in suggested health-promoting behavior (Perceived Benefits), their assessment of possible obstacles to adopting the health-promoting behaviors (Perceived Barriers), immediate pushing factors which may be internal such as pain, or external such as incapacitation of a family member from the health problem (Cues to action), together with their belief in their own capacity to carry out the suggested health behavior (Self-Efficacy), act together to determine whether or not that individual will engage in the suggested health behavior or not.

In the context of this current study, the present researcher was interested in whether perceived severity, perceived susceptibility, perceived benefits, perceived barriers, and cues to action, influence choice of first point of call among Ghanaian health-seekers.

Assumptions

Several assumptions were made in the design and processes going into the current research.

- 1) First, the researcher assumed that the proposed method for selecting and including participants in the study would yield a sample representative of the Ghanaian population.
- 2) The researcher assumed the survey questions were appropriately worded to measure the constructs of interest and would be understood by responders such that responses are based on an honest representation of their current situation and perceptions.
- 3) Finally, the researcher assumed that the use of trained research assistants (RAs) in administering the survey to participants without formal education would not lead to misrepresentation of information and inaccurate capturing of the data.

Limitations

Many of the limitations of the present study relate to the use of self-report methodology. While self-report methodology has been touted for strengths such as relative ease and quickness of data collection as well as capacity to measure intangible information such as behavior and motivation, significant limitations have been reported for the method that particularly affect the internal validity of studies using the method (McDonald, 2008).

Specifically, the limitations for the present study were;

- 1) Threat of social desirability bias where participants respond in a way that shows only their positive sides.
- 2) Occurrence of recall bias, where participants fail to accurately capture past events necessary for the internal validity of the study.
- 3) Use of trained RAs to administer surveys to participants without formal education could lead to further inaccuracies in collected data and impact internal validity of the study.

Delimitations

Delimitations refer to those limits imposed on the study by the researcher prior to the beginning of the study (Neutens and Rubinson, 2010). The researcher set the following delimitations for this research;

- 1) Participants were selected only from population of Ghanaians currently living in Ghana.
- 2) All study information was collected through self-report using the survey instrument.
- 3) The researcher focused on selected constructs of the HBM in trying to answer some of the research questions.

Definition of Terms

1. Allopathic medicine: mainstream medical practice where pharmacological agents or physical interventions are used to treat medical conditions (Oxford Medical Dictionary, 2010).
2. Attitude Towards Behavior: Positive or negative value placed on engagement of suggested health behavior (Glanz, 2008).
3. Behavioral Beliefs: Subjective probability that a given health *behavior* will produce a given outcome (Glanz, 2008).
4. Determinants of Health: The range of personal, social, economic and environmental factors that influence health status (Healthy People, 2014).
5. Faith-Healing: Healing achieved by religious belief, prayer and practices rather than by medical treatment (Pattison Lapins & Doerr 1973)
6. Health Behavior: An activity undertaken for the purpose of preventing or detecting disease or for improving health and well-being (Glanz, 2008).
7. Health Belief Model: Conceptual framework for understanding and predicting health-behavior (Glanz, 2008).
8. Health Outcome: Changes in health due to specific health care investments or interventions (WHO 2017)
9. Health: "A state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity." (WHO, 1948)
10. Perceived Barriers: An individual's beliefs about what factors (real or imagined) prevent them from engaging in a suggested health behavior (Glanz, 2008).

11. Perceived Benefits: Beliefs of an individual regarding the usefulness of engaging in a suggested health behavior (Glanz, 2008).
12. Perceived Severity: An individual's belief about the seriousness of a medical condition as an influence of type of care to seek (Glanz, 2008).
13. Primary Health care facility: Medical facility where essential health care based on scientifically sound and socially acceptable methods and technology are used to provide health care needs for individuals and communities (WHO, 2008).
14. Secondary Health care facility: A hospital or advanced diagnostic center that serves as referral center to primary care facilities (WHO, 2011)
15. Self-Medication: selection and use of medicines by individuals (or a member of the individuals' family) to treat self-recognized or self-diagnosed conditions or symptoms (Ruiz, 2010).
16. Tertiary Health care facility: A hospital with advanced specialty clinics and centers focusing on various types of health problems (WHO, 2011).
17. Traditional Medicine: Combination of the knowledge, skills, and practices based on the theories, beliefs, and experiences indigenous to various cultures as applied in the prevention, diagnosis and treatment of physical and mental illness (WHO, 2007).

Summary

This chapter provided a synopsis of the present study designed to evaluate the factors that influence health-seeking behaviors among Ghanaians resident in Ghana. The chapter placed special focus on stating the problem of interest, need for the study, research design and questions, participant selection, theoretical framework as well as limitations, delimitations, and definition of key terms relevant to the study.

CHAPTER 2

LITERATURE REVIEW

Introduction

This chapter provided a background to the study, an overview of existing literature relevant to the synthesis and purposes of this study. More specifically, the author provided an appraisal of past studies examining (a) the determinants of health-seeking behavior (b) factors affecting primary care utilization (c) determinants of self-medication (d) determinants of traditional/herbal medicine (e) determinants of faith healing and (f) the Health Belief Model (HBM) as applied in previous studies focusing on health-seeking behavior as well as its application to the current study. To the extent that the study is targeted at understanding the determinants of health-seeking behavior of Ghanaians living in Ghana, special consideration was given to past studies among Ghanaians where available.

Purpose of Study

To focus the review of literature relevant to this study, a restatement of the study purpose(s) is necessary. This study was designed to serve two purposes: (a) create a comprehensive survey instrument to evaluate the factors that influence health-seeking behaviors among Ghanaians using selected constructs of the Health Belief Model (HBM) and (b) use the survey instrument created to study determinants and predictors of health-seeking behaviors among Ghanaians as a basis for subsequent development of an intervention program to improve health-seeking behaviors among Ghanaians.

Background of the Problem

Profile of Ghana

Geographical and Topographical Characteristics. Ghana is a small country located on the west coast of Africa. It lies between latitude 8° 00' N and longitude 2° 00' W. The first country in Sub-Saharan Africa to gain independence from British colonial rule in 1957, Ghana occupies an area of 238,537 square kilometers and shares boundaries with Cote D'Ivoire to the West, Togo to the East, Burkina Faso to the North and the Atlantic Ocean to the South (Ghana Government, 2015).

Ghana has a low topography with tropical and savannah regions split into ten administrative regions: Ashanti Region, Brong-Ahafo Region, Central Region, Eastern Region, Greater Accra Region, Northern Region, Upper East Region, Upper West Region, Volta Region and Western Region. The regions are furthermore divided into 216 districts, with the capital Accra located in the Accra Metropolitan Assembly of the Greater Accra Region (Ghana Statistical Service, 2015).

Demographic Characteristics. With a population growth rate pegged at 2.19% per annum, Ghana's total population is estimated to be 28.7 million people in 2017 from a baseline 24,658,823 people according the 2010 Ghana National Population and Housing Census (ADBG, 2017). Using the 2014 population estimates, Ghana's population density at the end of 2014 stood at 107 people per square kilometer, with the Greater Accra and Ashanti regions having the greater share of the population at 16.3% and 19.4% while the Upper East and Upper West regions have the lowest populations at 4.2 % and 2.8% respectively. With a total of 12,633,978 females (51.2% of population) and 12,024,845 males (48.8% of population), Ghana's Sex Ratio stood at 95 males to 100 females, Crude Birth Rate (CBR) at 31.4 births/1,000

population and Crude Death Rate (CDR) at 7.37 deaths/1,000 population (Ghana Statistical Service, 2012). Up to 73.50% of the total population live in urban areas, with annual urbanization rate of 3.4% (ADBG, 2017).

Ethnic Groups. Major ethnic groups in Ghana are Akan (47.5% of population), Mole-Dagbani (16.6% of population), Ewe (13.9% of population), Ga-Dangme (7.4% of population), Gurma (5.7% of population), Guan (3.7% of population), Grusi (2.5% of population), Mande-Busanga (1.1% of population) and others at 1.6% of population (Ghana National Population and Housing Census, 2010). Meanwhile, the people of the northern half of the country, comprising the Upper West, Upper East and Northern Regions such as the Mole-Dagbani, Grusi, Mande-Busanga, Dagaaba, Waala and Frafra, share similarities in language and culture, with many inter-marriages among these ethnic groupings. Subsequently, some researchers have lumped them all into one - Northern ethnic groups (Awedoba, 2006)

Languages. With English as the official national language spoken by about 36% of the population, major local languages are Asante (14.8%), Ewe (12.7%), Fante (9.9%), Boron (Brong) (4.6%), Dagomba (4.3%), Dangme (4.3%), Dagate (Dagaaba) (3.7%), Akyem (3.4%), Ga (3.4%), and Akuapem (2.9%).

Religion. Christianity is the most dominant religion in Ghana with 71.2% of the population identifying as Christian, followed by Islam at 17.6% and Traditional African Religion at 5.2%. An additional 5.2% of the population do not identify with any religion, while all other minority religions make up 0.8% of the population. (Ghana Statistical Service, 2012).

Literacy. Literacy rate, defined as population above 15 years of age who can read and write stands at 76.6% for the total population, males being 82% and females 71.4% (CIA, 2015).

Economic Factors. Ghana has a market-based economy with relatively few policy barriers to trade and investment in comparison with other countries in Sub-Saharan Africa. Major exports include cocoa (second largest producer in the world), Gold, timber and oil in recent times since 2010. Major imports are rice, chicken, technology and technology-based products. Agriculture accounts for nearly one-quarter of Ghana's Gross Domestic Product (GDP) and employs more than half of the workforce, mainly small landholders. The services sector accounts for about half of GDP. As of 2015, Ghana's GDP stood at \$37.54 billion, with the GDP-per capita of \$1,369.7 placing the country as a lower middle-income country. Unemployment rate in Ghana was 5.8% of the population in 2016, and in 2014, Ghana spent 3.6% of its GDP on health care (World Bank, 2017).

Health and Health Outcomes

Introduction

As mentioned previously in chapter one, the WHO (1948) definition of health has faced growing criticism in recent times for its "absolute" posture on health (Huber et al., 2011; Larson, 1999, p. 123 – 136). However, many experts and researchers agree that better health is customarily desirable, and plays a pivotal role in human happiness and wellbeing (Garrett, 1990; WHO, 2017), despite the apparent lack of consensus on the definition of health. Indeed, the benefits of health transcend the individual to positively impact economic progress and development, as human productivity is greatly influenced by health status (Bloom, 2007; Grosse

& Harkavy, 1980; WHO, 2017). Without good health, therefore, individual quality of life and economic productivity are severely threatened, with attendant consequences and ripple effects (Over, Ellis, Huber & Solon, 1992).

Virtually all individuals will be faced with one health problem or another in their lifetime that requires some form of health care or intervention. While many avenues exist for seeking health care or interventions to health problems such as allopathic (mainstream) health care, through alternative and traditional/herbal medicine to faith-healing (Ahmed et al., 2000; Marin et al., 1983; Marsh et al., 1999; Ryan, 1998) the wide variations in health outcomes based on type, timing and quality of health intervention sought or received can be hard to ignore (Debas, Laxminarayan & Straus, 2006).

Whatever their choice of intervention, individuals with health problems have one thing in common – they all desire to get better. Unfortunately, not all the avenues for health intervention offer the same level of opportunity to improve the health seekers' conditions. Indeed, some of these avenues may worsen the health status of an individual or even lead to fatal outcomes, especially in situations where time-sensitive health conditions are concerned (Ruiz, 2010; Ernst, 2003). Understanding the factors that affect the health-seeking behaviors of individuals may, therefore, help in the design of intervention programs that nudge individuals toward evidence-based health care services or methods for improving health.

Determinants of Health and Health Outcomes

Several factors variously and collectively influence the health of individuals and populations the world over (WHO, 2017). This range of personal, social, economic, environmental and related factors which affect health are collectively referred to as the determinants of health, and have been categorized into broad groups such as biology and

genetics, individual behavior, health services and policy-making as well as social factors (Healthy People, 2014). Other researchers have further placed these factors into two broad categories; modifiable and nonmodifiable determinants of health, with factors such as individual behavior, health services and policy making as well as social factors generally considered modifiable, while biology and genetics fall under nonmodifiable (Healthy People, 2014; WHO, 2017).

More appropriately described as the social determinants of health, the conditions in which people are born, grow, live, work, and age, not only influence but are also influenced by individual behavior (WHO, 2008). Subsequently, these structural determinants and conditions of daily life significantly affect the differential distribution of disease and health outcomes as well as modulating factors such as individual and health behaviors, and have been a major focus of public health research and intervention programs targeted at reducing health inequities (Braveman & Gottlieb 2014; Marmot, 2005).

Biology and Genetics. Family history presents some of the strongest risk factors for many disease processes including diabetes, cancer, cardiovascular disease, and some psychiatric illnesses, and has its roots in human biology and genetics (Blazer & Hernandez, 2006). Generally considered nonmodifiable, the biological and genetic basis of disease disproportionately predisposes some populations to disease more than others. Biological and genetic determinants of health include sex, age, and ethnicity (Bortz, 2005; Phillips, 2005; Kimbro, Bzostek, Goldman & Rodriguez, 2008). Examples of conditions tied to these are higher incidence of breast cancer among females compared to males (Jemal et al., 2008), higher incidence of heart disease among older people (Idris, Deepa, Fernando & Mohan, 2008), and sickle cell disease among people of African American decent (Brousseau, Panepinto, Nimmer & Hoffmann 2010).

Individual Behavior. Individual behavior is one of the modifiable determinants of health that is the target of many public health education programs (Green, 1984). Modifiable human behaviors that influence health and health outcomes are smoking, alcohol indulgence, diet, and physical activity (Cawley & Ruhm 2011). Selivanova and Cramm (2014) studied the relationship between health behaviors and health outcomes among older adults in Russia; they found that health behaviors such as physical activity and smoking behavior are important predictors of health status, such that men with a significant smoking history reported poorer overall health status than those without a significant smoking history, while women who reported regular fruit and vegetable intake also reported better health state than those who reported less fruit and vegetable intake.

Health Services. Access to health services as well as the quality of health services available, influence health and health outcomes, with limited access to quality health services posing a significant threat to desirable health outcomes (Gulliford et al., 2002). Previous researchers have underscored the need for improved access to quality health services in the crusade for reducing health inequities, highlighting inter alia, the barriers to accessing quality health services such as lack of availability and high cost of these services (Devoe, Baez, Angier, Krois, Edlund, & Carney, 2007). Evaluation of past studies by Turner and Roy (2013) as well as Dayaratna (2013) illustrate the importance of access to quality health services; these researchers found that Medicaid patients had relatively limited access to quality health services and consequently, suffered worse health outcomes compared to those who had private health insurance and better access to quality health services. Additionally, Adedini (2014), studied the effect of limited access to health care services in Nigeria on childhood mortality; he reports that the mortality rate for children under-five was higher among mothers who had limited access to

health services (due to cultural and resource constraints) compared to those who had better access to health services. In the current study, the effect of access to the different avenues for seeking and receiving health care was evaluated to see how it affects health-seeking behaviors by examining differences in cost of care, distance to care facility and related factors.

Health Policy. The top public health concerns of the 20th century were all addressed through appropriate health policy interventions, highlighting the importance of effective health policies in dealing with existing and emerging public health problems (Glasgow, Vogt & Boles 1999). Health policy has been shown to influence individual behaviors that affect health as well as the structure and delivery of health care services to individuals and communities. As an example, McDaniel, Nuhu, Ruiz, and Alorbi (2017) studied the social determinants of cancer incidence and mortality around the world and found that countries with cancer control policies, programs and action plans had both lower incidence and attendant mortality from lung, breast, cervical, and colorectal cancers compared to countries without these policies.

Another good illustration of the effect of health policy and health outcomes is the policy to ban smoking in public places. In a random-effects meta-analysis of 45 studies regarding 33 smoke-free laws, Tan and Glantz (2012) reported significant correlations between comprehensive smoke-free laws and lower rates of cardiovascular, cerebrovascular and respiratory events and fatalities. Many other researchers (International Agency for Research on Cancer, 2009; Goodman, Haw, Kabir and Clancy, 2009; US Department of Health and Human Services, 2006) report that the desirable effects of these smoke-free policies, such as reduced hospital admissions for myocardial infarctions, began to manifest shortly after these laws took effect.

Social Factors. As mentioned previously, the social determinants of health have been shown to influence health and health outcomes (WHO, 2008). Such conditions as low literacy levels, unsafe neighborhoods, unstable housing, poverty and unemployment, inadequate social support systems, and amenities as well as related factors, have been documented to adversely affect health behavior, individual and population health, and health outcomes (Braveman & Gottlieb 2014; CDC, 2017; Pickett & Pearl 2001). As observed by Hernandez and Blazer (2006), a bidirectional relationship exists between social factors and health such that infirmity in an individual can potentiate changes in social factors, while social factors by themselves, may directly lead to positive or negative influences on health-seeking behaviors and health outcomes. As an example, the authors forward that an individual with a recent diagnosis of HIV may lose their social support base due to the stigma associated with the disease, while the same social networks may influence health-seeking behaviors by making suggestions to those affected by disease regarding options for health care. The importance of social factors as determinants of health is further illustrated by Fleitlich and Goodman (2001); in their study of the social factors associated with childhood mental disorders, the authors found that poverty, unstable family conditions and domestic violence were associated with a higher prevalence of mental disorders among children in the study sample.

Avenues for Seeking Health care

Almost all individuals will require some form of health care intervention at some point during their lifetime. People seek health care for a wide variety of reasons; to receive treatment for acute or ongoing chronic medical conditions, for disease prevention and health promotion purposes, or simply to satisfy some social or personal need such as family planning or employment purposes (Kroeger 1983; Sauver et al., 2013). As mentioned previously in chapter

one, while individuals may have different reasons for seeking and receiving health care, all health care consumers are motivated by a desire for improvement in their medical condition and/or state. Like health outcomes, choice of health care is also influenced by a wide array of factors ranging from proximal, personal factors such as knowledge and attitudes toward different avenues of health care, to more distal factors such as environment (accessibility) as well as existing health policies (Al-Doghaither, Abdelrhman, Saeed, & Magzoub 2003; Uchendu, Ilesanmi & Olumide, 2013).

Medical care is pluralistic in many parts of the world, and many avenues exist for satisfying one's medical needs (Leslie, 1980). Avenues for seeking and receiving medical care include self-medication with herbal/traditional medicines, self-medication with pharmaceutical drugs, faith-healing, traditional/herbal medical care from practitioners, modern (orthodox) medicine, and watchful waiting with expectation of self-resolution (Bodeker & Kronenberg 2002; Eichhorn, Greten & Efferth 2011; Plante & Sherman, 2001; Shaghaghi, Asadi, & Allahverdipour 2014).

Modern Medicine Versus Complementary Alternative Medicine

Some experts and health researchers lump all other avenues outside of orthodox medicine under the umbrella term “complementary and alternative medicine (CAM)”, and it is estimated that two-thirds of the world's population seek health care from these sources (Pal, 2002). The foregoing observation notwithstanding, many researchers and medical experts have questioned the veracity of CAM practices, often citing the lack of solid, scientifically proven evidence in support of these practices (Beyerstein, 2001; Fontanarosa & Lundberg 1998). Other researchers and practitioners of CAM have defended and promoted CAM, arguing that evidence building must focus on the needs and concerns of individual patients and their right to choice of care

(Coulter & Willis 2004). Despite these opposing views giving rise to a consorted volume of literature comparing the pros and cons of orthodox medicine and CAM, most of which favor orthodox medicine over CAM, there have been calls for reconciliation between orthodox medicine and CAM, to allow for an integrated approach to health care, where the two are seen as complementary rather than competitive (Coates & Jobst 1998). In support of the growing calls for an integrated approach to medical care, where modern medical care operates side-by-side with CAM, Herman, Poindexter, Witt and Eisenberg (2012) conducted a systematic review of evaluations of complementary and integrative medicine (CIM) to determine the justification for the growing calls for integrative medicine; they found that 29 percent of the evaluations reviewed, depicted overall health improvement with cost savings for the CIM therapy compared to mainstream care alone.

The Health-Seeking Process and Stages in Health-Seeking

Health-seeking has been described as an evolving process rather than an event, with many influencing factors at play, such that many models have been proposed to explain the decision, type and volume of care sought at various stages of ill-health (Fabrega, 1973; Muela, Ribera, Toomer & Grietens, 2012; Suchman, 1965). While criticizing these past models such as the use of a single system of health care in Suchman's (1965) model, Igun (1981) harnesses and refines the components of these past models into a unitary model that presents the stages of health care as logical possibilities, such that not all illnesses go through these stages in sequential order. As cited by Okwara (1999), these stages vary in duration and scope, and may require closer analysis to separate one from the other.

According to Igun's (1981) harmonized model of the stages of health-seeking behavior, the first stage of health-seeking behavior involves the development of symptoms, during which

the individual becomes aware of ongoing changes in health state, preceding an emotional response characterized by fear and anxiety to what might be wrong with them. Following a self-evaluation of the symptoms at this stage, individuals progress to the second stage during which they may ignore the symptoms altogether, anticipating self-resolution, or resort to self-treatment based on their understanding of the disease process and what might work well in neutralizing the symptoms and restoring their health (Mwabu, 1984).

Succeeding this stage is a period during which close associates of the affected individual learn of their condition through self-report or direct observation, culminating in the assessment of the condition and the social recognition of the assumption of the sick role (Igun, 1981). Beyond expressions of concern and support at this point, these close associates offer their own diagnoses and suggest treatment options, leading to a selection of a treatment choice with the most probable efficacy according to the most influential associates (Igun, 1981).

In the final stages of this model, the selected treatment option is implemented and the response to treatment is closely monitored by all parties involved – the practitioner, the patient and close associates. If the condition responds to treatment, there is a shift into the final stage under this scenario, where recovery and rehabilitation bring closure to the case. If the patient fails to improve, there is a reassessment of symptoms and treatment options, and the cycle is repeated till there is some form of closure, either through resolution of symptoms or death of the person affected (Igun, 1981). A good illustration of the stages of health-seeking behavior is provided in Nyamongo's (2002) study on the health care switching behavior of malaria patients in a rural community in Kenya. The author found that patients were more likely to start with self-treatment at home to cut down on costs as they monitor the condition and hope for remission. Subsequent decisions to seek alternative treatments follow, when self-treatment fails to induce

and/or sustain remission, with visits to private health care practitioners, government health centers, or tertiary hospital facilities when complications set in and pose a significant threat to life. The findings of this particular study further highlight individual knowledge and understanding of the likely causes of the prevailing disease, duration of sickness, expected cost of treatment as well as perceived severity of the disease as important determinants in their choice and pattern of health-seeking options.

Determinants of Health-Seeking Behavior

Health-seeking behavior refers to any action or combination of actions taken by an individual with a health problem (perceived or real), toward finding a solution (Olenja, 2003). A milieu of sociocultural, economic, and environmental factors guided by intrapersonal and interpersonal characteristics and behaviors, wider community norms and expectations together with available health provider services and associated characteristics, influence health-seeking behaviors (Ihaji, Eze & Ogwuche 2014; Oberoi, Chaudhary, Patnaik & Singh 2016).

Individual Factors

Differences in individual characteristics affect health-seeking behaviors differently. While individual differences are by themselves influenced by other factors such as biology and genetics, sociocultural environment, and economic factors (Maneze, DiGiacomo, Salamonson, Descallar & Davidson 2015), their implications for health-seeking behaviors cannot simply be glossed over.

Gender. Differences in gender roles significantly influence the trends of health-seeking behaviors between men and women. Currie and Wiesenber (2003) studied the factors affecting health-seeking behaviors among women; they report that women are generally less likely to identify disease symptoms, and feel more restricted in access to health care facilities. The authors

forward that, this observation is partly because of the relatively lower social value placed on women by culture, as well as their defined social roles, which make it cumbersome for them to visit health care facilities during the day when they are open. In their article, Galdas, Cheater and Marshall (2005) report a recurring theme enmeshing “traditional masculine behavior” for delays in seeking health care during ill-health among men. Subsequently, the authors suggest that while cultural gender roles may partly explain differences in health-seeking behaviors and outcomes between males and females, similarities and differences in masculine beliefs across men from varied ethnic backgrounds and socioeconomic status may inform our understanding of disparities in health and health outcomes among men from different backgrounds. Gender differences in health-seeking behaviors is further highlighted in a study by Thompson, Anisimowicz, Miedema, Hogg, Wodchis and Aubrey-Bassler (2016); in a cross-sectional study involving over 7000 patients from 10 provinces in Canada, the authors find that significant gender differences exist in health-seeking behaviors between men and women such that more women reported visiting their primary care provider for both physical and mental health concerns compared to men.

Socioeconomic Status. Socioeconomic Status (SES) is an aggregate index of an individual’s social and economic standing, reflecting their educational level, income, and occupation, and has been positively associated with better health (Baker, 2014). Progressive education improves knowledge, health literacy, beliefs, and practices, and has been associated with better health and health outcomes (Baker, Leon, Greenaway, Collins & Movit 2011). As an example, Desai and Alva (1998) used demographic and health surveys from 22 developing countries to study the relationship between maternal education and child health; they found that children whose mothers were educated had better immunization rates and health outcomes compared to children whose mothers were less educated. Interestingly, Lasker (1981) observed

that education and income increased accessibility to all forms of health care; however, respondents with higher levels of education confessed to using both traditional and non-traditional forms of therapy.

Income. Income has also been determined to be an important determinant of health insurance status, such that most insured individuals have relatively higher incomes compared to uninsured individuals (Bernard, Banthin & Encinosa 2009). Subsequently, other researchers have found that individuals with health insurance were more likely to use primary health care facilities compared to those without health insurance (Jowett, Deolalikar & Martinsson 2004). To the extent that health care of any form comes at a cost, individual income may directly influence health-seeking behavior such that those who are better placed financially can both pay for health services directly, as well as indirectly through the purchase of health insurance coverage.

Place of Residence. Urban and rural dwellers have also been found to exhibit important differences in health-seeking patterns, with secondary factors such as income and educational level, availability and access to health care facilities all appearing to influence the differential health care patterns between rural and urban dwellers (Onyeonoro et al., 2016; van der Hoeven, Kruger & Greeff 2012). Plausible differences in socioeconomic variables between rural and urban dwellers may inform the availability, quality, access to and affordability of health care services between rural and urban communities. As an example, van der Hoeven, Kruger, and Greeff (2012) studied differences in health-seeking behaviors between rural and urban dwellers in South Africa; they reported significant differences in socioeconomic variables, beliefs about health and health care utilization patterns, all of which favor urban settlers of rural dwellers. Their study further revealed that urban settlers had more health care options and better access to

health services and were five times more likely to prefer the generally more expensive private health care facilities.

Sociocultural Factors. Sociocultural factors confer unique identities to communities and individuals, and have been cited as an important determinant of differential choice of health care options by past researchers (Bailey, 1987; Shaikh & Hatcher 2004). Indeed, health, illness, and health care have been described as integral parts of cultural systems (Kleinman, 1980) in part because of cultural perceptions of disease(s), cultural idioms of distress and suffering, associational and causal factors as well as accepted modalities of treatment, all of which may vary widely between cultures. Other researchers (Foster & Anderson, 1978; Okwaro, 1999) observe that non-western individuals sometimes have strong values and beliefs that conflict with western medicine enough to dissuade them from accessing and utilizing any associated health care services.

Religious Affiliation. Religion has been cited as another important sociocultural factor influencing health care behavior. As an example, Mwabu (1984) found that Christians were more likely to seek health care from modern health care facilities compared to believers of traditional African religion, who were more likely to resort to traditional healing. The present researcher believes this observation may, at least in part, be tied to differences in socioeconomic variables, such as educational and income levels between practitioners of various religions and in part because of strong values and beliefs among traditional African religion practitioners that make them view modern medical care with suspicion (Foster & Anderson, 1978; Okwaro, 1999).

Age. Studies on the effect of age on health-seeking behaviors are nuanced; while some studies depict differential health-seeking behaviors with age, such that older people with chronic health problems were more likely to seek multiple sources of care, with a bend towards non-

traditional health care (Mwabu, 1984), Ahmed, Tomson, Petzold & Kabir (2005) in their study of health-seeking behaviors among rural Bangladeshi determined there were no major differences in health-seeking patterns between the elderly and the young. Indeed, their study reinforced the notion that socioeconomic indicators such as income and educational status are more important predictors of health-seeking behavior than to age and even gender. The present researcher believes differences in range of health issues (older individuals tend to have more chronic health problems) between the aged population and younger individuals together with possible differences in socioeconomic variables may inform differential health-seeking patterns across the age strata. Subsequently, age was explored in the present study as a possible predictor of health-seeking behaviors among the Ghanaian population.

Nature of and Perceived Severity of Illness. The nature and perceived severity about the index illness have also been cited as important determinants of health-seeking behavior (Kanungo et al., 2015). In a recent study, Peppia, Edmunds, and Funk (2017) explored health-seeking behaviors among individuals with influenza-like illness in an internet based cohort; they found that individuals with fewer symptoms were less likely to seek medical care, while those with more severe and protracted symptoms were more likely to seek care. As cited by Okwara (1999), individuals with “non-serious” disease such as “fever” are more likely to ignore the problem altogether, or resort to self-medication at best, while those whose conditions are severe enough to interfere with routine activities of life or pose an imminent threat to life, are more likely to seek the services of a professional healer (physician or CAM practitioner) for diagnosis and treatment purposes.

Regarding nature of illness, while individuals may choose any option of care based on their social and economic circumstances, the very nature of their current illness, and their beliefs

about its cause(s) and perceptions of most effective treatment option available, influence the kind of care they seek (Kanungo et al., 2015; Koenig, 2012; Senah, 2004). In an extensive review of existing literature pertaining to religion, spirituality, and health, Koenig (2012) states that there are particularly important links between mental health diseases and religious and spiritual beliefs. His findings highlight the importance of religion and spirituality not just in the explanation of mental diseases, but also in the prevention and treatment of these types of diseases. To the extent that mental disorders are believed by many among some cultures to be caused by spiritual factors and forces, the Koenig suggests health-seeking behaviors for mental disorders among such individuals and populations tend to be tilted in favor of a “spiritual solution”, often through faith-healing or some other form of alternative health care. Researchers from Ghana (Arias, Taylor, Ofori-Atta & Bradley 2016; Edwards, 2014) report trends where sufferers of diseases believed to have supernatural and spiritual origins, mainly mental health disorders, seek and are sent to prayer camps and faith healers for spiritual healing and deliverance rather than mainstream health care facilities. The present researcher explored existing health-seeking patterns in Ghana, and how variables such as gender, age, educational and income levels influence these patterns.

Modern Medicine/Primary Care

Introduction

Modern medicine, also variously referred to as mainstream, orthodox, western, allopathic or evidence-based medicine, refers to a system of health care, where combined teams of trained professionals including doctors, nurses, and pharmacists, use various methods and agents supported by scientific evidence, to diagnose and treat diseases and medical conditions (National Cancer Institute, 2016). Modern medicine, as known and practiced today, evolved from a system

of treating illnesses based on religious and cultural beliefs, traditions, and magic, premised upon the supernatural origins of disease. The transition from accepting the supernatural cause of disease to looking for natural and physical causes of same, marked the beginning of modern medicine, largely credited to the works of Hippocrates, who initiated a system of diagnosing and treating diseases based on accumulated knowledge, clinical observation, and logical reasoning (Marketos & Skiadas 1999).

Today, modern medicine has evolved to the point where scientifically sound and high quality medical research is combined with relevant clinical experience and patient values to guide decisions regarding individual patient care, summarily referred to as evidence-based medicine (Masic, Miokovic & Muhamedagic 2008). Against a background of the preceding point, strict advocates of modern medicine have often touted modern medical care as superior, more dependable and predictable compared to all other forms of medical care and health interventions (Angell & Kassirer 1998). Subsequently, modern medical care has emerged as the standard and preferred option of care for many individuals and populations around the world (Williamson, Ramirez & Wingfield 2015).

Primary Care

The American Academy of Family Physicians (AAFP, 2017) defines primary care as comprehensive, initial, and continuing medical care provided to the undifferentiated patient in a variety of health care settings, and involves the diagnosis and treatment of acute and chronic medical conditions, patient education, and health promotion. There is considerable and growing advocacy for expanding primary care services globally, in response to scientific evidence crediting primary care with not only disease prevention and health promotion, but also as an effective tool in reducing extant health inequities (Starfield, Shi & Macinko, 2005).

Modern Medicine/Primary Care and Health Outcomes. Previous researchers and experts have found strong evidence associating better health outcomes with primary care (Starfield, Shi & Macinko, 2005). Shi (1992, 1994), in his studies on the relationship between primary health care and health outcomes, determined that U.S. states with higher primary care physicians to population ratios enjoyed more favorable health outcomes including lower mortality rates from all causes despite controlling for sociodemographic and lifestyle factors. Further support for primary care is provided in a study by Vogel and Ackermann (1998), in which increased numbers of primary care physicians and services, was associated with longer life span and better quality of life. The benefits of primary health care transcend the individual patient to help contain rising medical costs associated with specialist medical care, for services that can be managed at the primary care level, and avoid medical complications, that inflate the general costs of medical care, while improving the overall quality of health care services (Friedberg, Hussey & Schneider 2010). Indeed, the benefits and potential of primary care in improving health and health outcomes are so compelling that primary care effortlessly became one of the pillars of the WHO's Alma-Ata declaration of 1978 (Shi, 2012; WHO, 2017).

Providers of primary care vary from one jurisdiction to another, and commonly include family physicians and general medical practitioners, physician and medical assistants, pharmacists, nurse practitioners, community health nurses, and clinical officers, who provide community-based care to local populations (Shi, 2012). While serving as the first point of modern medical care in their operating communities, primary care providers also coordinate care of individuals with secondary and tertiary health facilities for onward care involving complex cases requiring specialized care and facilities.

Factors Affecting Primary Care Utilization. In line with the aforementioned benefits of primary care within the context of modern medicine, using primary care services as a first point of care following ill-health or for any health needs in general, would be expected of any individual. However, several factors influence access to and utilization of primary care services, such that there is a shortfall of primary care services and utilization across both developed and developing countries (Shi, 2012, MacLean et al., 2014). Factors affecting the utilization of primary care services range from availability, or lack thereof, of primary care facilities, providers and services, relative cost and affordability of primary care services (Grimsmo & Siem 1984), and socioeconomic and demographic variables that have been cited by past researchers in the discrepancies observed in the use of primary care services (Alsubaie, 2016; Abu-Mourad et al., 2008).

Effect of Age, Gender, Health Insurance Status, Education, Rural and Urban Status, Religion on Primary Care Utilization. Alsubaie et al. (2016) studied the socioeconomic factors associated with primary care use in Riyadh, Saudi Arabia; analyzing data from a sample of 358 participants, they found that the main determinants of primary care utilization were the presence of one or more chronic medical conditions, self-rated poor health, and possession of health insurance. In a similar study by Abu-Mourad et al. (2008), in the Gaza Strip, older age, higher incomes, unemployed status, poor self-rated health, current smoking habit, and married status were determined to be significant predictors of primary care use. In a study by Grimsmo and Siem (1984), which was conducted to determine factors associated with primary care utilization among a Norwegian population, the authors found that increasing age and presence of a chronic condition influenced primary care utilization; however, education and income level did not have any significant influence on primary care utilization, when other factors were considered.

In a comparative study of gender influence on primary care utilization rates in the United Kingdom, Wang, Hunt, Nazareth, Freemantle, and Petersen (2013) found that men had a 32 percent lower primary care consultation rate compared to women, with the greatest gender gap seen between the ages of 16 and 60 years. Interestingly, their study revealed that reproductive reasons only partially accounted for the relatively higher primary care consultation rates among women, with a near-total effacement of these differences when men and women with similar illnesses were compared.

In a study of the differences between rural and urban primary care units in Turkey, Yikilkan, Gorpelioglu, Aypak, Uysal, and Ariman (2013) determined that long distances to primary care facilities in rural compared to urban areas, coupled with fewer primary care facilities in rural areas resulted in larger patient volumes and longer waiting times at primary care facilities, all of which negatively affected primary care access and utilization. Having fewer health facilities and resources including medical personnel in rural areas compared to urban, compromises quality of available care and limits options of care, and together with socioeconomic factors such as lower incomes, may limit access to modern medical care for rural dwellers (Anderson, Saman, Lipsky, & Lutfiyya, 2015), resulting in a situation where individuals resort to other avenues for meeting medical needs.

Koenig (2012) describes the influence of religion on medical decision making by patients; he reports that religious beliefs significantly influence the type and volume of medical care sought by individual patients, as well as influence compliance with recommended treatments. As mentioned earlier, he reported that mental disorders are especially linked to spiritual factors and forces, and are more likely to provoke a search for “spiritual solutions” among sufferers, often faith-healing or some other form of alternative care.

Primary Care in Ghana. The Ministry of Health has the mandate to oversee health care delivery in Ghana, which is done through the public health care system or the private health care facilities. The public health care facilities are all government owned and are operated under the Ghana Health Service (GHS), with a few quasi-government facilities such as the military, police, and teaching hospitals which are semi-autonomous. The government facilities are organized into community-based facilities, sub-district, district and regional facilities, with each succeeding level serving as referral point for the facilities beneath it. The private hospitals are either mission hospitals, company, group or individual owned (MOH, 2015).

Ghana's National Health Insurance Scheme. Ghana successfully enacted and passed the National Health Insurance Act (Act 650) into law in 2003, paving the way for the establishment of the National Health Insurance Authority (NHIA) as regulatory body for all health insurance schemes (both public and private) in the country. This subsequently led to the establishment of the National Health Insurance Scheme (NHIS), a form of social insurance scheme under the NHIA, and the former commenced operations in 2004. With over 95 percent of all diseases afflicting Ghanaians covered, the basic package under the NHIS covers all costs, including food for inpatients, outpatient care, full payment for medicines included in an approved list, and payments for referrals in an approved list (Mensah, Oppong & Schmidt, 2010; Salisu et al, 2009).

As of 2009, the NHIS enjoyed a total subscriber base of 14,511,777 (over 60 percent of population), with 1,930 health care facilities accredited nationwide to provide services to these members including all government facilities and many privately-owned facilities such as private pharmacies, laboratories and diagnostic centers (NHIA, 2011). In 2012, it cost an annual premium of only GHS 7.2 (US \$ 4.8) to register and benefit from the services of the NHIS

described above, with free coverage for elderly citizens older than 70 years and children below 18 years (Dalaba et al., 2014; Kassena-Nankana District Mutual Health Insurance Scheme, 2012).

Current Primary Care System in Ghana. Ghana has made significant progress toward bringing primary care services closer to individuals and families in their own communities. The adoption of the community-based health planning and services (CHPS) in 2000, under which trained community health nurses serve as the first point of clinical contact and referral in addition to offering basic public health services such as immunization to local communities and individuals has since yielded a considerable improvement in health outcomes across the country (Lawson & Essuman 2016). Nevertheless, Ghana's current population-to-doctor ratio of 10,032:1 and population-to-nurse ratio of 1,240:1 as of 2011 (Lawson & Essuman 2016), fall far below the WHO's recommendation of 4.45 skilled health professionals per 1000 population (WHO, 2017). Compounding the lack of capacity to meet primary care needs by the mainstream health care workforce is the palpably skewed distribution of doctors in the country; in 2009, 69 percent of the 2,442 physicians in Ghana practiced in hospitals in the Greater Accra region or at the Komfo Anokye teaching hospital located in Kumasi, Ghana's second largest city. The uneven distribution of physicians in the country significantly affects the volume and value of primary care delivered to Ghanaians, with rural dwellers and remote communities worse affected (Snow et al., 2011). This observation is of interest to the current study, as the author believes the uneven distribution of health personnel and facilities across the country will not only influence access to primary care services, but will also affect health-seeking behaviors of individuals, with possible variations between rural and urban dwellers.

The Private Health Care System. Private health facilities contribute significantly to health care delivery in Ghana, with privately owned and managed faith-based health facilities leading the private health sector in the country (Salisu & Prinz 2009). While many of these privately-owned health facilities are accredited service providers under the NHIS, some voluntarily opt out of the scheme and take care of patients on a fee-for-service basis, where the average cost per visit is around US \$10 or accept private insurance schemes that offer better reimbursement rates for services rendered to holders of such insurance portfolios (van den Boom, Nsowah-Nuamah & Overbosch 2007).

With private, for-profit health facilities enjoying a perceived better responsiveness, shorter waiting times and overall quality of services than public and not-for-profit facilities among the general population, a study by Awoke et al., (2017) revealed older age group, higher education and higher income as significant predictors of primary care at private health facilities in Ghana, while individuals with health insurance, particularly those covered by the NHIS were more likely to seek primary care services at a public outpatient facility. In the current study, health insurance status will be explored together with other variables in the study of health-seeking behaviors among Ghanaians, in the face of other existing avenues for satisfying health care needs of individuals.

Other Factors Affecting Primary Care Utilization in Ghana. Other studies conducted in Ghana to determine the factors affecting the utilization of primary care services confirm the importance of some of the factors in primary care behavior as discussed in the preceding sections. Buor (2003) studied the effect of distance on the utilization of health services in the Ahafo-Ano South District. Analyzing data from a sample of 400 participants, the author found that increasing distance and travel time to health facilities resulted in reduced use of health

services including primary care services, such that residents in these communities resorted to other avenues for satisfying their health care needs. The results of this study also suggested income, cost of health services and educational level as important as important predictors of primary care usage in the communities in this area.

A study by Addai (2000) on the factors affecting utilization of maternal and child health (MCH) services in rural Ghana showed that the use of MCH services in rural Ghana is variously informed by educational level, religious beliefs, region of residence as well as occupation and ethnicity. It will be interesting to see how some of these factors such as religious beliefs and ethnicity affect health-seeking behaviors in the present study.

Self-Medication

Introduction

Self-medication refers to the use of selected medicines and medicinal products, including patent drugs and herbal preparations, for the purposes of treating self-diagnosed medical problems or symptoms (Ruiz, 2010), and without the advice of a trained health care provider such as a physician (Montastruc, Bagheri, Geraud & Lapeyre-Mestre, 1996). Self-medication has been described as a global phenomenon with significant contributions to pathogen resistance to existing antimicrobial agents (Bennadi, 2013). The practice of self-medication may involve the use of patent drugs (both prescription and non-prescription), herbal/traditional medications or a combination of these, and serves as an important avenue for meeting health needs among individuals and communities without access to formal health services (Selvaraj, Kumar & Ramalingam 2014). Most people will have tried one form of self-medication or another throughout the course of their life time, and while over-the-counter medications are generally available, and indeed useful for such purposes as treating minor illnesses (Vizhi & Senapathi

2010), the unguided use of any medications may present serious health implications for the individual such as adverse drug reactions, with graduated, undesirable multiple economic and social effects on the larger society (Selvaraj, Kumar & Ramalingam 2014).

Self-Medication and Health Outcomes

Despite the many challenges and disadvantages posed by self-medication, which virtually eclipse any merits to the practice, there are benefits of self-medication that need to be situated in context, as relevant to the purposes of this dissertation. Indeed, self-medication is not entirely a bad practice; it saves money and time, and as mentioned previously, partly fills the gap for individuals and communities without adequate access to formal health care facilities and personnel (Selvaraj, Kumar & Ramalingam 2014). To the extent that access to universal health care continues to elude many the world over, self-medication has been progressively integrated into some health care systems around the world, with the deregulation of many, hitherto prescription only medications to over-the-counter status, and found to be helpful for individuals with better education and higher overall socioeconomic status (WHO, 2000).

Benefits of Self-Medication. Self-medication has benefits for both the individual patient as well as the health care system. Benefits to the individual include empowerment to make medical decisions toward their own care for minor ailments, convenience, as well as reduction in treatment costs and time spent seeking treatment in formal health care settings (Hughes, McElnay & Fleming, 2001). Benefits to the health care system occur in the form of reduced pressure on medical resources and personnel, especially in publicly funded health systems, as well increased access to medications and the potential to reduce costs associated with prescribed drugs (Hughes, McElnay & Fleming, 2001). In a study by Stearns et al. (2000) on the economic implications of self-care for Medicare beneficiaries, self-medication was found to improve the

health status of participants, with desirable spillover effects of reductions in Medicare expenditures associated with care for such individuals.

Risks Associated with Self-Medication. Despite the benefits associated with self-medication as described above, there are important risks connected with the practice that ought to be considered as well. Documented risks associated with self-medication include misdiagnosis and concomitant use of inappropriate medications or dosages, drug-drug interactions and adverse reactions, development of drug dependence, and polypharmacy (Hughes, McElnay & Fleming, 2001). The misapplication of self-medication in the form of misdiagnosis, inappropriate treatment or a combination of both, may also lead to the development of medical complications with varying threats to life and disability, and concomitant increases in definitive treatment costs to the individual and health care system (Ruiz, 2010; Vidyavati, Sneha, Kamarudin & Katti 2016), in addition to the emergence of pathogen resistance owing to the irrational use of antimicrobial agents in poorly regulated health care systems, mainly in the developing world, add to the list of compelling disincentives for self-medication (Vidyavati, Sneha, Kamarudin & Katti 2016).

Determinants of Self-Medication

Several factors including education, income, perceived severity and type of index illness (Zhao & Ma, 2016), cultural beliefs and family influences, availability of drugs, regulatory frameworks and existing laws, and exposure to drug advertisements variously influence self-medication behaviors (Sarahroodi 2012). For the purposes of this study, literature relating to selected variables of interest and how they affect self-medication was reviewed.

Income and Self-Medication. A motley of literature exists on the effect of income as a determinant of self-medication. Based on the findings from some studies, researchers determined

that individuals with higher incomes were more likely to engage in self-medication (Gelayee, 2017; Oztora, Nepesova, Caylan & Dagdeviren, 2017), while other researchers (Al-Azzam, Al-Husein, Alzoubi, Masadeh & Ali 2007; Awad, Eltayeb & Capps 2006) reported that lower incomes were associated with and more predictive of self-medication. In the present study, the influence of income on self-medication practices among Ghanaians was explored to determine how this agrees or varies with other studies.

Education and Self-Medication. Like income, studies on the relationship between education and self-medication are inconsistent in findings. In national studies conducted in Greece (Papakosta, Zavras & Niakas 2014), China (Yuefeng, Keqin & Xiaowei, 2012) and Turkey (Nur, 2010), where the emphasis was on herbal self-medication, researchers ascertained that self-medication was more prevalent among individuals with higher education and/or more medical knowledge (Zhao & Ma, 2016). Conversely, in a study on self-medication for diabetes in Iran, opposing findings were reported, where individuals with lower education were more likely to self-medicate, while a study in Argentina on self-medication for eye-related conditions reported no significant effect of the different levels of education (Marquez et al., 2012).

Gender and Self-Medication. Gender differences in self-medication patterns have also been reported. Some past researchers report significantly higher rates of self-medication among females (Alavi, Alami, Taefi & Gharabagh, 2011; Cherniack et al., 2008). In other studies in parts of India (Selvaraj, Kumar & Ramalingam, 2014) as well as a national study on use of analgesics in Spain (Carrasco-Garrido, 2010), opposing findings were revealed, such that self-medication was more prevalent among males (Zhao & Ma, 2016).

Health Insurance Status and Self-Medication. Having health insurance is variously tied to income and socioeconomic status, and has been determined to have a significant influence

in health-seeking behavior in general. Applicable mainly for mainstream clinical care, a study in Mexico found that individuals without health insurance coverage had a higher likelihood of engaging in self-medication (Pagan, Ross, Yau & Polsky, 2006), since it is a cheaper option compared to out-of-pocket payment for medical care in a clinical facility. Similar results were found in a study by Jafari, Khatony, & Rahmani (2015), who reported a significantly higher prevalence of self-medication among the uninsured elderly in Kermanshah-Iran.

Age and Self-Medication. The effect of age on self-medication has been studied extensively with disparate findings. In studies in India (Kumar, Mangal, Yadav, Raut & Singh, 2015), Pakistan (Humayun et al., 2016) and Jordan (Yousef, Al-Bakri, Bustanji, & Wazaify, 2008) higher prevalence of self-medication among younger subjects was reported. The opposite was found in other studies as reported by Jafari, Khatony and Rahmani (2015) as well as Sarahroodi, Maleki-Jamshid, Sawalha, Mikaili, and Safaeian, (2012), who found significantly higher rates of self-medication among older individuals who tend to have multiple chronic conditions for which they self-medicate, while Aqeel et al., (2014) found no significant differences in self-medication behaviors among different age groups.

Rural-Urban Differences in Self-Medication. Opportunities for seeking and receiving medical treatment vary between rural and urban areas. Lack of time has been cited for the higher prevalence of self-medication in urban areas, while lack of health care facilities and financial reasons appear to influence self-medication in rural areas (Aqeel, 2014). Past researchers have documented significant differences in self-medication behaviors between urban and rural dwellers. In studies in India (Balamurugan & Ganesh, 2011) and China (Yuefeng, Keqin & Xiaowei, 2012) there was a significantly higher prevalence of self-medication in urban compared to rural areas. Nevertheless, the practice of self-medication is rife in rural communities, and has

been the focus of many studies around the world (Marak, Borah, Bhattacharyya, & Talukdar, 2016; Keche et al., 2012; de Melo et al., 2006).

Self-Medication in Ghana

With wide and relatively easy access to nonprescription, prescription, and herbal medicines in Ghana, self-medication is a fairly common practice (Biritwum, Welbeck & Barnish, 2000). The weak regulation of prescription and non-prescription drug sales as well as the poorly regulated traditional/herbal medicine industry, make it quite easy to purchase and use any medication including antibiotics and other antimicrobial agents without a trained health professional's advice and/or prescription. Indeed, it is not uncommon to find drug peddlers with little or no formal training in pharmaceutical products and drug dispensing (both patent and herbal drugs) in public places such as market areas, places of worship (including mosques and churches) and public buses, gleefully marketing their drugs and making recommendations for treatment of various conditions to the public. To the extent that self-medication is now considered endemic in parts of Ghana, Asenso-Okyere, Anum, Osei-Akoto, and Adukonu (1998), advocate training of drug peddlers and attendants of drug stores to at least improve the safety and use of drugs for self-medication practices.

In a survey study involving 600 respondents on self-medication practices with antibiotics among tertiary students in Ghana's capital city, Accra, Donkor, Tetteh-Quarcoo, Nartey, and Agyeman (2012) report a self-medication prevalence of 70 percent with a common frequency of monthly antibiotic usage; they also found that students in the medical sciences were less likely to self-medicate, while the relatively cheaper cost of self-medication compared to care in a hospital was cited together with long delays at hospitals as reasons for engaging in self-medication. Additionally, they found that 49 percent of the study participants had poor knowledge about the

health implications of irrational antibiotic usage, while 46 percent neither complied with the recommended dosages nor completed the full course of the antibiotics, raising serious concerns of building antibiotic resistance. In a similar study on the use of antimicrobials for self-medication purposes among patients attending a sexually transmitted diseases clinic, Adu-Sarkodie (1997) reports that 74.5 percent of respondents self-medicated with antimicrobials obtained over the counter, from friends or as 'left-overs' from previous treatments prior to visiting the clinic following treatment failure. In the present study, the scope of self-medication as an avenue for satisfying health needs among Ghanaians will be explored on a broader scale, together with possible modulating factors such as age, educational status, and related factors using the Health Belief Model.

Traditional/Herbal Medicine

Introduction

The WHO (2007) defines traditional medicine as “the combination of knowledge, skills, and practices based on the theories, beliefs, and experiences indigenous to different cultures, whether explicable or not, used in the maintenance of health as well as in the prevention, diagnosis, improvement or treatment of physical and mental illness”. Modern medicine is thought to have evolved from traditional medicine, which is still widely practiced globally today; indeed, an estimated 70 to 95 percent of the populations in developing countries in Africa, Asia, and Latin America are said to rely on traditional/herbal medicines procured through local practitioners or as self-medication for satisfying primary care needs (Robinson & Zhang 2011).

It is clear from available literature that traditional/herbal medicine not only fills in the gap where modern medical care is nonexistent or inaccessible, it is in some cases, the only option of health care available to individuals and communities, and for many others, simply a preferred

option of health care (Qi & Kelley 2014). While some experts advocate the integration of traditional/herbal medicines into mainstream health care (Chi, 1994; Gqaleni, Moodley, Kruger, Ntuli & McLeod 2007; Patwardhan & Partwardhan 2005), others strongly suggest caution in any such calls (Ekor, 2013), with both proponents and opponents referring to the heavy mix of research findings highlighting the pros and cons of traditional/herbal medicine and associated practices.

Traditional/Herbal Medicine and Health Outcomes

Traditional/herbal medicines and associated practices have been and are used to treat a broad variety of medical conditions and satisfy other health needs among various populations globally (WHO, 2007). As discussed previously, traditional/herbal medicines existed long before the introduction of modern medicine; indeed, modern medicine is largely believed to have evolved from the practice of traditional medicine. Despite growing interest in many parts of the world regarding use of traditional/herbal medicines as an alternative to modern medicine, few scientific studies have investigated the therapeutic effectiveness of traditional/herbal treatments to date (Ekor 2014).

To the extent that traditional/herbal treatments and practices vary widely within and across national and international borders, such that their effectiveness and quality are at the mercy of a wide array of factors, it is difficult to establish a parallel system of standards and methods for evaluating their therapeutic effectiveness and associated factors such as safety. This has culminated in paucity of scientific data supporting the use of such treatments and raised suspicion among practitioners and strict advocates of modern medicine, many of whom oppose the increasing calls for integrating traditional/herbal medicines into main stream medical care (WHO, 2002; Zhang, Xue & Fong, 2011).

Determinants of Traditional/Herbal Medicine

The apparent lack of adequate scientific support for the safety and efficacy of traditional/herbal treatments notwithstanding, there is no denying that these treatments not only serve the health needs of individuals and communities where there are no modern medical alternatives, they are a preferred option of health care for many individuals and provide an alternative to many others looking for medical solutions outside the purview of modern medicine. In the wake of growing use of traditional/herbal treatments globally, many researchers have sought to evaluate the factors that influence the use of such treatments among various populations.

Age and Traditional/Herbal Treatments. Generational gaps, beliefs, experiences, and range of medical conditions may be important determinants of traditional/herbal treatment use. Stjernberg, Berglund and Halling (2006) studied the effect of age on the use of herbal medicines in a Swedish population; they report a trend of decreasing use of herbal medicines for treatment purposes with increasing age. Similar findings are reported in a study by Duru et al. (2016), in which they reported decreasing use of herbal/traditional medicines with increasing age among pregnant Nigerian women visiting a tertiary health facility. In another study on the effect of age on use of traditional/herbal treatments among women attending a fertility clinic in Uganda, Kaadaaga et al. (2014) reported significantly higher use of traditional/herbal treatments among younger women (aged 30 years or less) compared to older women (aged more than 30 years).

Gender and Traditional/Herbal Treatments. Gender roles and socialization may be another important determinant of traditional/herbal medicine use, together with possible differences in disease presentation and appraisal between women and men. Many previous researchers have found that use of traditional/herbal medicines is significantly higher among

women compared to men (Jawahar, Yang, Eaton, McAlindon & Lapane, 2012; Kristoffersen, Stub, Salamonsen, Musial & Hamberg 2014; Shih, Liao, Su, Tsai & Lin, 2012; Stjernberg, Berglund & Halling, 2006). Kristoffersen, Stub, Salamonsen, Musial, and Hamberg (2014) further offer that women report a significantly higher usage of traditional/herbal medicines because of less satisfaction with modern medical treatments, prompting a need for alternative solutions to their medical problems.

Education and Traditional/Herbal Treatments. Educational attainment has been established as an important component of socioeconomic status such that individuals who are better educated tend to have greater access to and utilization of health care services (Goldman & Smith 2002). Gerald and Ogwuche (2014) forward that individuals who are better educated generally have a better understanding of their current medical problem, their therapeutic options and respective effectiveness, and are therefore more likely to make better health care choices.

A study of by Laelago, Yohannes, and Lemango (2016) illustrates the relationship between educational level and use of traditional/herbal treatments; in their study of the effect of educational attainment on use of traditional medicines in Southern Ethiopia, the authors report that women with lower educational attainment were more likely to use traditional/herbal treatments during pregnancy compared to women with higher educational attainment. A study by Duru et al. (2016) not only supports the findings that individuals with higher educational attainment are less likely to use traditional/herbal medicines, but also reports that women whose spouse had a higher educational level were less likely to use traditional/herbal treatments during pregnancy.

Income and Traditional/Herbal Treatments. Income has already been discussed as an important determinant of health-seeking behavior such that the ability to afford different

therapeutic options may directly influence choice of health care or indirectly through health insurance coverage. Traditional/herbal treatments are generally less expensive compared to modern medical treatments for comparable conditions (Pathak & Das, 2013). In a comprehensive review of studies investigating traditional/herbal medicine use for treatment of malaria in Asia pacific countries, Suswardany, Sibbritt, Supardi, Chang, and Adams (2015) report low incomes as the commonly cited reason for resorting to traditional/herbal treatments. Findings from other researchers generally agree that individuals with lower incomes are more likely to turn to the relatively cheaper herbal treatments for their health care needs (Duru, 2013; Shewamene, Dune & Smith, 2017; Yeh, Lin, Chen, Wang & Huang, 2015). As previously discussed, health insurance coverage is influenced by income status, which will make it a good proxy for income as a determinant of traditional medicine use. However, Gyasi (2015), in his study on factors associated with use of traditional medicines in Ghanaian health care settings, showed no statistically significant difference in use of traditional/herbal medicines between insured and uninsured participants.

Rural-Urban Differences in Traditional/Herbal Treatments. Availability of therapeutic options vary widely between rural and urban communities. Subsequently, access to therapeutic options may be limited depending upon their availability in a place of residence. Urban communities tend to have more social amenities and medical resources compared to rural communities (Spasojevic, Vasilj, Hrabac & Celik, 2015). According to the WHO (2013), use of traditional/herbal treatments is pervasive among rural populations due to non-availability of public health facilities. A study by Adams, Sibbritt and Lui (2011) illustrates rural-urban differences in use of traditional/herbal treatments; analyzing data for over 10,000 participants from an Australian population, the authors found that use of traditional/herbal treatments is

significantly higher among rural dwellers compared to urban residents, and dissatisfaction with modern medicine was reported as the leading reason for use of traditional/herbal medicines.

Rural-urban differences in use of traditional/herbal treatments are further highlighted by Uzochukwu, Onwujekwe, Onoka, and Ughasoro (2008); in a study of responses to childhood fever in South-Eastern Nigeria, while rural mothers were more likely to recognize danger signs and symptoms of ill-health among their children, they were also more likely to resort to herbal/traditional medicines at home for management of childhood febrile illnesses compared to urban mothers. The authors suggest that while differences in other sociodemographic variables such as education may partly account for this finding, the relative lack of access to health facilities (due to unavailability or longer distance to care center) in rural compared to urban areas may be a significant contributor to the use of traditional/herbal medicines in rural areas.

Perceived Illness Severity and Traditional/Herbal Treatments. As discussed previously, individual appraisal of current medical condition or needs may also inform choice of health care, such that those who perceive their condition to be more serious and life-threatening will seek what they believe to be the best option of care available and accessible to them. An illustration of the effect of perceived illness severity on use of traditional/herbal treatments is provided by Jaime-Pérez et al. (2012); despite not finding statistically significant differences (64.7% versus 41.7%; p -value = 0.08), the authors report a higher use of traditional/herbal medicines among individuals who perceive their current condition to be non-life-threatening.

Yang, Corsini-Munt, Link, and Phelan (2009) studied the implications of perceived effectiveness of traditional Chinese medicine (TCM) on mental health service utilization among Chinese-Americans; they reported that while perceived illness severity was generally unrelated to assessment of TCM, respondents viewed TCM less favorably for mental disorders, and were

less likely to use or recommend TCM for mental disorders. In a mixed methods study to determine the factors associated with traditional/herbal treatment use in Tanzania, Stanifer et al. (2015) reported that chronic, noncommunicable ailments were especially cited as a reason for using traditional/herbal treatments. Deducing from the findings of the aforementioned studies, individuals who believe traditional/herbal treatments are effective are likely to use them for treatment of illnesses perceived to be serious. Additionally, lack of satisfaction with treatment progress for chronic, noncommunicable diseases, appears to be another important influence of traditional/herbal medicine use, as sufferers scout for alternative solutions to their medical problem(s).

Religious Beliefs, Ethnicity and Traditional/Herbal Treatments. Traditional/herbal treatments have been described as integral parts of sociocultural systems, and while they vary between ethnicities and religious groups, form part of the belief system and practices of many local populations (WHO, 2005). While some researchers have documented a positive relationship between religiosity (in general, irrespective of religious affiliation) and use of traditional/herbal treatments (Heathcote, West, Hall & Trinidad, 2011; Nicdao & Ai, 2014), the present researcher did not find any studies comparing religious differences in use of traditional/herbal medicines.

Traditional/herbal treatments and practices vary widely between ethnic groups and locations. In their study on herbal medicine use in selected districts of Uganda Tabuti, Kukunda, Kaweesi, and Kasilo (2012) revealed that differences in knowledge of traditional/herbal treatments not only existed between the different ethnic groups in these districts, they accounted for significant differences in use of herbal treatments such that ethnic groups with wider knowledge of herbal treatments and practices used more herbal treatments compared to those with little

knowledge. This may suggest that previous exposure to and experience with herbal treatments may partly explain any observed differences in herbal medicine use between ethnic groups.

Traditional/Herbal Medicine in Ghana

Traditional/herbal treatments existed long before the introduction of modern medicine in the Africa (Abdullahi, 2011) and continue to serve the health needs of many Ghanaians. As discussed previously, traditional medicine has undergone significant transformation in Ghana, to the point where there are now “scientific herbal clinics” across various parts of the country. According to Aziato and Antwi (2016), the growing appeal and use of traditional/herbal medicines in Ghana has necessitated decent attempts by successive governments to improve the knowledge, safety, and efficacy of these practices through training programs, standardization, and regulatory measures. Despite these efforts, traditional/herbal medicine use and practices remain poorly regulated in Ghana, leading many practitioners in mainstream medicine to oppose attempts to integrate traditional/herbal medical care into public health facilities (Asante & Avornyo, 2013).

Facilitators of traditional/herbal medicine use among Ghanaians include perceived ineffectiveness of mainstream medicine, perceived effectiveness of traditional/herbal medicines, preference for herbal medicines and integration of spirituality in traditional/herbal treatments, while barriers to traditional/herbal medicine use include negative perceptions and unfavorable attitudes towards traditional/herbal treatments, as well as previous undesirable experience with traditional/herbal treatments (Aziato & Antwi 2016). The determinants of traditional/herbal treatments as a preferred first point of call following ill-health, will be explored further in the present study.

Faith Healing

Introduction

Faith healing is defined as healing achieved by religious belief, prayer, and practices rather than by medical treatment (Pattison Lapins & Doerr 1973). Faith healing is largely premised on the spiritual causation of disease and the concomitant notion that supernatural forces and/or magic can be invoked to neutralize these spiritual causes of malady, leading to healing (Dahl, 1960). The history of faith healing is long, and can be traced back to the era when primitive religious beliefs were inextricably tied to primitive medicine such that the primitive healer was a rudimentary blend of physician and priest (Dahl, 1960).

Faith healing as practiced today, involves prayers and religious rituals, varies substantially between cultures, religious groups and individuals, and may be done in isolation, as a group, or under the direction of a recognized faith healer, who often doubles as a religious leader such as priest or imam, and may occur at home, religious house (such as church, mosque, shrine, or temple), or another designated place (Ateeq, Jehan & Mehmmod, 2014).

Faith Healing and Health Outcomes

Research on the effect of faith healing on health and health outcomes is sullied with contradictions and assumptions that essentially pit science against religion, as science struggles to understand and/or explain the potential mechanisms underlying faith healing, while religion simply describes and accepts it as miraculous healing due to faith (Andrade & Radhakrishnan, 2009). Research findings on the health outcomes of faith healing are therefore, heavily mixed.

In a randomized control trial of the effects of intercessory prayers on patient outcomes in a cardiac unit, Harris et al. (1999) report that compared to the standard care group (n = 524), the prayer group (n = 466) recorded better coronary care outcomes, suggesting that intercessory

prayers were associated with better patient outcomes. A similar study by Cha, Wirth, and Lobo (2001) on the effect of prayers on fertility outcomes among a study sample in Seoul, South Korea, demonstrated that compared to the standard group, women who had been prayed for recorded nearly two times the pregnancy rate for the standard group (50 vs. 26%; $p < 0.005$) after controlling for variables such as clinical or laboratory variables.

Other researchers did not find any significant effects on health outcomes following faith healing. As an example, Aviles et al. (2001) studied the effects of intercessory prayers on disease progression in a coronary care unit; they report that no statistically significant differences were observed for the standard group and the treatment/prayer group. In a similar study, Astin, Stone, Abrams, and Moore (2006) found no significant differences in health outcomes between the standard group and treatment/prayer groups after intercessory prayers by both professional healers and nurses for patients with opportunistic infections due to immunodeficiency syndromes.

A third group of researchers found that faith healing resulted in worse health outcomes. In a triple blind, randomized control trial of the effect of intercessory prayers on recovery after coronary bypass surgery, Benson et al. (2006) report that despite having no effect on complication-free recovery after surgery, receiving intercessory prayers was associated with a higher rate of postsurgical complications.

Determinants of Faith Healing

Many factors appear to influence the belief in and practice of faith healing. Among the most closely associated are gender, socioeconomic status, and rural-urban differences.

Gender and Faith Healing. Gender differences in faith healing behaviors have been documented by some researchers. As an example, Saeed, Gater, Hussain, and Mubbashar (2000)

studied the characteristics of seekers of faith healing for mental disorders by professional faith healers in Pakistan; they reported significant differences between men and women, such that the practice was more prevalent among women, who were also more likely to have more confidence in the health outcomes of faith healing for mental disorders. In a cross-sectional study of prayer and spiritual healing among Australian women, Rao, Sibbritt, Phillips, and Hickman (2015) reported a prevalence of faith and spiritual healing of 26 percent, with relatively higher rates among sufferers of chronic ailments.

Education, Income and Perceived Illness Severity, Socioeconomic Status and Faith Healing. Socioeconomic status as manifested by educational and income levels, together with illness type and perceived severity has also been documented by previous researchers as important determinants of faith healing. In a study of sociocultural factors associated with use of spiritual healing churches in Ibadan, Nigeria, Adegoke (2007) reported a significant relationship between educational level and spiritual healing, such that poor women were more likely to resort to spiritual healing. The researcher also reported that individuals in the lower income categories were more likely to use faith and spiritual healing services, while those who perceive their current illness to be caused by supernatural forces and factors such witchcraft, were also determined to be more likely to seek faith and spiritual healing. Other studies by Odebiyi (1980) and Adegoke (1997) not only support the finding that individuals with lower educational and income levels are more likely to use spiritual and faith healing services, but also suggests that individuals are more likely to perceive their conditions to be caused by mystical and supernatural causes, and tend to look to faith and spiritual healing for solutions mainly because they offer a cheaper alternative to mainstream care as well as offer an effective solution to their medical problems since spiritual problems require spiritual solutions.

Rural-Urban Differences in Faith Healing. As discussed previously, the distribution gap of modern medical facilities between rural and urban communities may lead to the development and widespread use of alternative forms of treatment including faith healing in rural communities. Variations in cultural beliefs and practices may also partly explain any differences in faith healing behaviors between rural and urban dwellers. Baniya (2014) observes that rural folks and communities are more resistant to changes in cultural beliefs and practices, and are more likely to stick to traditional modes of healing including faith healing.

The preceding points are highlighted in a study by Sherra, Shahda, and Khalid (2017); in a study to determine the role of culture and faith healers in the treatment of mood disorders in rural compared to urban areas in the United Arab Emirates, the authors found that rural patients had more confidence in faith healing, and were twice as likely to seek faith healing services as their first point of call compared to urban patients. The authors further report that more family members of mental disorder sufferers believed in the mystical and supernatural causation of the disorder(s) in rural compared to urban dwellers. Ateeq, Jehan, and Mehmmod (2014) also determined that faith healing is significantly more common in rural compared to urban areas. In explaining the significant differences in perception and faith healing behaviors between rural and urban communities, Sherra, Shahda, and Khalid (2017) forward that the lack of availability of public health facilities coupled with financial limitations, made faith healing more probable among rural compared to urban dwellers.

Faith Healing in Ghana

To the extent that most Ghanaians are affiliated with one religious belief or the other (Senah, 2004), faith healing, which owes its roots to religion and spirituality, is widespread in Ghana, and is operated at many levels from individual level through organized prayer camps and

healing centers to faith healing through mass media. While faith healing in Ghana cuts across all religious groups and disease conditions in Ghana, the practice seems especially common for diseases believed to have spiritual origins as mentioned by other researchers, of which mental disorders abound (Odebiyi, 1980; Adegoke, 1997).

In a qualitative study to explore the widespread appeal of faith healing in Ghana, Aengibise et al. (2010) reported that because of cultural perceptions of mental disorders, particularly those regarding supernatural causes, the psychosocial support from faith healers together with availability, accessibility, and affordability of faith healing services, made them a preferred point of call for sufferers of mental disorders and their families. In another qualitative study, Kyei, Dueck, Indart, and Nyarko (2014) explored supernatural belief systems, mental health, and perceptions of mental disorders in Ghana; they reported that while faith healing practices were commonly reported across all religious groups, participants also generally looked at modern medical treatments for mental disorders, such as psychotherapy, favorably. In a comparative study involving practitioners of Christianity, Islam, and Traditional African Religion, regarding child survival and faith in Ghana, Gyimah (2007) reported that after controlling for mediating and confounding variables, such as socioeconomic status, no significant differences were observed for child survival rates as reported by participating mothers across the three religious beliefs.

Theoretical Framework

The Health Belief Model (HBM) was selected to give a theoretical foundation to the current study. First developed in the 1950s to explain and predict health-related behaviors (Hochbaum, 1958), the HBM remains widely used in health behavior research to date (Glanz et al., 2008). The choice of HBM for this study was informed by the simple reason that the model

has been used widely in the study of health behavior in different contexts among various populations, and has consistently bespoken appreciable utility in health behavior studies (Becker et al., 1979; Cockerham, 1992). In line with the foregoing points, the present researcher believes the HBM is well situated to explain the connections between the sociodemographic variables of interest and health-seeking behaviors among the Ghanaian population.

Health Belief Model

The HBM posits that people's beliefs about the seriousness of a health problem (Perceived Severity), how likely they are to develop the health problem (Perceived Susceptibility), what they stand to benefit from engaging in preventive and/or health-promoting behaviors/actions (Perceived Benefits), their assessment of the obstacles to adopting the preventive and/or health-promoting behaviors/actions (Perceived Barriers), and immediate pushing factors which may be internal such as pain, or external such as information from close friends (Cues to action) act together to determine whether or not a particular person will engage in these preventive or promotional health behaviors (Rosenstock, 1974). In other words, the HBM forwards that for individuals to engage in preventive or health promoting behaviors, they must possess a minimum knowledge of health as it relates to the specific condition, believe that the condition is serious and/or life-threatening and that they are in danger of contracting or succumbing to the condition, and finally, they must believe that engaging in the proposed preventive and/or health promoting behaviors will neutralize their vulnerability to the condition, while also foreseeing no significant barriers to engaging in these behaviors.

To the extent that an individual's subjective appraisal of their index illness and related factors may be so important in determining their choice of health care (Cockerham, 1992), the HBM applies to the current study as follows: 1) individual perceptions about the severity of

current illness will inform health-seeking behaviors 2) individual perceptions about susceptibility to illness in general will inform health-seeking behaviors 3) beliefs regarding therapeutic effectiveness of health care options will inform health-seeking behaviors 4) beliefs regarding barriers to some health care options such as higher cost of care, availability, and distance to care facilities will inform health-seeking behaviors, and 5) previous experience with different care options and observation of treatment outcomes of other people from different care options will inform health-seeking behaviors for current and future illnesses (cues to action). Self-efficacy was not considered as a construct of interest in the present study because the present researcher did not find it significantly aligned with the purposes and scope of the current study, where the focus is on modulating factors such as age, gender, educational and income levels, and how these factors influence health-seeking behaviors in the context of the selected constructs, namely perceived severity of illness, perceived susceptibility, perceived benefits, perceived barriers and cues to action.

Summary

Health-seeking behaviors have been demonstrated to significantly influence health and health outcomes (Currie & Wiesenberg, 2003). While different avenues exist for meeting the health needs of individuals and communities in various parts of the world, these avenues not only vary widely in scope, but more importantly, they also vary in their efficiency and effectiveness in treating various medical conditions, such that some may be more effective and efficient than others as supported by scientific evidence and research (Ruiz, 2010; Ernst, 2003). To the extent that all health consumers share a common basic need to prevent, treat, and improve their current medical condition or improve their health status, the choice of health care sought for a given

condition rests, to a large extent, on what the seeker believes to be the most efficient, effective, and affordable option of care available.

Despite a shared desire for positive treatment outcomes, not all individuals have the same opportunities for seeking and receiving health care services. An extensive review of the literature pertaining to health-seeking behaviors revealed that different factors influence health-seeking behaviors of individuals around the world. Some of the important factors influencing health and health-seeking behaviors include gender, age, education, income, sociocultural beliefs and practices, place of residence, availability, accessibility and affordability of health care services, individual perceptions about the causation of various diseases as well as perceived effectiveness of the various treatment options available (Akeju et al., 2016; Audu et al., 2014; O'Donnell, 2007; Shaikh & Hatcher 2005).

Ghana has a pluralistic health environment, where there are different, mostly competing options of health care. Wide variations in demographic, sociocultural, and socioeconomic factors among Ghanaians, therefore, predispose them to differences in health-seeking behaviors, some of which lead to needless loss of lives and disability due to ineffectiveness and/or inefficiencies. In order to address the fallout from these disparities in health and health outcomes due to health-seeking behaviors among Ghanaians, a thorough understanding of the factors affecting health care options is necessary. The current study aimed to arm future researchers and policy makers with a foundation upon which educational intervention programs can be developed and implemented to improve health-seeking behaviors among Ghanaians, with the view to improving health and health outcomes among them.

CHAPTER 3

METHODS

Introduction

This chapter presents a comprehensive overview of the proposed methodology to answer the research questions advanced in chapter one. As a prelude to the main discussion on the proposed methodology, the chapter opens with a review of the purpose and significance of this study to health education as well as the research questions addressed, before providing a thorough discussion of the quantitative design, research method, sample and participant selection, data collection, instrumentation, and proposed data analysis.

Purpose of the Study

The purpose of this study was two-fold – 1. to create and validate a comprehensive survey instrument for evaluating the factors that influence health-seeking behaviors among Ghanaians using selected constructs of the Health Belief Model (HBM) and 2. use the survey instrument created, to study factors that determine and/or predict health-seeking behaviors among Ghanaians.

Significance to Health Education

To the extent that health outcomes are influenced by health-seeking behaviors, this study is significant to health education such that, by seeking to provide an understanding of the factors that inform health-seeking behaviors among Ghanaians, it can provide a solid foundation upon which health education intervention programs that improve health-seeking behaviors among Ghanaians and lead to better health outcomes and overall quality of life are based. The creation and validation of a comprehensive instrument will also serve as a useful resource for health

education researchers interested in understanding health-seeking behaviors in other settings, particularly within the sub-Saharan Africa sub-region.

Quantitative Design

As reviewed previously, the aim of the current study was to design a comprehensive survey instrument to evaluate the factors that influence health-seeking behaviors among Ghanaians, and to use this instrument to study the determinants and predictors of health-seeking behaviors among Ghanaians. To the extent that the present researcher gathered information regarding health-seeking behaviors among Ghanaians, and the factors that influence these behaviors, from a representative sample of the Ghanaian population, conducted statistical analyses and drew conclusions based upon the data retrieved from this sample, and subsequently generalized the findings from this sample to the entire Ghanaian population, a quantitative method of enquiry was both described and used to answer the research questions of interest (Creswell, 2003).

Research Questions and Hypothesis

To focus the scope and direction of this study further, the following working hypotheses were developed in relation to the research questions of interest. Research question one represents the dependent variables (choice of healthcare), hence specific hypotheses were skipped for this question.

- 1) What is the first point of call for seeking healthcare among Ghanaians?
- 2) Which sociodemographic factors influence choice of first point of call for healthcare among Ghanaian healthcare consumers?

Hypotheses for Research Question Four

H2a. First choice of care differs by age group.

- H2b. First choice of care differs by gender.
 - H2c. First choice of care differs by educational level.
 - H2d. First choice of care differs by income level.
 - H2e. First choice of care differs by religious affiliation.
 - H2f. First choice of care differs by place of residence.
 - H2g. First choice of care differs by health insurance status.
 - H2h. First choice of care differs by ethnic group.
 - H2i. First choice of care differs by marital status.
 - H2j. First choice of care differs by region
- 3) Are there any relationships between selected constructs of the HBM and first point of call for healthcare among Ghanaians?

Hypotheses for Research Question Three

- H3a. First choice of care is associated with perceived severity of illness.
 - H3b. First choice of care is associated with perceived susceptibility to illness.
 - H3c. First choice of care is associated with perceived benefits of type of care.
 - H3d. First choice of care is associated with perceived barriers to mainstream care at government health facilities?
 - H3e. First choice of care is associated with perceived barriers to mainstream care at private health facilities?
 - H3f. First choice of care is associated with cues to action of each care type available?
- 4) What are the sociodemographic predictors of health-seeking behaviors among Ghanaians?

Hypotheses for Research Question Five

H4a: Age predicts health-seeking behaviors among Ghanaians.

H4b: Gender predicts health-seeking behaviors among Ghanaians.

H4c: Marital status predicts health-seeking behaviors among Ghanaians.

H4d: Educational level predicts health-seeking behaviors among Ghanaians.

H4e: Income level predicts health-seeking behaviors among Ghanaians.

H4f: Place of residence predicts health-seeking behaviors among Ghanaians.

H4g: Religious affiliation predicts health-seeking behaviors among Ghanaians.

H4h: Health insurance status predicts health-seeking behaviors among Ghanaians.

H4i: Ethnic group predicts health-seeking behaviors among Ghanaians.

H4j. Region predicts health-seeking behaviors among Ghanaians.

5) What factors based on selected constructs of the Health Belief Model (HBM), predict health-seeking behaviors among Ghanaians?

H5a: Perceived severity of illness predicts health-seeking behaviors among Ghanaians?

H5b: Perceived susceptibility to illness predicts health-seeking behaviors among Ghanaians?

H5c: Perceived benefits to types of care predict health-seeking behaviors among Ghanaians?

H5d: Perceived barriers to mainstream care at government health facilities predict health-seeking behaviors among Ghanaians?

H5e: Perceived barriers to mainstream care at private health facilities predict health-seeking behaviors among Ghanaians?

H5f: Cues to action for each type of care predicts health-seeking behaviors among Ghanaians?

Research Method

This study was designed to use a structured, self-administered and/or trained enumerator-assisted, paper-based survey instrument to collect data at a single point in time from the target population in their natural environment, satisfying conditions for a cross-sectional, descriptive, and correlational study as described by Cohen (2007) and Creswell (2003). Despite their limitation in establishing causal inference, cross-sectional studies using surveys have the advantage of presenting researchers the opportunity to have good control over the measurement process, leading to a better understanding of the relationships between variables within representative samples (Mann, 2003), and have been and continue to be an important source of information for evidence-based public health (Aday, 1996). The current researcher believes the foregoing advantage of cross-sectional designs using surveys, allowed meaningful collection of data and analysis of the factors that influence health-seeking behaviors in Ghana, and most importantly, what relationships exist between these factors, and how they independently and collectively influence/predict health-seeking behaviors among Ghanaians.

The general desirability and advantages of using surveys in cross-sectional designs notwithstanding, survey enquiry presents considerable biases and limitations in the data collection process that cannot be glossed over. First, survey research is generally faced with declining response rates (Morton, Cahill & Hartge, 2006; Nohr, Frydenberg, Henriksen & Olsen, 2006) which as a limitation, accentuates the problem of response bias in descriptive and correlational studies, such that important differences between responders and non-responders can lead to a non-representative sample (Griffen et al., 2011), which by extension, limits the external validity of the study (Hohwü et al, 2013). Some suggestions to improve survey response rates include careful wording of survey questions to ignite interest of prospective respondents, keeping

the language simple for ease of understanding the questions and using shorter surveys (Dillman, 2007).

Second, survey studies are prone to response biases, in particular, social desirability bias, where responders deny socially undesirable behaviors and attitudes in favor of socially desirable ones, especially where sensitive topics such as health information are concerned (Zerbe & Paulhus, 1987). To minimize the occurrence of this type of bias, De Jong, Pieters, and Fox (2010) suggest researcher openness about research goals and intentions, anonymity in data collection, and improving and explaining privacy and confidentiality in data collection and utilization to responders prior to survey administration. The preceding recommendations were reasonably accommodated during the present study to optimize the chances of success through procurement of reliable data based on honest opinions and assertions of study participants.

Operationalization of Study Variables

This study has six dependent variables (DV) measuring health-seeking behaviors of respondents and representing available options of healthcare following ill-health among Ghanaians – 1. care at a government health facility (GHF), 2. care at a private health facility (PHF), 3. self-medication using herbal drugs (SMH), 4. self-medication using pharmaceutical drugs (SMP), 5. care from a traditional/herbal practitioner (THP), and 6. care from a faith healer (FH). These dependent variables were operationalized using a series of 5-point Likert scale items probing past and planned health-seeking behaviors such as “during my last illnesses, I sought treatment from a government health facility”.

The study further has two families of independent variables. The first family of independent variables is made up of ten demographic indices - 1. age range (refers to reported number of years in 10-year groups) 2. ethnic group (people who share common cultural

background) 3. religious affiliation (self-identified association with religious group) 4. health insurance status (having health insurance and type) 5. place of residence (rural, determined by population less than 5000, versus urban, population more than 5000) 6. gender (male or female) 7. educational level (highest level of formal education completed) 8. income level (self-reported income category) 9. marital status and 10. region of residence. The second family of independent variables is made up of modified constructs of the Health Belief Model (HBM) – 1. perceived severity of last illness 2. perceived susceptibility to illness 3. perceived benefits to type of care 4. perceived barriers to mainstream care (government or private health facility) and 5. cues to action for type of care. The dependent variables, independent variables, and attendant levels of measure as well as relevant question numbers from research instrument, are presented in Table 1 below.

Table 1

Dependent Variable, Independent Variables and Levels of Measure

Variable	Level of Measure	Instrument
HSBGHF	Scale	HSBGHF Q1 – 5
HSBPHF	Scale	HSBPHF Q1 – 6
HSBSMH	Scale	HSBSMH Q1 – 8
HSBSMP	Scale	HSBSMP Q1 – 6
HSBTHP	Scale	HSBTHP Q1 – 8
HSBFH	Scale	HSBFH Q1 – 8
Age range	Ratio	DI Q2
Gender	Nominal	DI Q3
Marital Status	Nominal	DI Q4
Educational level	Ordinal	DI Q9
Income level	Ordinal	DI Q10
Ethnic group	Nominal	DI Q5
Religious affiliation	Nominal	DI Q6
Health insurance status	Nominal	DI Q11
Place of residence	Nominal	DI Q7
Region of residence	Nominal	DI Q8
Perceived severity of illness	Scale	Perceived severity Q1 - 4
Perceived susceptibility	Scale	Perceived susceptibility Q1 - 5
Perceived Benefits	Scale	PBGHF Q1 – PBFH Q8
Perceived Barriers	Scale	PBarriers GHF Q1 – PBarriers PHF Q3

Note: DI = Demographic Instrument, Q = Question number, HSB = Health-Seeking Behavior; GHF = Government Health Facility; PHF = Private Health Facility; SMH = Self-Medication with Herbal Drugs; SMP = Self-Medication with Pharmaceutical Drugs; THP = Traditional/Herbal Practitioner(s); FH = Faith Healer/Healing and PBarriers = Perceived Barriers

Study Sample and Participant Selection

The population of interest in the current study was Ghanaians residing in Ghana, who were at least 18 years of age at the time of data collection. To the extent that the present investigator was interested in ethnic distribution as an umbrella independent variable in the population, the selection of participants for the study first followed stratification of the population into the four main ethnic groupings in Ghana; namely Ga/Adangme, Akan, Ewe, and Northern ethnic groupings. A convenience sampling procedure, a form of non-probability sampling in which participants are recruited for the study based on their availability and willingness to volunteer at the time of the study (Dane, 2010; Nardi, 2003), was then used to recruit participants for the study from the four ethnic strata described.

The study participants were thus, recruited from four regions in Ghana, namely the Greater Accra, Ashanti, Volta, and Northern regions, where the Ga/Adangme, Akan, Ewe and Northern ethnic groups are the dominant ethnic groupings respectively. Participant selection was restricted to Ghanaians resident in the target regions who were at least 18 years of age at the time of data collection, while exclusion criteria included non-Ghanaian residents in these regions and individuals younger than 18 years of age. Table 2 below, presents the number of Ghanaians aged 18 years and older from the four regions from which the study sample was selected, using data obtained from the 2010 Ghana Population and Housing Census. The table also details the

number of participants recruited from each target region as indicated by their respective proportions to the overall target population based on the sample size requirements estimated and presented in the succeeding section.

Table 2

Number of Ghanaians aged 18 years and older in the Greater Accra, Volta, Ashanti and Northern Regions of Ghana

Region	Population	Sample
Greater Accra Region	2,530,344	168
Volta Region	1,170,624	79
Ashanti Region	2,664,330	178
Northern Region	1,211,127	79
Total target population	7,576,425	504

Sample Size Estimation

To achieve statistical significance, various experts recommend varied methods for estimating minimum sample size requirements. For instance, Gliner, Morgan, and Leech (2009) recommend a sample size of 500 participants or less for studies where the focus is on identifying factors that influence and predict a dependent variable of interest, while Peduzzi, Concato, Kemper, Holford, and Feinstein (1996) recommend a minimum of 10 participants per predictor variable.

For the purposes of standardization and stronger statistical power, the current researcher used the online version of the Raosoft sample size calculator to determine the minimum sample size required for this study. The Raosoft sample size calculator is an increasingly popular method

of sample size estimation and has been determined to yield results comparable to those produced by G-power (McCrum-Gardner, 2010). To estimate the minimum sample size required for a given study, the Raosoft sample size calculator uses the margin of error, desired confidence level, population size, and response distribution of the prospective sample. For a total target population size of 7,576,425 individuals, 5% margin of error, confidence level of 95%, and level of distribution set at 50%, the Raosoft sample size calculator estimated a minimum sample size requirement of 385 participants for this study (Raosoft, 2004). Based on this minimum sample size requirement, the current researcher recruited a total of 504 participants for the current study, such that the distribution of responses was tailored to reflect the original proportions of the number of prospective participants in each target region relative to the total target population.

Data Collection

Data collection for the main study commenced in earnest, following a successful pilot study that informed revisions of the research instrument. The revised instrument was then reviewed and approved by several dissertation committee members, including the committee chair, and sanctioned for the main study following final approval from the Human Subjects' Committee (HSC) at Southern Illinois University Carbondale (SIUC).

Since the primary researcher targeted multiple sites for participant selection and data collection, a three-member team of research assistants (RAs) was recruited from the University of Ghana in the Greater Accra Region, trained and dispatched to collect data from the various regions and identified study sites. This team of research assistants was assisted in the data collection process by trained local volunteers resident in the communities in which the data collection took place. It is important to mention that while the training, facilitation, and coordination of the RAs work came at a cost to the primary investigator of this study, the overall

process saved cost and time in the data collection process, without compromising the quality of data retrieved.

Active data collection proceeded as follows; first, urban and rural areas were identified in each region, based on information retrieved from The Ghana Population and Housing Census (2010) which describes an urban area in Ghana as one that has at least 5000 residents, and a rural area as one that has less than 5000 residents. Working with the support of trained local volunteers, the team of RAs used a door-to-door approach to recruit participants for the study from the pre-identified sites. A maximum of one participant was recruited from each household to reduce unnecessary duplication of responses. Once an individual agreed to participate in the study, they first signed a consent form detailing the purpose of the study and informing them of their rights as participants of this research following which they completed the survey. Whenever participants without formal education were encountered, the trained RAs administered the survey to these participants in their respective local language, obtained, and recorded their responses to complete the survey with the support of trained local volunteers as necessary. An estimated average of 30 minutes was spent in the data collection process for each participant.

For the Ashanti region, a total of 107 participants were recruited from urban areas, namely Mfante New Town, Asafo Labor and environs, Asafo Market, Don Keck (Asafo) and Bempeh Hills (Asafo), while 69 participants were recruited from rural areas namely Ebom, Asokua and Domeabra. For urban areas in the Northern region, 24 participants were recruited from the Tamale Central Market, Ababow, Mosi Zongo and Tishigu communities, while 56 participants were recruited from rural areas in the Savelugu-Nanton district of the Northern region, namely New Site, Bontasi, Palbila and Sefour. In the Greater Accra region, 151

participants were recruited from urban areas namely 37 Military Hospital environs, Legon environs, Old Tema Station area, Adenta Masalachi area, Adenta Barrier New Site and Adenta Taxi Rank communities, while 16 participants were recruited from rural areas namely Adenta village and Ashaley Botwey. Data collection in the Volta region occurred in the following urban areas – Anglogodzi, NDC Park, Akpanamau and CK Road communities where a combined total of 26 participants were recruited, while sampled rural areas in the region included the Adaklu Wumenu and Wayanu communities between which 51 participants were recruited.

Following successful completion of the data collection process, the completed surveys (paper copies) were collated and entered into an online survey system created by the primary researcher through eSurvey Creator. The trained RAs served as data entry clerks for this role as well. The data was subsequently downloaded from the online system onto an excel spread sheet, cleaned and transferred onto the Statistical Package for the Social Sciences (SPSS) version 24 (IBM Corp., Armonk, New York) for analysis by the primary researcher. Original paper copies of the completed surveys have been held in trust and stored in the private office of one of the research assistants to be retrieved by the primary researcher upon his next trip to Ghana.

Instrumentation

Against the background of a quantitative design, a comprehensive survey instrument was developed using several existing survey instruments for studying health-seeking behaviors with established validity and reliability as a guide (Ahmed, Adams, Chowdhury & Bhuiya, 2000; Bahrami, Atashbahar, Shokohifar & Montazeralfaraj, 2014; MEDAIR, 2010; Oliver, Pearson, Coe, & Gunnell, 2005). All these existing scales are available for use online, and it is important to note that these scales were only used as a general guide to inform the scope of items developed and included in the study, without any items directly adopted from any of these scales.

In other words, all the survey questions used for this study were created by the primary researcher with the support and guidance of three committee members within the Department of Public Health and Recreation Professions at Southern Illinois University Carbondale who also reviewed the items as experts for content validity.

The final survey instrument after revisions following piloting, was comprised of seven sections – 11 questions on demographic characteristics, 41 questions on health-seeking behaviors, 4 questions on perceived severity, 5 questions on perceived susceptibility, 32 questions on perceived benefits, 6 questions on perceived barriers and 33 questions on cues to action. Questions across all segments of the instrument had categorical responses or Likert scale options depending on the question being asked.

Pilot Study

Following approval from the dissertation committee and Human Subjects' Committee at Southern Illinois University Carbondale (SIUC), a pilot study was conducted to determine the reliability and validity of the synthesized research instrument ahead of the main study. This was especially important given the instrument was newly created (albeit informed by extant literature and guided by existing scales), making a compelling case for reliability and validity analysis, as a basic but climacteric component of the much-desired research quality.

The pilot study was thus, conducted over the winter 2017 break, in the Greater Accra and Northern Regions of Ghana. The two regions were selected for the pilot study to broaden the scope of responses obtained for the pilot study, considering the differences in sociodemographic and related factors between these two regions. Two volunteers, both graduate students from the University of Ghana, were recruited and trained to administer the surveys in both regions. The Accra-based volunteer subsequently served as the data-entry clerk to enter the responses from

the hard copies into an online system created through eSurvey Creator by the primary researcher. The completed data was subsequently downloaded onto an excel spread sheet by the primary researcher, cleaned, and transferred onto SPSS for analysis. A total of 54 surveys were completed and returned for analysis. Hertzog (2008) recommends using a sample size of 25 to 40 participants when developing new scales.

Demographic Characteristics of Pilot Participants

Table 3

Demographic Characteristics of Pilot Participants

Characteristic (N = 53)	Number (%)
Age Range(years)	
18 - 24	2 (3.8)
25 - 34	33 (62.3)
35 - 44	11 (20.8)
45 - 54	2 (3.8)
55 - 64	4 (7.5)
65 and older	1 (1.9)
Gender	
Male	32 (60.4)
Female	21 (39.6)
Marital Status	
Single	21 (39.6)
Married	30 (55.6)
Separated	2 (3.8)
Ethnicity	
Akan	7 (13.2)
Ga/Adangme	6 (11.3)
Ewe	16 (30.2)
Northern Ethnic group	24 (45.3)
Religion	
Christianity	38 (71.7)
Islam	15 (28.3)
Residence	
Urban	46 (86.8)
Rural	7 (13.2)
Region	
Greater Accra	36 (67.9)
Northern	17 (32.1)
Education	
No Formal Education	2 (3.8)
Primary Education	1 (1.9)
Secondary Education	35 (67.3)
Tertiary Education	14 (26.9)
Income	
Low	7 (13.7)
Average	32 (62.7)
High	12 (23.5)
Health Insurance	
No Health Insurance	10 (19.2)

Government Health Insurance(NHIS)	27 (51.9)
Private Health Insurance	15 (28.8)

Reliability of the Instrument

Reliability of a research instrument measures the dependability of that instrument in producing similar results each time it is applied to the same population, under similar conditions, and is a necessary condition for validity of the instrument (McKenzie et al., 2005; Neutens & Rubinson, 2010). Internal consistency remains the most widely used approach for determining instrument reliability (Windsor, Baranowski, Clark & Cutter 1994), and basically assesses the correlation between items intended to measure the same concept (McDermott & Sarvela, 1999). Cronbach's alpha is a preferred estimate of internal consistency, ranges between 0 and 1, and a scale is considered reliable when it yields a Cronbach's alpha of 0.7 or greater (Bland & Altman, 1997; Lipsey, 1990; Nunnally & Bernstein, 1994). After dropping poorly loading items from the original instrument (items with factor loadings less than 0.4), reliability analyses were performed on the remaining items of the various scales and subscales making up the final research instrument, and the results of these analyses for the pilot study are presented in Table 4 below.

Table 4

Results for Reliability Analysis of Pilot Study

Construct	Cronbach's Alpha	Number of Items
HSBGHF	0.930	5
HSBPHF	0.947	6
HSBSMH	0.915	8
HSBSMP	0.899	6
HSBTHP	0.953	8
HSBFH	0.954	8
Perceived Severity	0.860	4
Perceived Susceptibility	0.915	5
Perceived Benefits GHF	0.882	5
Perceived Benefits PHF	0.942	8
Perceived Benefits SMH	0.772	3
Perceived Benefits SMP	0.763	4
Perceived Benefits THP	0.886	4
Perceived Benefits FH	0.921	8
Perceived Barriers GHF	0.747	3
Perceived Barriers PHF	0.869	3
Cues to Action GHF	0.873	5
Cues to Action PHF	0.842	4
Cues to Action SMH	0.867	4
Cues to Action SMP	0.852	4

Cues to Action THP	0.907	8
Cues to Action FH	0.950	8

Note: Alpha values (Reliabilities) greater than 0.7 are boldfaced. HSB = Health-Seeking Behavior; GHF = Government Health Facility; PHF = Private Health Facility; SMH = Self-Medication with Herbal Drugs; SMP = Self-Medication with Pharmaceutical Drugs; THP = Traditional/Herbal Practitioner(s); FH = Faith Healer/Healing

Validity of the Instrument

Validity is an integral part of survey research that connotes the degree to which a given scale measures what it is intended to measure (Kimberlin & Winterstein, 2008). Complementary forms of validity including face, content, construct, and criterion-related validity have been described and prescribed by various experts for a broad range of research areas and needs (Crocker & Algina, 1986; Dignan, 1995). Content and construct validity were comprehensively addressed in the present research as presented in the succeeding sections.

Content Validity

Content validity assesses the degree to which a given research scale explores all facets of a construct of interest (McDermott & Sarvela, 1999). In keeping with the recommendations of experts in the field, content validity for the current research was assessed in two ways – first by conducting an exhaustive review of existing literature as related to, and applicable to the constructs of interest, and second, by subjecting the instrument to the scrutiny of experts in the field of health education. More specifically, the nascent instrument was reviewed by two respected assistant professors of health education at the Department of Public Health and Recreation Professions at Southern Illinois University Carbondale. Following this initial review of the instrument, several minor changes relating to rewording of some questions to better align

with the constructs of the Health Belief Model (theoretical model for the study) as well as structuring to facilitate meaningful coding were consummated. The instrument was subjected to further scrutiny during the dissertation prospectus, when another expert in the field, who also serves as an assistant professor of health education at the Department of Public Health and Recreation Professions at Southern Illinois University Carbondale, raised concerns about the limited number of items for some constructs such as perceived severity, as well as the lack of fit of some items with a Likert scale as used. Subsequently, the primary researcher worked closely with all three experts to revise the instrument to reflect the suggested changes by further rewording some questions to fit the Likert scale, and increasing the minimum number of items per construct to eight.

Construct Validity

Construct validity assesses the degree to which a set of items measures a construct of interest. The synthesized research instrument for the current study had six main scales aligned with the constructs of the Health Belief Model (HBM) – scales for Health-Seeking Behavior, Perceived Severity, Perceived Susceptibility, Perceived Benefits, Perceived Barriers and Cues to Action. The scales for Health-Seeking Behavior, Perceived Benefits and Cues to Action were further broken into six subscales to reflect the six options of healthcare choice previously discussed, namely Care at a Government Health Facility, Care at a Private Health Facility, Self-Medication with Herbal Drugs, Self-Medication with Pharmaceutical Drugs, Care from a Traditional/Herbal Practitioner and Faith Healing. The same questions were used to probe each of these subscales, with only changes reflecting the specific type of care at any point in time. Similarly, Perceived Barriers had two subscales – Perceived Barriers to Government Health

Facilities and Perceived Barriers to Private Health Facilities, both of which were probed separately using the same questions.

Using Principal Component Analysis (PCA) with varimax rotation and Kaiser Normalization, the primary researcher assessed factor loadings on each subscale separately, as a basis for trimming the instrument and validating the remaining items ahead of the main study. To the extent that the widely used recommendations for deciding the number of factors to retain during PCA, such as the eigenvalues greater than one rule and scree plot, are variously cited for their immanent subjectivity and/or proclivity to over or underestimate the true dimension of data (Cangelosi & Goriely, 2007; Jackson, 1993; Ledesma & Valero-Mora, 2007), the present researcher made significant efforts to maintain a decent balance between robustness of the techniques used, with simplicity of the analyses. Indeed, Ferré (1995), “concludes that there is no ideal solution to the problem of dimensionality in a PCA”, while Karr and Martin (1981), observe that no significant differences may exist between percentage variances attributed to principal components extracted from real compared to random data sets.

Guided by the preceding points, the present researcher used a four-step process combining various recommendations in the extraction of, and retention of principal components. First, only components with eigenvalues greater than or equal to one were retained for interpretation (Kaiser & Rice, 1974). Second, the scree plots generated were examined to determine the point of leveling as a basis for deciding what number of components to retain (Cattell, 1966). Third, the minimum numbers of components needed to meet a combined total variance of at least 60 percent were used. Finally, the combined items loading strongly onto each extracted component were analyzed to determine if they made sense together in explaining the component(s) of interest. Other items independently loading onto components accounting for

less variability in the responses were critically examined, and then dropped from the revised instrument if they were determined to be a poor fit for the construct(s) of interest. Additionally, factors demonstrating cross-loadings with factor loadings of at least 0.4 on two or more components were dropped from the final instrument, ultimately leaving a minimum of three items that reasonably covered the theoretical domains of the constructs of interest (Hair et al., 2010), with a combined Cronbach's alpha of at least 0.7 (Tavakol, & Dennick, 2011). The results from the PCA for each subscale are presented in the series of tables below.

Table 5

Pilot Study Factor Loadings for PCA with Varimax Rotation of Health-Seeking Behaviors at Government Health Facility

	Component	
	1	2
Item 1	.906	-.143
Item 2	.916	-.200
Item 3	.909	-.115
Item 4	.855	.000
Item 5	.536	-.391
Item 6	.691	-.309
Item 7	.769	.537
Item 8	.652	.657

Note: Significant factor loadings are boldfaced. Based on the findings above, a critical appraisal of the items with reference to the criterion discussed previously, led to the exclusion of items 5, 7 and 8 from the revised instrument used for the main study.

Table 6

Pilot Study Factor Loadings for PCA with Varimax Rotation of Health-Seeking Behaviors at Private Health Facility

	Component	
	1	2
Item 1	.915	-.106
Item 2	.890	-.296
Item 3	.876	-.259
Item 4	.854	-.016
Item 5	.822	-.025
Item 6	.836	-.317
Item 7	.755	.585
Item 8	.705	.632

Note: Significant factor loadings are boldfaced. Based on the findings above, a critical appraisal of the items with reference to the criterion discussed previously, led to the exclusion of items 7 and 8 from the revised instrument used for the main study.

Table 7

Pilot Study Factor Loadings for PCA with Varimax Rotation of Health-Seeking Behaviors using Self-Medication with Herbal Drugs

	Component
	1
Item 1	.750
Item 2	.843
Item 3	.753
Item 4	.873
Item 5	.734
Item 6	.854
Item 7	.725
Item 8	.769

Note: Significant factor loadings are boldfaced. Based on these findings and the criterion set forth, all items in this scale were retained for the main study.

Table 8

Pilot Study Factor Loadings for PCA with Varimax Rotation of Health-Seeking Behaviors using Self-Medication with Pharmaceutical Drugs

	Component	
	1	2
Item 1	.834	-.218
Item 2	.854	-.241
Item 3	.772	-.208
Item 4	.878	.069
Item 5	.665	-.079
Item 6	.816	-.367
Item 7	.621	.680
Item 8	.575	.729

Note: Significant factor loadings are boldfaced. Based on the findings above, a critical appraisal of the items with reference to the criterion discussed previously, led to the exclusion of items 7 and 8 from the revised instrument used for the main study.

Table 9

Pilot Study Factor Loadings for PCA with Varimax Rotation of Health-Seeking Behaviors from Traditional/Herbal Practitioners

	Component
	1
Item 1	.943
Item 2	.944
Item 3	.824
Item 4	.858
Item 5	.780
Item 6	.949
Item 7	.842
Item 8	.969

Note: Significant factor loadings are boldfaced. Based on these findings and the criterion set forth, all items in this scale were retained for the main study.

Table 10

Pilot Study Factor Loadings for PCA with Varimax Rotation of Health-Seeking Behaviors from Faith Healers

	Component
	1
Item 1	.897
Item 2	.902
Item 3	.939
Item 4	.914
Item 5	.805
Item 6	.848
Item 7	.816
Item 8	.814

Note: Significant factor loadings are boldfaced. Based on these findings and the criterion set forth, all items in this scale were retained for the main study.

Table 11

Pilot Study Factor Loadings for PCA with Varimax Rotation of Perceived Severity of Last Illness

	Component	
	1	2
Item 1	.222	.807
Item 2	.384	.660
Item 3	.650	.225
Item 4	.706	.490
Item 5	.551	-.599
Item 6	.889	-.102
Item 7	.872	-.185
Item 8	.888	.002
Item 9	.754	-.457

Note: Significant factor loadings are boldfaced. Based on the findings above, a critical appraisal of the items with reference to the criterion discussed previously, led to the exclusion of items 1, 2, 4, 5 and 9 from the revised instrument used for the main study.

Table 12

Pilot Study Factor Loadings for PCA with Varimax Rotation of Perceived Susceptibility to Illness

	Component	
	1	2
Item 1	.556	.054
Item 2	.792	.346
Item 3	.858	-.268
Item 4	.907	-.263
Item 5	.883	-.225
Item 6	.820	-.208
Item 7	.333	.789
Item 8	.658	.412

Note: Significant factor loadings are boldfaced. Based on the findings above, a critical appraisal of the items with reference to the criterion discussed previously, led to the exclusion of items 1, 7 and 8 from the revised instrument used for the main study.

Table 13

*Pilot Study Factor Loadings for PCA with Varimax Rotation of Perceived Benefits of Seeking**Healthcare at Government Health Facilities*

	Component	
	1	2
Item 1	.629	.306
Item 2	.760	.068
Item 3	.695	.381
Item 4	.861	.121
Item 5	.166	.914
Item 6	.227	.920
Item 7	.514	.432
Item 8	.815	.141
Item 9	.102	.487

Note: Significant factor loadings are boldfaced. Based on the findings above, a critical appraisal of the items with reference to the criterion discussed previously, led to the exclusion of items 5, 6, 7 and 9 from the revised instrument used for the main study.

Table 14

Pilot Study Factor Loadings for PCA with Varimax Rotation of Perceived Benefits of Healthcare at Private Health Facilities

	Component	
	1	2
Item 1	.878	.208
Item 2	.900	.098
Item 3	.806	.263
Item 4	.832	-.116
Item 5	.794	-.247
Item 6	.796	-.374
Item 7	.757	-.299
Item 8	.880	.152
Item 9	.242	.827

Note: Significant factor loadings are boldfaced. Based on the findings above, a critical appraisal of the items with reference to the criterion discussed previously, led to the exclusion of item 1 from the revised instrument used for the main study.

Table 15

Pilot Study Factor Loadings for PCA with Varimax Rotation of Perceived Benefits of Self-Medication with Herbal Drugs

	Component	
	1	2
Item 1	.817	-.084
Item 2	.731	.274
Item 3	.122	.712
Item 4	.276	.635
Item 5	.160	.659
Item 6	.844	.091
Item 7	.557	.518
Item 8	-.237	.818

Note: Significant factor loadings are boldfaced. Based on the findings above, a critical appraisal of the items with reference to the criterion discussed previously, led to the exclusion of items 3, 4, 5, 7 and 8 from the revised instrument used for the main study.

Table 16

Pilot Study Factor Loadings for PCA with Varimax Rotation of Perceived Benefits of Self-Medication with Pharmaceutical Drugs

	Component	
	1	2
Item 1	.543	.785
Item 2	.704	.084
Item 3	.456	-.293
Item 4	.567	-.332
Item 5	.772	-.330
Item 6	.566	.699
Item 7	.750	-.345
Item 8	.698	-.066

Note: Significant factor loadings are boldfaced. Based on the findings above, a critical appraisal of the items with reference to the criterion discussed previously, led to the exclusion of items 1,3, 4 and 6 from the revised instrument used for the main study.

Table 17

Pilot Study Factor Loadings for PCA with Varimax Rotation of Perceived Benefits of Seeking Healthcare from Traditional/Herbal Practitioners

	Component	
	1	2
Item 1	.816	.085
Item 2	.507	.348
Item 3	.426	.675
Item 4	.192	.912
Item 5	-.048	.663
Item 6	.674	.363
Item 7	.922	.143
Item 8	.910	-.014

Note: Significant factor loadings are boldfaced. Based on the findings above, a critical appraisal of the items with reference to the criterion discussed previously, led to the exclusion of items 2, 3, 4 and 5 from the revised instrument used for the main study.

Table 18

Pilot Study Factor Loadings for PCA with Varimax Rotation of Perceived Benefits of Seeking Healthcare from a Faith Healer

	Component
	1
Item 1	.753
Item 2	.666
Item 3	.871
Item 4	.712
Item 5	.747
Item 6	.806
Item 7	.872
Item 8	.876

Note: Significant factor loadings are boldfaced. Based on these findings and the criterion set forth, all items in this scale were retained for the main study.

Table 19

Pilot Study Factor Loadings for PCA with Varimax Rotation of Perceived Barriers to Seeking Healthcare from a Government Health Facility

	Component		
	1	2	3
Item 1	.505	.365	.181
Item 2	.561	-.033	.724
Item 3	.778	-.147	.325
Item 4	.822	.212	-.195
Item 5	-.338	.901	.176
Item 6	-.356	.906	.158
Item 7	.593	.409	-.412
Item 8	.652	.245	-.353

Note: Significant factor loadings are boldfaced. Based on the findings above, a critical appraisal of the items with reference to the criterion discussed previously, led to the exclusion of items 1, 2, 5, 6 and 7 from the revised instrument used for the main study.

Table 20

Pilot Study Factor Loadings for PCA with Varimax Rotation of Perceived Barriers to Seeking Healthcare from a Private Health Facility

	Component	
	1	2
Item 1	.065	-.675
Item 2	-.005	.478
Item 3	.850	.152
Item 4	.826	.395
Item 5	.356	.870
Item 6	.366	.857
Item 7	-.440	.170
Item 8	.852	.215

Note: Significant factor loadings are boldfaced. Based on the findings above, a critical appraisal of the items with reference to the criterion discussed previously, led to the exclusion of items 1, 2, 5, 6 and 7 from the revised instrument used for the main study.

Table 21

Pilot Study Factor Loadings for PCA with Varimax Rotation of Cues to Action in Seeking Healthcare from a Government Health Facility

	Component	
	1	2
Item 1	.813	-.196
Item 2	.854	-.104
Item 3	.908	-.067
Item 4	.525	-.621
Item 5	.667	-.154
Item 6	.755	.426
Item 7	.380	.854
Item 8	.325	.279

Note: Significant factor loadings are boldfaced. Based on the findings above, a critical appraisal of the items with reference to the criterion discussed previously, led to the exclusion of items 4, 7 and 8 from the revised instrument used for the main study.

Table 22

Pilot Study Factor Loadings for PCA with Varimax Rotation of Cues to Action in Seeking Healthcare from a Private Health Facility

	Component		
	1	2	3
Item 1	.752	-.271	-.345
Item 2	.825	-.200	-.242
Item 3	.861	-.052	-.178
Item 4	.582	.650	-.134
Item 5	.606	.608	-.006
Item 6	.689	-.366	.396
Item 7	.512	-.259	.761
Item 8	.077	.663	.426

Note: Significant factor loadings are boldfaced. Based on the findings above, a critical appraisal of the items with reference to the criterion discussed previously, led to the exclusion of items 4, 5, 7 and 8 from the revised instrument used for the main study.

Table 23

Pilot Study Factor Loadings for PCA with Varimax Rotation of Cues to Action for Self-Medication with Herbal Drugs

	Component	
	1	2
Item 1	.797	-.530
Item 2	.847	-.496
Item 3	.863	-.349
Item 4	.838	.110
Item 5	.912	-.006
Item 6	.768	.515
Item 7	.786	.549
Item 8	.657	.350

Note: Significant factor loadings are boldfaced. Based on the findings above, a critical appraisal of the items with reference to the criterion discussed previously, led to the exclusion of items 1, 2, 6 and 7 from the revised instrument used for the main study.

Table 24

Pilot Study Factor Loadings for PCA with Varimax Rotation of Cues to Action for Self-Medication with Pharmaceutical Drugs

	Component	
	1	2
Item 1	.819	.391
Item 2	.635	.639
Item 3	.851	.222
Item 4	.708	-.142
Item 5	.805	-.359
Item 6	.749	-.547
Item 7	.699	-.637
Item 8	.553	.597

Note: Significant factor loadings are boldfaced. Based on the findings above, a critical appraisal of the items with reference to the criterion discussed previously, led to the exclusion of items 2, 6, 7 and 8 from the revised instrument used for the main study.

Table 25

Pilot Study Factor Loadings for PCA with Varimax Rotation of Cues to Action for Seeking Healthcare from a Traditional/Herbal Practitioner

	Component
	1
Item 1	.687
Item 2	.699
Item 3	.721
Item 4	.788
Item 5	.875
Item 6	.829
Item 7	.852
Item 8	.760

Note: Significant factor loadings are boldfaced. Based on these findings and the criterion set forth, all items in this scale were retained for the main study.

Table 26

Pilot Study Factor Loadings for PCA with Varimax Rotation of Cues to Action in Seeking Healthcare from a Faith Healer

	Component
	1
Item 1	.869
Item 2	.905
Item 3	.881
Item 4	.836
Item 5	.638
Item 6	.871
Item 7	.926
Item 8	.928

Note: Significant factor loadings are boldfaced. Based on these findings and the criterion set forth, all items in this scale were retained for the main study.

Based on the findings of the PCA and attendant reliability analyses presented above, the main study included all 22 subscales, namely HSBGHF, HSBPHF, HSBSMH, HSBSMP, HSBTHP, HSBFH, PerceivedSeverity, PerceivedSusceptibility, PBGHF, PBPHF, PBSMH, PBSMP, PBTHP, PBFH, PBarriersGHF, PBarriersPHF, CuesGHF, CuesPHF, CuesSMH, CuesSMP, CuesTHP and CuesFH. The total number of items also reduced from 163 in the original instrument to 121 after excluding poorly loading items based on the findings of the PCA and reliability analyses.

Health-Seeking Behaviors among Pilot Participants

To determine regular/first choice of healthcare among respondents, the average scores for each option of healthcare (health-seeking behaviors) were computed and compared across the board. Average scores greater than 3 (out of a possible total of 5 from the 5-point Likert scale) were deemed regular healthcare options, with the highest score across all six categories depicted as the first point of care and/or regular option of care for each respondent. Individuals reporting the same highest average for two or more options of care were excluded from the analysis for health-seeking behaviors. At this point, the present researcher wishes to emphasize that, the criterion described above for placing respondents into the various options of care was not cross-validated in any shape or form against any existing metrics or criterion since the present study is possibly the first of its kind, based on findings from the exhaustive search during review of extant literature.

Using the criterion described above, it was determined that 20 (39.2%) of pilot respondents used government health facilities (GHF) as a first point of call following ill-health, 22 (43.1%) used private health facilities (PHF) as a first point of all following ill-health, while 9 (17.7%) regularly self-medicated with pharmaceutical drugs (SMP) as a first point of call following ill-health. No entries were recorded for self-medication with herbal drugs (SMH), faith

healing (FH) and care from traditional/herbal practitioners (THP) in the pilot study, despite some respondents scoring an average of 3 or more in these categories, indicating some use these options of care, just not as a regular and/or first point of call following ill-health.

Data Analyses for Main Study

Once participant responses were entered into the Statistical Package for the Social Sciences (SPSS) version 24 (IBM Corp., Armonk, New York) software, stepwise data analyses were conducted as follows. First, descriptive statistics were performed to assess the frequencies, percentages, measures of central tendency, and dispersion for all demographic variables in the study. Second, the validity and reliability of the measurement scales were assessed using principal component analysis (PCA), and by calculating the coefficient alpha for the various segments of the instrument. Since the distribution of first point of call for seeking healthcare among Ghanaians failed to demonstrate normality across all sociodemographic variables of interest according to the Kolmogorov-Smirnov test for normality, the present researcher elected to use nonparametric approaches to assess for differences in health-seeking behaviors as influenced by differences in the sociodemographic variables of interest. Specifically, the researcher used Kruskal Wallis Tests with Post Hoc Multiple Comparisons and Mann Whitney U Tests to assess differences in the respective categories of health-seeking behaviors due to differences in sociodemographic factors with Bonferroni correction applied to guard against over-inflation of type I error. Relationships between health-seeking behaviors and selected modified constructs of the HBM were assessed using bivariate correlational analysis involving the total scores for each variable of interest.

Finally, to determine which demographic characteristics and modified constructs of the Health-Belief Model, such as perceived severity of illness, predict each of the six categories of the dependent variable (treatment option), namely self-medication with herbal drugs, self-

medication with patent drugs, treatment by traditional healer, treatment by faith healer, treatment at a government health facility, and treatment at a private health facility, multiple linear regression analyses were performed by regressing the total scores of each of the aforementioned categories of the dependent variable on the independent variables of interest using an adjusted Bonferroni correction of alpha, to neutralize the occurrence of an inflated type I error rate. A summary of the research questions, corresponding hypotheses and data analyses procedures carried out are presented in Table 27 below.

Table 27 *Summary of research questions, hypotheses, and planned analyses procedures*

Research Question	Hypotheses	Data Analysis
1. What is the first point of call for seeking healthcare among Ghanaians?		Descriptive/Univariate Analysis
2. Which sociodemographic factors influence choice of first point of call for healthcare among Ghanaian healthcare consumers?	H2a – H2j	Kruskal-Wallis/Mann Whitney U Tests
3. Are there any relationships between selected constructs of the HBM and first point of call for healthcare among Ghanaians?	H3a – H3f	Bivariate Correlational Analysis
4. What are the sociodemographic predictors of health-seeking behaviors among Ghanaians?	H4a – H4j	Multiple Linear Regression
5. What factors based on constructs of the Health Belief Model (HBM), predict health-seeking behaviors among Ghanaians?	H5a – H5f	Multiple Linear Regression

Summary

A comprehensive overview of the methodology for conducting the proposed study was presented in this chapter. More specifically, the chapter opened with a reiteration of the purpose and relevance of the proposed study, before providing detailed descriptions regarding the research design and methods, focal research hypotheses, operationalization of study variables, participant selection, data collection, instrument synthesis, pilot-testing and data analysis procedures.

CHAPTER 4

RESULTS

Introduction

A three-tier detailed description of the study findings is presented in this chapter. The first part of the chapter details the sociodemographic information of the study participants. The second section is dedicated to the reliability and validity analysis from the main study, with comparisons to findings from the pilot study as necessary. The chapter closes with a comprehensive presentation of step by step findings from the analysis for each research question. To guide the appreciation of the study results, the purpose of the present study together with the research questions are restated below, immediately before the study findings are presented.

Purpose of the Study

As stated previously, the purpose of the current study was two-fold – 1. to create a comprehensive survey instrument for evaluating the factors that influence health-seeking behaviors among Ghanaians using selected constructs of the Health Belief Model (HBM) and 2. to use the survey instrument to study determinants and predictors of health-seeking behaviors among Ghanaians as a basis for developing future intervention programs. With direct reference to the purpose of the study described above, this research provided prefatory yet important evidence, of some of the key differences in health-seeking behaviors among Ghanaians resident in Ghana, and most importantly, the factors driving these differences in health-seeking behaviors.

Research Questions

The following research questions were crafted to guide the present study, and are restated here to aid assimilation of the study results.

- 1) What is the first point of call for seeking healthcare among Ghanaians?
- 2) Which sociodemographic factors influence choice of first point of call for healthcare among Ghanaian healthcare consumers?
- 3) Are there any relationships between selected constructs of the HBM and first point of call for healthcare among Ghanaians?
- 4) What are the sociodemographic predictors of health-seeking behaviors among Ghanaians?
- 5) What factors based on constructs of the Health Belief Model (HBM), predict health-seeking behaviors among Ghanaians?

Demographic Characteristics of Study Participants

A total of 504 participants were sampled across all four regions included in the main study. More specifically, 168, 178, 79 and 79 participants were sampled from the Greater Accra, Ashanti, Volta, and Northern regions respectively. Table 28 below provides a detailed description of the demographic characteristics of interest, of participants included in the main study.

Table 28

Demographic Characteristics of Main Study Participants

<u>Characteristic (N = 504)</u>	<u>Number (%)</u>
Age Range(years)	
18 - 24	164 (32.5)
25 - 34	156 (31.0)
35 - 44	87 (17.3)
45 - 54	48 (9.5)
55 - 64	33 (6.5)
65 and older	16 (3.2)
Gender	
Male	266 (52.7)
Female	239 (47.3)
Marital Status	
Single	251 (49.8)
Married	217 (43.1)
Separated	6 (1.2)
Divorced	11 (2.2)
Widowed	19 (3.8)
Ethnicity	
Akan	238 (47.4)
Ga/Adangme	27 (5.4)
Ewe	109 (21.7)
Northern Ethnic group	128 (25.5)
Religion	
Christianity	384 (76)
Islam	101 (20)
Traditional Religion	5 (1)
Other	15 (3)
Residence	
Urban	309 (61.3)
Rural	195 (38.7)
Region	
Greater Accra	168 (33.3)
Northern	79 (15.7)
Ashanti	178 (35.3)
Volta	79 (15.7)
Education	
No Formal Education	65 (13)
Primary Education	83 (16.6)
Secondary Education	272 (54.3)
Tertiary Education	80 (16)
Postgraduate Education	1 (0.2)

Income		
Low		237 (47)
Average		251 (49.8)
High		16 (3.2)
Health Insurance		
No Health Insurance		158 (31.3)
Government Health Insurance(NHIS)		335 (66.5)
Private Health Insurance		11 (2.2)

Instrument Validity

Like the analysis in the pilot study, PCA with varimax rotation and Kaiser normalization was run for all scales and subscales of the modified research instrument with Likert scale items. Across all subscales, only one component was extracted per scale based on Kaiser’s eigenvalues greater than one rule, with findings depicting generally higher factor loadings of all corresponding items on respective components than reported for the pilot study. The extracted components also accounted for much higher variances of the variability in the corresponding items, and as explained previously, the items for each scale made sense together both theoretically and practically, for their intended respective constructs. The results of the factor loadings for the main study, are presented below for the various segments of the revised (validated based on pilot study findings) study instrument.

Table 29

Main Study Factor Loadings for PCA with Varimax Rotation of Health-Seeking Behaviors at

Government Health Facility

	<u>Component</u>
	<u>1</u>
Item 1	.899
Item 2	.925
Item 3	.936
Item 4	.916
Item 5	.930

Note: Significant factor loadings are boldfaced

Table 30

Main Study Factor Loadings for PCA with Varimax Rotation of Health-Seeking Behaviors at

Private Health Facility

	<u>Component</u>
	<u>1</u>
Item 1	.904
Item 2	.921
Item 3	.937
Item 4	.944
Item 5	.920
Item 6	.919

Note: Significant factor loadings are boldfaced

Table 31

Main Study Factor Loadings for PCA with Varimax Rotation of Health-Seeking Behaviors through Self-Medication with Herbal Drugs

	<u>Component</u>
	<u>1</u>
Item 1	.874
Item 2	.944
Item 3	.945
Item 4	.944
Item 5	.934
Item 6	.929
Item 7	.942
Item 8	.931

Note: Significant factor loadings are boldfaced

Table 32

Main Study Factor Loadings for PCA with Varimax Rotation of Health-Seeking Behaviors through Self-Medication with Pharmaceutical Drugs

	<u>Component</u>
	<u>1</u>
Item 1	.840
Item 2	.899
Item 3	.898
Item 4	.930
Item 5	.893
Item 6	.872

Note: Significant factor loadings are boldfaced

Table 33

Main Study Factor Loadings for PCA with Varimax Rotation of Health-Seeking Behaviors of Care from Traditional/Herbal Practitioner

	Component
	1
Item 1	.887
Item 2	.927
Item 3	.944
Item 4	.942
Item 5	.916
Item 6	.941
Item 7	.948
Item 8	.945

Note: Significant factor loadings are boldfaced

Table 34

Main Study Factor Loadings for PCA with Varimax Rotation of Health-Seeking Behaviors of Care from Faith Healers

	Component
	1
Item 1	.873
Item 2	.915
Item 3	.923
Item 4	.931
Item 5	.913
Item 6	.916
Item 7	.946
Item 8	.928

Note: Significant factor loadings are boldfaced

Table 35

Main Study Factor Loadings for PCA with Varimax Rotation of Perceived Severity of Last illness

	<u>Component</u>
	1
Item 1	.899
Item 2	.924
Item 3	.939
Item 4	.932

Note: Significant factor loadings are boldfaced

Table 36

Main Study Factor Loadings for PCA with Varimax Rotation of Perceived Susceptibility to illness

	<u>Component</u>
	1
Item 1	.891
Item 2	.911
Item 3	.921
Item 4	.882
Item 5	.539

Note: Significant factor loadings are boldfaced

Table 37

Main Study Factor Loadings for PCA with Varimax Rotation of Perceived Benefits of Healthcare

at Government Health Facilities

	<u>Component</u>
	1
Item 1	.852
Item 2	.896
Item 3	.911
Item 4	.895
Item 5	.873

Note: Significant factor loadings are boldfaced

Table 38

Main Study Factor Loadings for PCA with Varimax Rotation of Perceived Benefits of Healthcare at Government Health Facilities

	<u>Component</u>
	<u>1</u>
Item 1	.839
Item 2	.886
Item 3	.922
Item 4	.929
Item 5	.931
Item 6	.937
Item 7	.932
Item 8	.934

Note: Significant factor loadings are boldfaced

Table 39

Main Study Factor Loadings for PCA with Varimax Rotation of Perceived Benefits of Self-Medication with Herbal Drugs

	<u>Component</u>
	<u>1</u>
Item 1	.922
Item 2	.948
Item 3	.918

Note: Significant factor loadings are boldfaced

Table 40

Main Study Factor Loadings for PCA with Varimax Rotation of Perceived Benefits of Self-

Medication with Pharmaceutical Drugs

	<u>Component</u>
	1
Item 1	.860
Item 2	.815
Item 3	.913
Item 4	.890

Note: Significant factor loadings are boldfaced

Table 41

Main Study Factor Loadings for PCA with Varimax Rotation of Perceived Benefits of Care from

Traditional/Herbal Practitioners

	<u>Component</u>
	1
Item 1	.889
Item 2	.915
Item 3	.935
Item 4	.930

Note: Significant factor loadings are boldfaced

Table 42

Main Study Factor Loadings for PCA with Varimax Rotation of Perceived Benefits of Care from

Faith Healers

	<u>Component</u>
	1
Item 1	.868
Item 2	.885
Item 3	.906
Item 4	.900
Item 5	.899
Item 6	.916
Item 7	.924
Item 8	.903

Note: Significant factor loadings are boldfaced

Table 43

Main Study Factor Loadings for PCA with Varimax Rotation of Perceived Barriers to Care from

Government Health Facilities

	<u>Component</u>
	1
Item 1	.779
Item 2	.849
Item 3	.813

Note: Significant factor loadings are boldfaced

Table 44

Main Study Factor Loadings for PCA with Varimax Rotation of Perceived Barriers to Care from

Government Health Facilities

	Component
	1
Item 1	.866
Item 2	.910
Item 3	.844

Note: Significant factor loadings are boldfaced

Table 45

Main Study Factor Loadings for PCA with Varimax Rotation of Cues to Seeking Care from

Government Health Facilities

	Component
	1
Item 1	.788
Item 2	.852
Item 3	.832
Item 4	.755
Item 5	.545

Note: Significant factor loadings are boldfaced

Table 46

Main Study Factor Loadings for PCA with Varimax Rotation of Cues to Seeking Care from Private

Health Facilities

	Component
	1
Item 1	.868
Item 2	.901
Item 3	.844
Item 4	.651

Note: Significant factor loadings are boldfaced

Table 47

Main Study Factor Loadings for PCA with Varimax Rotation of Cues to Self-Medication with Herbal Drugs

	<u>Component</u>
	<u>1</u>
Item 1	.872
Item 2	.893
Item 3	.907
Item 4	.625

Note: Significant factor loadings are boldfaced

Table 48

Main Study Factor Loadings for PCA with Varimax Rotation of Cues to Self-Medication with Pharmaceutical Drugs

	<u>Component</u>
	<u>1</u>
Item 1	.847
Item 2	.901
Item 3	.895
Item 4	.877

Note: Significant factor loadings are boldfaced

Table 49

Main Study Factor Loadings for PCA with Varimax Rotation of Cues to Seeking Care from

Traditional/Herbal Practitioners

	<u>Component</u>
	<u>1</u>
Item 1	.796
Item 2	.816
Item 3	.869
Item 4	.849
Item 5	.872
Item 6	.876
Item 7	.885
Item 8	.821

Note: Significant factor loadings are boldfaced

Table 50

Main Study Factor Loadings for PCA with Varimax Rotation of Cues to Seeking Care from Faith

Healers

	<u>Component</u>
	<u>1</u>
Item 1	.820
Item 2	.838
Item 3	.811
Item 4	.829
Item 5	.800
Item 6	.835
Item 7	.813
Item 8	.766

Note: Significant factor loadings are boldfaced

Instrument Reliability

All scales used in the main study yielded Cronbach's alpha values greater than 0.7, consistent with minimum requirements for instrument reliability, and corroborating the findings from the pilot study. The alpha values from the main study, also depicted a general improvement

from the pilot values, possibly due to a larger sample size. Table 51 below provides the results of the reliability analysis for the main study in comparison to the pilot study.

Table 51

Results for Reliability Analysis of Main Study Compared to Pilot Study

Construct	Cronbach's Alpha (Pilot Values)	Number of Items
HSBGHF	0.955 (0.930)	5
HSBPHF	0.965 (0.947)	6
HSBSMH	0.978 (0.915)	8
HSBSMP	0.946 (0.899)	6
HSBTHP	0.978 (0.953)	8
HSBFH	0.973 (0.954)	8
Perceived Severity	0.942 (0.860)	4
Perceived Susceptibility	0.875 (0.915)	5
Perceived Benefits GHF	0.931 (0.882)	5
Perceived Benefits PHF	0.972 (0.942)	8
Perceived Benefits SMH	0.917 (0.772)	3
Perceived Benefits SMP	0.893 (0.763)	4
Perceived Benefits THP	0.937 (0.886)	4
Perceived Benefits FH	0.967 (0.921)	8
Perceived Barriers GHF	0.744 (0.747)	3
Perceived Barriers PHF	0.840 (0.869)	3
Cues to Action GHF	0.808 (0.873)	5
Cues to Action PHF	0.826 (0.842)	4
Cues to Action SMH	0.833 (0.867)	4
Cues to Action SMP	0.901 (0.852)	4

Cues to Action THP	0.944 (0.907)	8
Cues to Action FH	0.926 (0.950)	8

Note: Alpha values (Reliabilities) greater than 0.7 are boldfaced. HSB = Health-Seeking Behavior; GHF = Government Health Facility; PHF = Private Health Facility; SMH = Self-Medication with Herbal Drugs; SMP = Self-Medication with Pharmaceutical Drugs; THP = Traditional/Herbal Practitioner(s); FH = Faith Healer/Healing

Results of Analysis for Research Questions

Research Question Number 1: What is the first point of call for seeking healthcare among Ghanaians?

In direct reference to the procedures adopted for determining the regular/first choice of healthcare among respondents outlined for the pilot population, the average scores for each option of healthcare (health-seeking behaviors) were computed and compared across the board for the main study, such that average scores greater than 3 (out of a possible total of 5 from the 5-point Likert scale) were deemed regular healthcare options. Subsequently, the option of healthcare with the highest average score across all six categories was selected as the first point of care and/or regular option of care for each respondent. Whenever the situation where the same highest average was observed for two or more options of care arose, those cases were excluded from the analysis for health-seeking behaviors. Again, the present researcher wishes to emphasize that, the criterion described above for placing respondents into the various options of care was not cross-validated against any existing standards or criterion since the present study is possibly the first of its kind, based on findings from the exhaustive literature review.

Based on the above criterion, a total of 483 respondents were placed into one of six categories of healthcare choice. Specifically, it was determined that 166 (34.4%) of the main

study respondents used government health facilities (GHF) as a first point of call following ill-health, 138 (28.6%) respondents regularly self-medicated with pharmaceutical drugs (SMP) as a first point of call following ill-health, while 82 (17%) regularly self-medicated with herbal drugs (SMH) as a first point of call following ill-health. Additionally, 54 (11.2%) used private health facilities (PHF) as a first point of all following ill-health, while 23 (4.8%) resorted to care from traditional/herbal practitioners (THP) following ill-health, and 20 (4.1%) used faith healing as a regular option of care following ill-health. It is important to note at this point that as many as 67.5 percent of respondents had average scores greater than 3 in more than one category, suggesting mixed health-seeking behaviors despite a higher score in one category, indicating preference for that category over the others.

Research Question Number 2: Which sociodemographic factors influence the choice of first point of call for healthcare among Ghanaian healthcare consumers?

The Kolmogorov-Smirnov test for normality revealed that the distribution for first point of call for seeking healthcare among Ghanaians did not follow a normal distribution. Subsequently, the present researcher elected to use nonparametric approaches to assess for differences in health-seeking behaviors as influenced by underlying differences in the sociodemographic characteristics. More specifically, the researcher used Kruskal Wallis Tests with Post Hoc Multiple Comparisons and Mann Whitney U Tests (with Bonferroni correction) to assess differences in the respective categories of health-seeking behaviors due to differences in sociodemographic factors.

Statistically significant differences were observed for health-seeking behaviors at government health facilities ($t = 21.946, p = 0.001$), self-medication with herbal drugs ($t = 16.968, p = 0.005$) and self-medication with pharmaceutical drugs ($t = 13.082, p = 0.023$) with

age range. Bonferroni-adjusted post-hoc comparisons revealed significant differences in seeking healthcare at government health facilities between the age ranges 18 – 24 years and 45 – 54 years ($t = -94.065, p = .001$) and 35 – 44 years and 45 – 54 years ($t = -86.386, p = .014$), while significant differences were found between the age ranges 18 – 24 years and 35 – 44 years ($t = -62.989, p = .016$) for self-medication with herbal drugs. Gender differences were observed only for health-seeking behaviors at government health facilities, with females seeking more care at government health facilities than males ($Z = 3.834, p < .001$).

Regarding marital status, statistically significant differences were observed for health-seeking behaviors at government health facilities ($t = 11.641, p = 0.020$), self-medication with herbal drugs ($t = 18.172, p = 0.001$), care from traditional/herbal practitioners ($t = 9.849, p = .043$) and faith healing ($t = 9.945, p = 0.041$). Bonferroni-adjusted post-hoc comparisons revealed significant differences in seeking healthcare at government health facilities between single and married respondents ($t = -99.202, p = .040$), while significant differences were found between single and married ($t = -43.245, p = .013$; $t = -38.332, p = .035$; $t = -40.691, p = .022$) respectively for self-medication with herbal drugs, care from traditional/herbal practitioners, and faith healing.

Ethnic differences produced statistically significant differences for care at private health facilities ($t = 11.070, p = 0.011$), self-medication with herbal drugs ($t = 11.358, p = 0.010$), care from traditional/herbal practitioners ($t = 12.663, p = 0.005$) and faith healing ($t = 18.833, p < 0.001$). Bonferroni-adjusted post-hoc comparisons revealed significant differences in seeking healthcare at private health facilities between Northerners and Akans ($t = 51.686, p = .006$), and significant differences in seeking faith healing emerged between Akans and Northerners ($t = -40.691, p = .022$). Additionally, significant differences were found between Akans and Ewes ($t =$

-45.442, $p = .038$; $t = -50.372$, $p = .012$; $t = -67.443$, $p < .001$) respectively for self-medication with herbal drugs, care from traditional/herbal practitioners, and faith healing. Religion only produced a statistically significant difference for care at private health facilities between respondents affiliated with Islam and Christianity ($t = 48.596$, $p = 0.016$).

Place of residence produced statistically significant results between urban and rural dwellers for care at government health facilities ($z = -2.075$, $p = 0.038$), care at private health facilities ($z = 3.646$, $p < .001$), self-medication with herbal drugs ($z = -3.325$, $p = 0.001$), care from traditional/herbal practitioners ($z = -3.046$, $p = 0.002$) and care from faith healers ($z = -4.566$, $p < .001$). Health insurance status only yielded statistically significant differences in care at government health facilities between respondents without health insurance and those with government health insurance ($t = -75.180$, $p < .001$).

Regarding educational level, statistically significant differences were observed only for care at government health facilities and self-medication with herbal drugs. Bonferroni-adjusted post-hoc comparisons revealed significant differences in seeking healthcare at government health facilities between respondents with secondary education and those with no formal education ($t = 59.447$, $p = .028$), while significant differences were found between respondents with tertiary education and those with primary education ($t = 64.524$, $p = .042$) for self-medication with herbal drugs. Income on the other hand, produced statistically significant differences for care at government health facilities ($t = 11.952$, $p = .003$) and care from traditional/herbal practitioners ($t = 20.396$, $p < .001$). When Bonferroni-adjusted pairwise comparisons were conducted, statistically significant differences were observed between average and low-income earners for healthcare at government health facilities ($t = 43.836$, $p = .003$), while statistically significant

differences in care from traditional/herbal practitioners, emerged between low and average income earners ($t = -55.559, p < .001$).

Differences in Region produced statistically significant differences for care at private health facilities ($t = 23.378, p < 0.001$), self-medication with herbal drugs ($t = 17.707, p = 0.001$), care from traditional/herbal practitioners ($t = 12.194, p = 0.007$) and faith healing ($t = 40.597, p < 0.001$). Bonferroni-adjusted post-hoc comparisons revealed more respondents sought care at private health facilities in the Northern and Volta regions compared to Greater Accra region, and in the Northern and Volta regions compared to Ashanti region. Self-medication with herbal drugs was more prevalent in the Volta and Northern regions compared to Ashanti region, and in the Northern region compared to Greater Accra region, while care from traditional/herbal practitioners was more prevalent in the Volta region compared to both the Greater Accra and Ashanti regions. Furthermore, faith healing came up more prominent in the Northern and Volta regions compared to the Greater Accra and Ashanti regions.

The results from the analyses showed that there were no significant differences in self-medication with pharmaceutical drugs as an option of care across all sociodemographic variables. Detailed results from these analyses are presented in tables 52 and 53 below.

Table 52

Independent-Samples Kruskal-Wallis/Mann Whitney U Tests for Effect of Demographic Characteristics on Choice of Healthcare

Variable	HSBGHF	HSBPHF	HSBSMH	HSBSMP	HSBTHP	HSBFH
Age Range						
N	503	503	502	501	502	500
Test Statistic	21.946	9.392	16.968	13.082	4.979	5.355
df	5	5	5	5	5	5
Sig.	.001	.094	.005	.023	.418	.374
Gender						
N	504	504	503	502	503	501
Mann-Whitney U	37897.500	33479.000	28950.500	30955.000	31796.000	33358.500
Z	3.834	1.117	-1.593	-.285	.164	1.306
Sig.	<.001	.264	.111	.776	.870	.191
Marital Status						
N	503	503	502	501	502	500
Test Statistic	11.641	2.043	18.172	1.721	9.849	9.945
df	4	4	4	4	4	4
Sig.	.020	.728	.001	.787	.043	.041
Ethnic Group						
N	501	501	500	499	500	498
Test Statistic	.393	11.070	11.358	1.200	12.663	18.833
df	3	3	3	3	3	3
Sig.	.942	.011	.010	.753	.005	<.001
Religion						
N	504	504	503	502	503	501
Test Statistic	6.587	12.389	5.198	6.466	2.555	2.897
df	3	3	3	3	3	3
Sig.	.086	.006	.158	.091	.465	.408
Residence						
N	503	503	502	501	502	500
Mann-Whitney U	26687.000	35784.000	24682.500	29959.500	25168.500	22526.000
Z	-2.075	3.646	-3.325	.151	-3.046	-4.566
Sig.	.038	<.001	.001	.880	.002	.001.
Region						
N	503	503	502	501	502	500
Test Statistic	4.122	23.378	17.707	6.466	12.194	40.597
df	3	3	3	3	3	3
Sig.	.249	<.001	.001	.091	.007	<.001
Educational Level						
N	500	500	499	498	499	497
Test Statistic	12.407	9.204	10.648	4.954	4.487	4.894
df	4	4	4	4	4	4
Sig.	.015	.056	.031	.292	.344	.298

Income						
N	503	503	502	501	502	500
Test Statistic	11.952	3.319	4.030	3.138	20.396	.360
df	2	2	2	2	2	2
Sig.	.003	.190	.133	.208	<.001	.835
Health Insurance						
N	503	503	502	501	502	500
Test Statistic	28.849	3.626	7.363	1.299	.640	.961
df	2	2	2	2	2	2
Sig.	<.001	.163	.025	.522	.726	.618

Note: HSB = Health-Seeking Behavior; GHF = Government Health Facility; PHF = Private

Health Facility; SMH = Self-Medication with Herbal Drugs; SMP = Self-Medication with

Pharmaceutical Drugs; THP = Traditional/Herbal Practitioner(s); FH = Faith Healer/Healing

Table 53

Bonferroni-adjusted Post-Hoc Comparisons for significant effects of sociodemographic factors on choice of healthcare

	HSBGHF Comparison Test Statistic Adj. Sig ^a	HSBPHF Comparison Test Statistic Adj. Sig	HSBSMH Comparison Test Statistic Adj. Sig	HSBTHP Comparison Test Statistic Adj. Sig	HSBFH Comparison Test Statistic Adj. Sig
Age Range	18-24/45-54yrs -94.065 .001		18-24/35-44yrs -62.989 .016		
	35-44/45-54yrs -86.386 .014				
Marital Status	Single-Widowed -99.202 .040		Single-Married -43.245 .013	Single-Married -38.332 .035	Single-Married -40.691 .022
Ethnic Group		Northerner-Akan 51.686 .006	Akan-Ewe -45.442 .038	Akan-Ewe -50.372 .012	Akan-Northerner -42.695 .039
Religion					Akan-Ewe -67.443 <.001
		Islam- Christianity 48.596 .016			
Region		Northern-GAR 61.498 .011	Ash-Volta -58.204 .017	GAR-Volta -56.318 .022	GAR-Northern -65.978 .005
		Northern-Ash 74.959 .001	Ashanti-Norther -69.717 .002	Ashanti-Volta -52.088 .040	GAR-Volta -111.309 <.001
		Volta-GAR 56.466 .025	GAR-Northern -53.897 .038		Ash-Northern -54.074 .032
		Volta-Ashanti 69.927 .002			Ashanti-Volta -99.404 <.001
Educ. Level	Secondary-No Ed 59.447		Tertiary-Primary 64.524		

	.028	.042	
Income	Average-Low 43.836 .003		Low-Average -55.559 <.001
Health Insurance	No HI-GHI -75.180 <.001		

Note: a: Significance values have been adjusted using Bonferroni correction for multiple tests.

HSB = Health-Seeking Behavior; GHF = Government Health Facility; PHF = Private Health Facility; SMH = Self-Medication with Herbal Drugs; SMP = Self-Medication with Pharmaceutical Drugs; THP = Traditional/Herbal Practitioner(s); FH = Faith Healer/Healing HI = Health Insurance; GHI = Government Health Insurance; GAR = Greater Accra Region; Ash = Ashanti Region

Research Question Number 3: Are there any relationships between selected constructs of the HBM and first point of call for healthcare among Ghanaians?

To determine what relationships exist between modified selected constructs of the Health Belief Model and differential choice of healthcare, Pearson correlation analyses were conducted between each option of healthcare and perceived severity of last illness, perceived susceptibility to illness, perceived benefits of specific type of care, perceived cues to action of specific type of care, perceived barriers to care at government health facilities and perceived barriers to care at private health facilities using total scores computed for each variable based on responses to Likert scale items. The results indicate that while some modified selected constructs were significantly associated with various options of care, the corresponding Pearson correlation coefficients (r) were small (<0.3), depicting weak correlations, possibly due to large sample size effects. It is also useful to add that, despite small coefficients, negative relationships were observed between Perceived Barriers to Care at Government Health Facilities and all complementary and alternative forms of care investigated, namely self-medication with

pharmaceutical and herbal drugs, and care from traditional/herbal practitioners as well as faith healing, while Perceived Barriers to care at private health facilities was negatively associated with care at mainstream health facilities, mainly healthcare at Government and Private Health Facilities. Nevertheless, moderately strong correlations were found between Healthcare at Government Health Facilities and Perceived Benefits of care at Government Health Facilities ($r = .639, p < .001$), Healthcare at Private Health Facilities and Cues to Action for Healthcare at Private Health Facilities ($r = .543, p < .001$), Self-Medication with Herbal Drugs and Perceived Benefits to Self-Medication with herbal drugs ($r = .697, p < .001$), Self-Medication with Pharmaceutical Drugs and Perceived Benefits to Self-Medication with pharmaceutical drugs ($r = .510, p < .001$), Healthcare from Faith Healers and Cues to Action for care from faith healers ($r = .570, p < .001$). Detailed results from the correlation analyses are presented in Table 54 below.

Table 54

Correlations between health-seeking behaviors and selected modified constructs of HBM

Variable	HSBGHF Pearson r Sig N	HSBPHF Pearson r Sig N	HSBSMH Pearson r Sig N	HSBSMP Pearson r Sig N	HSBTHP Pearson r Sig N	HSBFH Pearson r Sig N
Perceived Severity	.046 .307 501	.048 .282 502	.241 <.001 501	.142 .001 500	.107 .016 502	.161 <.001 500
Perceived Susceptibility	.201 <.001 500	.095 .034 501	.198 <.001 500	.086 .054 499	.054 .225 501	.186 <.001 499
Perceived Barriers GHF	.021 .640 499	.175 <.001 500	-.139 .002 499	-.066 .143 498	-.040 .373 500	-.060 .180 498
Perceived Barriers PHF	-.072 .110 500	-.330 <.001 501	.032 .479 500	.101 .025 499	.175 <.001 501	.038 .401 499
Perceived Benefits	.639 <.001 500	.221 <.001 502	.697 <.001 502	.510 <.001 501	.209 <.001 499	.424 <.001 499
Cues to Action	.161 <.001 502	.543 <.001 503	.338 <.001 501	.292 <.001 501	.341 <.001 500	.570 <.001 499

Note: Significant correlations are boldfaced.

Research Question Number 4: What are the demographic predictors of health-seeking behaviors among Ghanaians?

Multiple logistic regression analyses were used to determine the sociodemographic predictors of each option of care under the present study. More specifically, total scores for each option of care were computed and regressed as the dependent variable on all the sociodemographic variables, which served as the predictor variables. A Bonferroni correction

involving the 10 sociodemographic predictors produced a reference significance level of 0.005 for 95 percent confidence interval. This yielded six regression models:

Model 1: Demographic Predictors of Health-Seeking at Government Health Facilities

The regression model for seeking healthcare at government health facilities was statistically significant ($F = 6.851, p < .001$), but accounted for only 10.6 percent of the variance in seeking healthcare at government health facilities. Age group and health insurance status emerged as the only statistically significant predictors of this model.

Model 2: Demographic Predictors of Health-Seeking at Private Health Facilities

The regression model for seeking healthcare at private health facilities was also statistically significant ($F = 4.473, p < .001$), but accounted for only 6.6 percent of the variance in seeking healthcare at private health facilities. Residence emerged as the only statistically significant predictor of this model

Model 3: Demographic Predictors of Self-Medication with Herbal Drugs

The regression model for self-medication with herbal drugs was also statistically significant ($F = 5.226, p < .001$), but accounted for only 7.9 percent of the variance in seeking healthcare at private health facilities. Age group and health insurance status materialized as the only statistically significant predictors of self-medication with herbal drugs.

Model 4: Demographic Predictors of Self-Medication with Pharmaceutical Drugs

The regression model for self-medication with pharmaceutical drugs was the only statistically insignificant model ($F = 1.675, p = .084$), and accounted for only 1.4 percent of the variance in seeking healthcare at private health facilities. However, age group materialized as the only statistically significant predictors of self-medication with pharmaceutical drugs.

Model 5: Demographic Predictors of Health-Seeking Care from Traditional/Herbal Practitioners

The regression model for seeking healthcare from Traditional/Herbal practitioners was also statistically significant ($F = 5.143, p < .001$), but accounted for only 7.8 percent of the variance in seeking healthcare from Traditional/Herbal practitioners. Income emerged as the only statistically significant predictor of this model.

Model 6: Demographic Predictors of Health-Seeking Care from Faith Healers

The regression model for seeking healthcare from Faith Healers was also statistically significant ($F = 5.356, p < .001$), but accounted for only 8.2 percent of the variance in seeking healthcare from Faith Healers. Average income emerged as the only statistically significant predictors of this model. Region of residence was the only statistically significant predictor of seeking healthcare from faith healers. A complete breakdown of the regression results for sociodemographic predictors of health-seeking behaviors is presented in Table 55 below.

Table 55

Sociodemographic Predictors of Health-Seeking Behaviors

Variable	HSBGHF B(SEB) β sig	HSBPHF B(SEB) β sig	HSBSMH B(SEB) β sig	HSBSMP B(SEB) β sig	HSBTHP B(SEB) β sig	HSBFH B(SEB) β sig
Age Range	.629(0.215) .160 <.001	.618(.248) .139 .013	1.390(.377) .204 <.001	-.691(.224) -.177 .002	.238(.325) .041 .466	-.393(.310) -.070 .206
Gender	1.345(.511) .125 .009	.420(.591) .035 .477	-1.513(.901) -.081 .094	-.263(.535) -.025 .624	.061(.775) .004 .937	-.100(.738) -.007 .892
Marital Status	-2.11(0.336) -.036 .531	-.018(.385) -.003 .962	-1.214(.586) -.120 .039	.290(.349) .050 .406	-.197(.510) -.022 .700	.814(.487) .097 .095
Ethnic Group	-.328(.377) -.079 .150	-.122(.264) -.026 .644	.243(.404) .034 .548	-.137(.239) -.033 .568	.207(.347) .033 .551	.161(.330) .027 .625
Religion	-.767(.377) -.092 .043	-.760(.435) -.081 .082	-.598(.664) -.042 .368	.488(.394) .059 .217	-.375(.571) -.030 .512	-.707(.544) -.060 .194
Residence	-.021(.549) -.002 .970	1.854(.633) .149 .004	-1.367(.964) -.072 .157	.238(.576) .022 .680	-1.663(.831) -.101 .046	-1.660(.790) -.106 .036
Region	.138(.112) .073 .220	-.162(.130) -.076 .212	.436(.199) .133 .029	.179(.118) .094 .131	.451(.171) .159 .008	.640(.162) .237 <.001
Educational Level	-.180(.300) -.030 .548	.684(.345) .100 .038	-1.046(.526) -.100 .047	-.171(.313) -.028 .585	-.918(.453) -.102 .043	-.073(.0433) -.008 .866
Income	-1.041(.448) -.107 .021	-.322(.517) -.029 .534	-.021(.788) -.001 .978	.326(.468) .034 .486	3.284(.678) .226 <.001	.712(.646) .052 .271
Health Insurance	1.117(.255) .204 <.001	.656(.295) .101 .027	-1.316(.450) -.132 .004	.055(.267) .010 .837	-.429(.387) -.050 .268	.088(.368) .011 .811
R ²	.125	.085	.098	.034	.097	.101

Adjusted R ²	.106	.066	.079	.014	.078	.082
F	6.851	4.473	5.226	1.675	5.143	5.356
P	<.001	<.001	<.001	.084	<.001	<.001

Note: HSB = Health-Seeking Behavior; GHF = Government Health Facility; PHF = Private Health

Facility; SMH = Self-Medication with Herbal Drugs; SMP = Self-Medication with Pharmaceutical Drugs;

THP = Traditional/Herbal Practitioner(s); FH = Faith Healer/Healing

Research Question Number 5: What factors based on constructs of the Health Belief Model (HBM), predict health-seeking behaviors among Ghanaians?

To determine which factors based on selected modified constructs of the Health-Belief Model predict differential choice of healthcare among Ghanaians, multiple logistic regression was conducted. Specifically, total scores for each option of healthcare were regressed on total scores of the selected modified constructs which served as predictor variables. Since there were 6 predictor variables, the Bonferroni correction produced a reference significance level of .008 for this analysis. This yielded six regression models:

Model 1: Predictors of Health-Seeking at Government Health Facilities based on Modified Constructs of the HBM

The regression model for seeking healthcare at government health facilities was statistically significant ($F = 59.371, p < .001$), and accounted for a decent 41.6 percent of the variance in seeking healthcare at government health facilities. Perceived Susceptibility to ill-health and Perceived Benefits to healthcare from government health facilities emerged as statistically significant predictors of this model.

Model 2: Predictors of Health-Seeking at Private Health Facilities based on Modified Constructs of the HBM

The regression model for seeking healthcare at private health facilities was also statistically significant ($F = 45.080, p < .001$), and accounted for 34.9 percent of the variance in seeking healthcare at private health facilities. Perceived Benefits and Cues to Action for care at private health facilities together with Perceived Barriers to care at both government and private health facilities all emerged as statistically significant predictors of this model.

Model 3: Predictors of Self-Medication with Herbal Drugs based on Modified Constructs of the HBM

The regression model for self-medication with herbal drugs was also statistically significant ($F = 85.872, p < .001$), accounting for 50.9 percent of the variance in seeking healthcare at private health facilities. Perceived Benefits and Cues to Action for self-medication with herbal drugs materialized as the only statistically significant predictors of self-medication with herbal drugs.

Model 4: Predictors of Self-Medication with Pharmaceutical Drugs based on Modified Constructs of the HBM

The regression model for self-medication with pharmaceutical drugs also came up statistically significant model ($F = 40.057, p = < .001$), accounting for 32.3 percent of the variance in self-medicating with pharmaceutical drugs. Like self-medication with herbal drugs, Perceived Benefits and Cues to Action for self-medication with pharmaceutical drugs emerged as the only statistically significant predictors of self-medication with pharmaceutical drugs.

Model 5: Predictors of Health-Seeking from Traditional/Herbal Practitioners based on Modified Constructs of the HBM

The regression model for seeking healthcare from Traditional/Herbal practitioners was statistically significant ($F = 54.328, p < .001$), accounting for 39.4 percent of the variance in

seeking healthcare from Traditional/Herbal practitioners. Again, Perceived Benefits and Cues to Action for seeking care from Traditional/Herbal practitioners emerged as the only statistically significant predictors of healthcare from Traditional/Herbal practitioners.

Model 6: Predictors of Health-Seeking Care from Faith Healers based on Modified Constructs of the HBM

The regression model for seeking healthcare from Faith Healers was also statistically significant ($F = 51.610, p < .001$), and accounted for 38.3 percent of the variance in seeking healthcare from Faith Healers. Perceived Benefits and Cues to Action for seeking care from Faith Healers again emerged as the only statistically significant predictors of healthcare from faith healers. Table 56 below provides a complete breakdown of the regression results for predictors of health-seeking behaviors based on selected modified constructs of the Health Belief Model.

Table 56

Predictors of Health-Seeking Behaviors based on Modified Constructs of the Health Belief Model

Variable	HSBGHF B(SEB) β sig	HSBPHF B(SEB) β sig	HSBSMH B(SEB) β sig	HSBSMP B(SEB) β sig	HSBTHP B(SEB) β sig	HSBFH B(SEB) β sig
Perceived Severity	-.064(.044) -.054 .151	.064(.051) .049 .214	.129(.070) .064 .066	.065(.047) .055 .172	.038(.067) .022 .570	.094(.064) .056 .143
Perceived Susceptibility	.132(.046) .110 .004	.058(.053) .043 .274	.066(.071) .032 .353	.000(.048) .000 .993	-.022(.068) -.012 .745	.089(.066) .052 .176
Perceived Barriers GHF	.117(.082) .050 .157	.261(.098) .100 .008	-.247(.130) -.061 .058	-.074(.089) -.032 .404	-.199(.123) -.057 .108	-.218(.119) -.066 .067
Perceived Barriers PHF	-.231(.093) -.089 .013	-.586(.110) -.203 <.001	-.228(.146) -.051 .119	.102(.100) .040 .306	-.135(.144) -.035 .348	-.228(.134) -.062 .091
Perceived Benefits	.770(.045) .613 <.001	.362(.032) .441 <.001	2.092(.113) .627 <.001	.835(.066) .483 <.001	.978(.090) .414 <.001	.544(.045) .471 <.001
Cues to Action	.055(.058) .034 .351	.269(.077) .131 <.001	.485(.111) .151 <.001	.407(.070) .227 <.001	.496(.056) .357 <.001	.324(.052) .246 <.001
R ²	.423	.357	.515	.331	.401	.391
Adjusted R ²	.416	.349	.509	.323	.394	.383
F	59.371	45.080	85.872	40.057	54.328	51.610
P	<.001	<.001	<.001	<.001	<.001	<.001

Note: HSB = Health-Seeking Behavior; GHF = Government Health Facility; PHF = Private

Health Facility; SMH = Self-Medication with Herbal Drugs; SMP = Self-Medication with

Pharmaceutical Drugs; THP = Traditional/Herbal Practitioner(s); FH = Faith Healer/Healing;

Cues to Action and Perceived Benefits are specific for each type of care.

Summary

The researcher provided a detailed description of the findings from the various analyses conducted to answer the research questions in this chapter. A total of 504 completed surveys were included in the analyses. Reliability and validity analyses confirmed stability of the instrument following modifications after the pilot study, with factor loadings and measures of internal consistency (Cronbach's alpha) yielding a trend showing general improvements from the findings of the pilot study.

Regarding first/regular choice of healthcare among respondents, 34.4% of the respondents used GHF as a first point of call following ill-health, 28.6% regularly self-medicated with pharmaceutical drugs as a first point of call following ill-health, while 17% regularly self-medicated with herbal drugs as a first point of call following ill-health. Additionally, 11.2% used PHF as a first point of call following ill-health, while 4.8% resorted to care from THP following ill-health, and 4.1% used faith healing as a regular option of care following ill-health.

Differences in seeking care at government health facilities were found to be influenced by age group, gender, place of residence, educational level, income and health insurance status; care at private health facilities, on the other hand, was found to be influenced by ethnic group, religious affiliation, place of residence, region of residence and educational level. Self-medication using herbal drugs was found to differ with age, marital status, ethnic group, place and region of residence, educational level and health insurance status, while self-medication with pharmaceutical drugs only differed with age. Furthermore, healthcare from Traditional/Herbal practitioners differed with marital status, ethnic group, place and region of residence as well as income; whereas, faith healing as an option of care was influenced by differences in marital status, ethnic group, place and region of residence.

Multiple regression analyses revealed age group, health insurance status, Perceived Susceptibility, and Perceived Benefits predicted health-seeking at government health facilities, while place of residence, Perceived Barriers to care at government and private health facilities together with Perceived Benefits and Cues to Action for seeking care at private health facilities predicted healthcare at private health facilities. Age and health insurance status predicted self-medication with herbal drugs while age, income, and region of residence predicted self-medication with pharmaceutical drugs, care from traditional/herbal practitioners, and faith healing respectively. Additionally, Perceived Benefits and Cues to Action specific to each option of care also predicted self-medication with herbal and pharmaceutical drugs, care from traditional/faith healers as well as faith healing as an option of care.

CHAPTER FIVE

DISCUSSION, RECOMMENDATIONS AND CONCLUSIONS

Introduction

The purpose of this research was to create a comprehensive instrument for evaluating health-seeking behaviors among Ghanaians, using the Health Belief Model (HBM) as a theoretical framework, and to use the newly created instrument to study the factors associated with and predictive of health-seeking behaviors among Ghanaians. This chapter discusses the results presented in chapter 4 of this manuscript, in the context of existing literature pertaining to health-seeking behaviors, and with specific reference to the Health Belief Model as applied to the study.

As a Ghanaian healthcare consumer and licensed physician with considerable experience in the healthcare landscape in Ghana, the present researcher also minimally infuses what can be termed subjective opinions of the results obtained from this study, to aid readers to better digest the findings procured from the study. Following a thorough discussion of the findings specific to each research question, the researcher highlights the contributions and implications of this study to health education, recommendations for future research and conclusions based on findings from the study.

Demographic Characteristics of Study Participants

While the demographic characteristics obtained and presented in chapter 4 did not specifically incite a discussion, the present researcher observed an interesting finding that was hard to ignore. Despite significant attempts to ensure a reasonable distribution across the four main ethnic groupings using a convenience sampling approach of pre-selected communities within each region, the number of Ga/Adangme respondents sampled was significantly lower

than expected, as only 19 respondents (11.4 %) were Ga/Adangme, out of the 168 participants sampled in the Greater Accra region of which the Ga/Adangme is the dominant ethnic group. The other ethnic groupings dominated the sample from the Greater Accra region with 79 Akans (47.6%), 33 Ewes (22.3%) and 31 Northerners (18.7%).

As the national capital and seat of government, the Greater Accra region has the highest population density in Ghana (Ghana Population and Housing Census, 2010), due largely to significant migrations (particularly rural-urban) of citizens from other regions in search of economic opportunities, educational needs or other reasons. A cross-tabulation involving ethnic group and region further revealed that, in the other three regions, namely Volta, Ashanti, and Northern regions, most respondents were respectively Ewes, Akans and Northerners, implying lower migration of other ethnic groupings into these regions as compared to the Greater Accra region.

What is the First Point of Call for Healthcare among Ghanaians?

The first research question for this study sought to uncover the distribution of health-seeking behaviors among Ghanaians by probing the first/regular options of care among Ghanaians following ill-health. As forwarded previously, Ghana has a pluralistic healthcare system, with healthcare consumers resorting to care at government health facilities, care at private health facilities, self-medication with herbal drugs, self-medication with pharmaceutical drugs, care from traditional/herbal practitioners, and/or care from faith healers during ill-health.

A closer look at these results revealed that less than half of all respondents used main stream healthcare services (government and private health facilities) as a first point of call following ill-health. Specifically, a combined 45.6 percent of all respondents used main stream healthcare facilities as a first point of call following ill-health, which is at par with the combined

use of self-medication with herbal drugs and self-medication with pharmaceutical drugs (45.6%). The use of all complementary and alternative forms of treatment considered in the present study, however, exceeded the use of mainstream facilities. Evidence of mixed health-seeking behaviors among respondents may be a strong indication of the multiplicity of factors at play, as far as health-seeking behaviors in Ghana are concerned. As observed by Wade, Chao, Kronenberg, Cushman and Kalmuss (2008), the concurrent use of complementary and alternative treatments with mainstream treatments (mixed health-seeking behaviors) is influenced by cues from family members and friends (cues to action from social circles emerged as a strong predictor of health-seeking behaviors in the present study) as well as from media outlet accounts supporting these treatments. To the trained mainstream medical practitioner and public health observer, the concurrent use of pharmaceutical products and complementary and alternative medicines (CAM) of any type, significantly raises the potential for untoward, possibly fatal interactions, and should be a major public health priority. Interestingly, nearly 70 percent of all respondents have health insurance coverage, which covers nearly all expenses at mainstream health facilities, particularly, government health facilities, yet it is surprising to find that the use of complementary and alternative forms of treatment (which are not covered by health insurance) is higher among study participants.

As reported in a study by Ritchie, Gohmann and McKinney (2005), dissatisfaction with the quality of care received from mainstream healthcare providers together with limited access to care are important determinants for seeking complementary and alternative forms of care. Additional reasons for resorting to CAM are provided by Al-Rowais, Al-Faris, Mohammad, Al-Rukban and Abdulghani (2010); in their household survey of reasons for using traditional treatments in the Riyadh region, the authors reported preference for natural treatment, belief in

efficacy of CAM, failure of mainstream medical treatments and previous successful treatment outcomes using traditional options of care as important determinants of seeking traditional care.

Factors Influencing First Point of Call for Healthcare among Ghanaians

Research question 2 was crafted to probe the factors that influence health-seeking behaviors among Ghanaians, and was answered by exploring differences in sociodemographic factors associated with differences in the aforementioned options of care among Ghanaian healthcare consumers. As presented in tables 52 and 53 of this manuscript, differences in all the sociodemographic variables of interest were found to variously influence health-seeking behaviors among the study participants. For the purposes of clarity, the sociodemographic factors associated with each option of care are discussed separately in the sections below.

Influence of Age on Health-Seeking Behaviors

Differences in age appeared to influence seeking care at government health facilities, self-medication with herbal drugs and self-medication with pharmaceutical drugs. However, Bonferroni-adjusted post-hoc analysis revealed that no significant differences existed for self-medication with pharmaceutical drugs between any of the age groups. Indeed, self-medication with pharmaceutical drugs was the only option of care not influenced or affected by underlying differences in the sociodemographic variables of interest. The most plausible explanation is that, the practice of self-medication with pharmaceutical drugs as a first point of call among respondents (and by extension Ghanaians) is so widespread it cuts across people from the social divide without any significant differences between groups at any point. Nevertheless, age still influenced care at government health facilities and self-medication with herbal drugs, as older respondents sought more care at government health facilities as well as self-medicated more with herbal drugs compared to younger respondents

In addition to the acute and infectious diseases that affect all age groups, the burden of chronic diseases for which recurrent medical care is needed, is disproportionately higher among respondents of the older age groups compared to their younger colleagues (Denton & Spencer, 2010). While the present research did not specifically look at the presence of chronic medical conditions among respondents, it is likely that the increased use of health services at government health facilities as well as self-medication with herbal drugs among the older age groups, may at least in part be explained by the need for more medical care among older respondents with chronic medical conditions in general. This agrees with the findings of Grimsmo and Siem (1984), whose study among a Norwegian population revealed increasing age and the presence of chronic medical conditions significantly influenced primary care utilization.

Influence of Gender on Health-Seeking Behaviors

Females were observed to significantly consume more healthcare at government health facilities than males, while no significant differences existed between females and males for the other options of care. In addition to the everyday conditions for which both males and females may seek care from government health facilities, females have additional health needs in the form of obstetric and gynecological needs for which their first point of care may be mainstream health facilities. At a time when increased calls for antenatal care during pregnancy and skilled delivery are loudest, and these services are offered free of charge to all expectant mothers at all government health facilities across the country, it could only be expected that females would likely seek more healthcare at public health facilities than their male counterparts as observed in the present study. These findings on the influence of gender on mainstream care are corroborated by Bertakis, Azari, Helms, Callahan and Robbins (2000); after controlling for other factors, women were still determined to consume more care at mainstream facilities, which the authors attributed to reproductive and special health needs among females compared to males.

Influence of Marital Status on Health-Seeking Behaviors

Differences in marital status were also observed to yield differences in health seeking behaviors at government health facilities, self-medication with herbal drugs, care from traditional/herbal practitioners and faith healing. Specifically, for government health facilities, widowed respondents were observed to seek more care at government health facilities compared to single respondents, while married respondents sought more care from traditional/herbal practitioners and faith healers, as well as self-medicated with herbal drugs more, compared to single respondents. A cross tabulation of age range and marital status showed that single respondents were younger compared to married and widowed respondents, which again means that married and widowed respondents might have more healthcare needs due to higher burden of chronic health conditions compared to their younger, single colleagues. Additionally, married respondents may also have sexual and reproductive health needs for which they may need more healthcare in general compared to their single colleagues.

Influence of Ethnicity and Region on Health-Seeking Behaviors

Ethnic differences produced significant differences in care seeking behaviors at private health facilities, self-medication with herbal drugs, care from traditional/herbal practitioners, and faith healing. Specifically, respondents of Northern extraction were found to significantly use both private health facilities and faith healing as a first option of care compared to their Akan counterparts. Similarly, Ewe respondents were determined to significantly engage more in self-medication with herbal drugs, seek care from traditional/herbal practitioners and faith healers as a first point of call following ill-health compared to their Akan counterparts.

A closer look at regional differences in health-seeking behaviors confirms these ethnic differences in health seeking behaviors. The Ashanti region in which the Akan ethnic group is dominant had significantly lower patronage of private health facilities compared to the Northern region in which respondents of Northern extraction are the dominant ethnic group. Similarly, self-medication with herbal drugs, care from traditional/herbal practitioners and faith healing were significantly more pronounced in the Volta region in which the Ewe ethnicity is dominant compared to the Ashanti region in which the Akan ethnicity is more dominant. In other words, ethnic differences in health-seeking behaviors as reported, mirror regional differences in health-seeking behaviors. In their study of traditional medicine use among different ethnic groupings in Uganda, Tabuti, Kukunda, Kaweesi, and Kasilo (2012) determined that significant differences not only existed in use of herbal treatments among different ethnic groups, but were influenced by differences in knowledge of herbal/traditional treatments. While the present study did not probe knowledge differences between ethnic groups regarding herbal care, it is possible such differences, if any exist, might be implicated in the differences in use of such treatments as observed.

Self-medication with herbal drugs, seeking care from traditional/herbal practitioners as well as faith healing were also significantly more pronounced in the Volta and Northern regions compared to the Greater Accra and Ashanti regions. The most plausible explanation for these observations is that the Greater Accra and Ashanti regions are the two dominant regions in the country, and have broader resources and more options for and access to mainstream care compared to the Volta and Northern regions that have more rural settings, with limited options of care from mainstream facilities possibly finding expression in use of alternative options of care

such as self-medication with herbal drugs, care from traditional/herbal practitioners, and faith healers in these regions.

Influence of Religion on Health-Seeking Behaviors

Religious differences in health-seeking behaviors only produced significant differences in care at private health facilities. Specifically, respondents affiliated with Islam were determined to significantly seek more care at private health facilities compared to those affiliated with Christianity. While this may well be an incidental finding, cross tabulations revealed that most respondents affiliated with Islam were of Northern extraction or were resident in the Northern region. To the extent that other findings indicate more respondents in the Northern region (of which most are affiliated with Islam) sought care from private health facilities compared to respondents in the Greater Accra and Ashanti regions (where most respondents indicated affiliation with Christianity), the finding that affiliates of Islam use private health facilities more than affiliates of Christianity may just be mirroring these regional differences. That said, the present researcher cannot think of a specific reason for which such differences may exist, and a qualitative enquiry may be helpful in understanding such differences if truly they exist, and are influenced by religious beliefs and practices.

Influence of Place of Residence on Health-Seeking Behaviors

Regarding place of residence, rural residents seek care more often at government health facilities, self-medicate more with herbal drugs, seek care more often from traditional/herbal practitioners and faith healers compared to their urban counterparts. However, urban respondents tend to seek care at private health facilities more so than rural respondents. In Ghana, the only options for mainstream medical care in rural settings tend to be government health facilities. Subsequently, all individuals needing mainstream medical care resort to what is in many cases

the only health facility (government) serving multiple rural communities in a given area. Unlike their rural colleagues, urban residents tend to have many more options of healthcare including private health facilities, which goes to reinforce the significantly higher patronage of private health facilities among urban compared to rural residents.

Urban residents also tend to be better educated and placed economically to seek care from the more expensive private health facilities compared to the less economically privileged rural residents who turn to complementary and alternative forms of treatment such as self-medication with herbal drugs, faith healing, and care from traditional/herbal practitioners as a first/regular point of call following ill-health as depicted by the findings of the present study. Previous researchers have found faith healing (Sherra, Shahda & Khalid, 2017) and traditional/herbal care including self-medication with herbal drugs (Uzochukwu, Onwujekwe, Onoka & Ughasoro 2008) more attractive to rural compared to urban residents. As observed by Baniya (2014), rural dwellers tend to be more resistant to changes in sociocultural beliefs and practices, and are therefore, more likely to stick to traditional methods of treatments such as faith healing.

Influence of Education on Health-Seeking Behaviors

Educational differences also yielded differences in seeking healthcare at government health facilities as well as self-medication with herbal drugs among respondents. Specifically, respondents with secondary school education were found to seek more care at government health facilities compared to respondents without any formal education. A plausible explanation is that better educated healthcare consumers appreciate the benefits of primary care in mainstream government health facilities compared to those with less education. Findings from previous researchers support the findings of this study that better educated individuals are more likely to

have access to, and seek primary care from mainstream facilities (Buor, 2003; Matsumura & Gubhaju, 2001).

Interestingly, based on the findings from the present study, self-medication with herbal drugs is significantly higher among respondents with tertiary education compared to those with primary education. This agrees with the findings of national studies in Greece (Papakosta, Zavras & Niakas 2014), China (Yuefeng, Keqin & Xiaowei, 2012) and Turkey (Nur, 2010), where self-medication with herbal drugs was found to be significantly more prevalent among individuals with higher education and/or more medical knowledge (Zhao & Ma, 2016). The growing use of herbal medicines even among educated individuals can partly be attributed to the widespread misconception that herbal products are natural, and have neither side effects nor present any dangers compared to pharmaceutical drugs (Ekor, 2014).

Influence of Income on Health-Seeking Behaviors

Differences in income produced significant differences in health-seeking behaviors among respondents using government health facilities as a first point of call, and those seeking care from traditional/herbal practitioners as a first point of call. Specifically, average income earners seek care at government health facilities more often than low income earners, while low income earners sought care more from traditional/herbal practitioners than to average income earners. Whereas income differences exerted opposite effects on these two options of care, it is easy to observe that poorer individuals likely turn to the relatively cheaper option of traditional/herbal care while the relatively better earning respondents are more likely to have health insurance or be better placed to afford care in mainstream settings (government health facilities in this case). These findings agree with Van Doorslaer, Masseria, Koolman and OECD Health Equity Research Group (2006), who report that individuals from the higher income

brackets are significantly more likely to access and utilize specialist care from mainstream facilities compared to poorer individuals while Suswardany, Sibbritt, Supardi, Chang, and Adams (2015) report low incomes as the commonly cited reason for resorting to traditional/herbal treatments in their study among Asia Pacific countries.

Influence of Health Insurance on Health-Seeking Behaviors

Health insurance status only appeared to influence choice of care at government health facilities. Specifically, significant differences were realized between respondents without any health insurance, and those with government health insurance (NHIS), such that respondents with government health insurance sought care more so at government health facilities than those without any health insurance. To the extent that possession of government health insurance covers nearly all medical expenses at government health facilities, it makes sense that those insured under the National Health Insurance Scheme (a form of social health insurance), would want to take advantage of their coverage by seeking care at government health facilities compared to those without any health insurance coverage, for whom medical costs at government health facilities can very easily swell beyond their out-of-pocket capabilities. The findings regarding influence of health insurance on health-seeking behaviors as presented above, mirror those in a study by Newacheck, Hughes, and Stoddard (1996), in which lack of health insurance was found to adversely limit access to primary care services for sick children for whom such care was essential.

Relationships between Health-Seeking Behaviors and Selected Modified Constructs of the Health Belief Model

Health-Seeking Behaviors, Cues to Action and Perceived Benefits

The results of the correlation analysis revealed that significant, linear and positive correlations exist between each health-seeking behavior (option of care) and its respective perceived benefits and cues to action. In simple terms, this means that individuals who believe there are specific benefits to derive from using a particular option of care, and who receive external cues from family members and friends toward that option of care, are more likely to engage that option as a first point of call during ill-health. This also means that intervention programs toward improved health-seeking behaviors may be targeted at modifying the perceived benefits of health-seeking options deemed unsupportive of health, in favor of those supported by sound scientific evidence and research.

Health-Seeking Behaviors and Perceived Severity

Despite the small coefficients reported (that may be attributed to large sample size effects), perceived severity was found to be significantly positively correlated with all the complementary and alternative forms of treatment, namely self-medication with herbal drugs, self-medication with pharmaceutical drugs, care from traditional/herbal practitioners and care from faith healers. As a clinician in Ghana, the present researcher observed that sufferers of chronic diseases, such as diabetes and hypertension for whom lifelong treatment is indicated, tend to explore complementary and alternative forms of treatment such as traditional/herbal care and faith healing for cures to their conditions that are not only elusive, but frequently result in complications of their primary conditions.

These chronic conditions are generally and rightfully regarded as severe medical conditions by the average Ghanaian patient, many of whom find the everyday usage of medications (mainstream treatment) for such conditions burdensome, for which reason they are attracted to the many adverts of curative treatment options from faith healers and traditional practitioners. Sufferers of such ailments also frequently self-medicate with both herbal and patent drugs at the behest of family members and friends who are quick to reference beneficiaries of such treatments for whom treatment outcomes were deemed successful.

Health-Seeking Behaviors and Perceived Susceptibility

Perceived susceptibility to illness was found to be significantly positively correlated with seeking care from government and private health facilities, self-medication with herbal drugs and faith healing, despite the small coefficients. Outside of the significance in correlations being possibly due to large sample size effects, it is likely those who perceive themselves to be susceptible to illness, in general, may feel the need to take prophylactic measures against illnesses through faith healing, self-medication with herbal drugs that tend to have a reputation for being safe and effective against a wide range of medical problems among Ghanaians, as well as resorting to seeking care from mainstream facilities (government and private health facilities) for both treatment and preventive purposes.

Health-Seeking Behaviors and Perceived Barriers

Perceived Barriers to seeking care at private health facilities was found to be negatively correlated with seeking care at private health facilities, while being positively correlated with care seeking from traditional/herbal practitioners, faith healers, and self-medication with pharmaceutical drugs. This suggests that individuals who are dissatisfied with treatment processes and outcomes at private health facilities tend to be drawn to complementary and

alternative forms of treatment, mainly self-medication with pharmaceutical drugs, faith healers, and traditional practitioners.

Sociodemographic Predictors of Health-Seeking Behaviors among Ghanaians

Research question four sought to uncover sociodemographic predictors of each option of healthcare. For lucidity, sociodemographic predictors of each option of care are discussed separately.

Sociodemographic Predictors of Care at Government Health Facilities

The results from the regression analysis revealed that age group and health insurance status were the only independent sociodemographic predictors of seeking care at government health facilities. As supported from the findings in research question two, respondents from older age groups reported seeking care from government health facilities more often compared to those from younger age groups. Again, this may be attributed to greater health care needs among older respondents due to higher prevalence of chronic conditions among these groups of individuals for whom chronic long-term care at mainstream health facilities (government health facilities included) is the mainstay of treatment. The findings that older age group predicts care from government health facilities agree with the findings of Grimsmo and Siem (1984), whose study uncovered increased age as a predictor of regular primary care and was tied to higher prevalence of chronic disorders among the older age groups.

Regarding health insurance, care received at government health facilities is covered by the National Health Insurance Scheme (government health insurance) as well as private health insurance schemes. The emergence of health insurance as another independent predictor of pursuing care at government health facilities just goes to reinforce the fact that, those who enroll in and have valid health insurance, will often resort to obtaining care from government health

facilities as a first point of call to take advantage of their coverage. This also underlines the importance of health insurance as a primary determinant of health-seeking behaviors, and will need to be explored further in any intervention programs to nudge Ghanaian health consumers toward mainstream health facilities as a preferred point of call following ill-health.

Sociodemographic Predictors of Care at Private Health Facilities

Place of residence emerged as the only statistically significant predictor of seeking care at private health facilities. Specifically, urban residents were found to be more likely to seek care at private health facilities compared to rural residents. As explained previously, urban areas have more options of mainstream care, particularly private health facilities compared to rural areas in Ghana, where nearly all mainstream health facilities tend to be government owned or affiliated. Furthermore, urban residents tend to be better off financially compared to rural residents as revealed in a cross-tabulation between place of residence and income, giving urban residents the financial means to access and utilize the often more expensive private health facilities compared to their rural counterparts.

Sociodemographic Predictors of Self-Medication with Herbal Drugs

Findings from the regression analysis revealed age group and health insurance status as the only statistically significant predictors of self-medication with herbal drugs. The directions of the coefficients indicate that increased age group and lack of health insurance were associated with self-medication with herbal drugs. As far as age group is concerned, again, older individuals tend to have a higher burden of chronic ailments for which frequent care is required, a situation that drives relatively higher consumption of healthcare in general (including self-medication with herbal drugs) among older individuals.

Healthcare at mainstream health facilities (both government and private) can be expensive depending on the volume and value of care sought. Without health insurance coverage, out of pocket payments can be out of reach for many individuals needing care, a situation that may compel those without health insurance to seek cheaper alternative forms of care, of which perhaps the cheapest is self-medication with herbal drugs, which explains why the lack of health insurance emerged as a predictor of self-medication with herbal drugs.

Sociodemographic Predictors of Self-Medication with Pharmaceutical Drugs

Age group again materialized as the only statistically significant predictor of self-medication with pharmaceutical drugs. As discussed earlier, the most plausible explanation is the general need for more healthcare among older age groups compared to younger ones due to a higher burden of chronic diseases among older individuals for which frequent care is needed, a situation that may compel many to resort to self-medication with pharmaceutical drugs (Sarahroodi, Maleki-Jamshid, Sawalha, Mikaili, and Safaeian, 2012).

Sociodemographic Predictors of Care from Traditional/Herbal Practitioners

The regression model for sociodemographic predictors of care from traditional/herbal practitioners revealed income as the only statistically significant predictor of seeking care from traditional/herbal practitioners. Care provided by traditional/herbal practitioners is not covered by health insurance (neither government nor private), and can be expensive depending on the volume and duration of care, despite being a convenient option of care among some individuals. As indicated by the direction of the coefficient and Kruskal-Wallis tests, seeking care from traditional/herbal practitioners is significantly more pronounced among the average income earners than the low-income earners, which suggests that low income earners may not be able to

afford the out of pocket payments required by traditional/herbal practitioners compared to the average income earners. This is especially true for care at the emerging “scientific” herbal clinics in Ghana that incorporate mainstream diagnostic approaches in their operations, but maintain the use of herbal preparations in their treatment of patients.

One would expect that average income earners who can afford out of pocket payments for traditional/herbal care should be able to pay for health insurance to receive care at mainstream health facilities. The observation that average income earners may be using more care from traditional/herbal practitioners can be attributed to reasons such as dissatisfaction with mainstream care (Aziato & Antwi 2016) or other reasons that may be unearthed through a qualitative enquiry. Considering that traditional/herbal care from practitioners is not covered by health insurance and can be expensive depending on the disease(s) under consideration, the volume of care offered and the reputation of the practitioner, it is also possible financial costs of such care limit it among the lower income earners, while the average income earners are able to afford such treatments, leading to the significant difference between the two income groups as shown by the results.

Sociodemographic Predictors of Care from Faith Healers

Region of residence emerged as the only statistically significant predictor of seeking care from faith healers. Seeking faith healing as an option of care was significantly more pronounced in the Northern and Volta regions compared to the Greater Accra and Ashanti regions.

Underlying sociocultural and religious beliefs and practices (such as belief in supernatural cause of diseases) may be driving forces behind this observation. Despite supportive suggestions by other researchers that differences in sociocultural environment subsume the use of alternative treatments in Ghana (Gyasi et al., 2016), the present researcher could not find any study specifically coupling sociocultural beliefs and practices to faith healing in one region over the

other. Nevertheless, there are both intra and inter-regional differences in sociocultural beliefs and practices that may inform such differences in faith healing behaviors for which a qualitative enquiry may be indicated. Moreover, the Northern and Volta regions have more rural settings compared to the Greater Accra and Volta regions, possibly limiting options of care in these regions, and driving many healthcare consumers toward complementary and alternative forms of care, of which faith healing is an option.

Predictors of Health-Seeking Behaviors based on Selected Modified Constructs of the Health Belief Model

The regression analysis for predictors of health-seeking behaviors based on selected modified constructs of the HBM revealed that perceived benefits specific to each option of care emerged as significant predictors of each corresponding option of care. Cues to action specific to each option of care also emerged as significant predictors to each respective option of care except for seeking care at government health facilities for which cues to action failed to be a significant predictor. However, perceived susceptibility to illness also emerged as a strong predictor of seeking care at government health facilities. This may well be an indication that those who frequently fall ill, or believe they are more prone to falling ill, want a continuity of care from government health facilities as preferred first point of call following ill-health since government facilities tend to offer more specialized services than private health facilities with tertiary and regional government health facilities serving as referral points to both government and private health facilities at the lower levels of care (especially primary care).

Perceived barriers to private health facilities also emerged as the only statistically significant predictor of seeking care from private health facilities, with the negative direction suggesting those who perceived any barriers to utilizing private health facilities were likely not

private health facilities, with the positive direction suggesting those who perceive any barriers to seeking care at government health facilities (such as poor quality of services or longer waiting times), resort to private health facilities as a first point of call following ill-health. Healthcare at government health facilities in Ghana can be slow and time consuming, with unending complaints of poor quality of services from healthcare consumers and industry players, of which the present researcher is a member. Subsequently, individuals dissatisfied with healthcare services at government health facilities (perceived barriers at government health facilities), but who still prefer mainstream care, turn to private health facilities as depicted by the findings of this study.

Limitations of the Study

Despite what the present researcher considers satisfactory conduction of the study, there are some significant limitations to the study that ought to be mentioned. The first limitation to the present study was the threat of social desirability bias where participants respond in a way that shows only their positive sides (Grimm, 2010). This was especially significant given community-based volunteers who assisted the trained research assistants in the enumeration process were known to some of the respondents or even had some social ties in a few instances.

Moreover, the researcher considers the use of a convenience sampling approach for recruiting participants a limitation in the present study. Since participation in the study was voluntary rather than by random assignment, and the researcher did not sample non-participants to compare differences in demographic characteristics, this could weaken the generalizability of the study if indeed, significant differences exist between respondents and non-respondents in the true populations.

Additionally, occurrence of recall bias, where participants fail to accurately capture past events necessary for the internal validity of the study was a possibility in the present study. For the most part, the study relied on participants' voluntary recall of past health-seeking behaviors and associated factors. Within reasonable limits, it is possible some participants may not have accurately recalled their past health-seeking behaviors and associated factors such as perceived severity of last illness, or simply misrepresented the information. The trained research assistants who collected the data reported that, some respondents appeared suspicious when asked some of the research questions and hesitated in providing responses in some instances.

Finally, the use of trained RAs to administer surveys to participants without formal education who speak a local language not understood by the RAs might have led to some inaccuracies in collected data, impacting internal validity of the study as translations by community-based volunteers may not have been an accurate representation of the respondents' views.

Recommendations for Future Research

Based on the findings of the present study, the researcher wishes to offer some suggestions for future research. First, any future research evaluating the determinants of health-seeking behaviors should be expanded to capture the knowledge, attitudes, and beliefs regarding the various options of care available. This way, it will be possible to constructively evaluate the knowledge-attitude-behaviors axis as it applies to health-seeking behaviors. This will also offer investigators and public health practitioners the opportunity to determine what knowledge-practice gaps exist in health-seeking behaviors to serve as a basis for intervention programs.

Second, future research should aim to use a random sampling approach in order to improve generalizability of the study findings. Since the study covered only 4 out of the 10

regions in Ghana, it is also recommended that any future research should be expanded to cover all 10 administrative regions in Ghana, to give the study a truly national character.

Third, any future research should incorporate a qualitative enquiry to make the study a mixed methods study. This will give the findings a more wholistic appeal as the qualitative and quantitative findings complement each other. The suggested qualitative enquiry should also be extended to capture the views of care providers (both mainstream and complementary and alternative medicine practitioners). This will build a stronger study and provide complete information (needs assessment) for purposes of intervention programs.

Contributions of the Present Study and Implications for Health Education

The contributions of this dissertation to the literature and scope of health education practice can be placed into two broad categories. While many studies have interrogated specific health-seeking behaviors among various populations, this is possibly the first study for which a research instrument was synthesized based on the Health Belief Model and exhaustive review of extant literature to comprehensively evaluate not one, but multiple health-seeking behaviors in a given population. The first contribution of this study to the field of health education is thus, the creation and validation of a scale based on the Health Belief Model for evaluating multiple health-seeking behaviors. The present author believes this scale will serve as an important resource for researchers and public health practitioners in the West African sub-region and beyond, in their efforts to understand and develop intervention programs for improved health-seeking behaviors among various populations.

Development of successful public health intervention programs must be supported by sound theoretical basis and empirical evidence. As mentioned in earlier chapters of this dissertation, the timing and volume of healthcare sought and consumed, can mean all the

difference between life and death. To the extent that not all the avenues for seeking and receiving medical care in times of ill-health (or other health needs) confer the same opportunities for satisfying the seekers' health needs such that some options of care (for which there is little or no scientific support) may actually lead to the development of complications and/or fatalities, public health intervention programs to nudge health care consumers toward evidence-based options of care is not only desirable, but critical to reducing mortality rates from ineffective and/or unproven treatments.

As a licensed physician working in tertiary health facility in Ghana, the present researcher personally witnessed many cases where patients lost their lives simply because they spent the early parts (and perhaps most critical times) of their ailments wrongly treating themselves or seeking inappropriate care only to turn up at the facility when several complications have already set in at which point reversal is utopian. The second contribution is therefore the findings of the study itself, which beyond providing appreciable understanding of the factors that affect and influence health-seeking behaviors among Ghanaians, can provide fodder for the development of intervention programs to improve health-seeking behaviors among Ghanaians. Indeed, the present researcher maintains a special interest in expanding this study and converting it into an intervention program to improve health-seeking behaviors among Ghanaians in the near future.

The present study's implications for health education can be tied to the contributions discussed above. For the purposes of emphasis, this study provides a valid tool for probing health-seeking behaviors as well as comprehensive findings from the study which can partly satisfy the requirements of a needs assessment, considered a cornerstone of health education practice, while providing sufficient information to set the stage for other competency areas of

health educators set forth by the National Commission for Health Education Credentialing (2016), namely planning, implementing, administering, and evaluating intervention programs, in this case to improve health-seeking behaviors among Ghanaians and other populations for which the new scale may be adopted.

Conclusions

Health-seeking behaviors are important determinants of health and health outcomes. In pluralistic health environments like Ghana, where different avenues exist for seeking and receiving medical care, the timing, value, and volume of healthcare sought and received can mean all the difference between life and death. To the extent that the different avenues that exist for satisfying health needs of health consumers do not offer the same opportunities for mitigating the health problems of healthcare consumers, it is of interest to public health practitioners in general, and health educators in particular, to find ways to improve health-seeking behaviors among the health-consuming public as part of concerted efforts to reduce mortality and improve overall quality of life.

Perhaps the first and most important step to designing intervention programs to improve health-seeking behaviors among any population is to research the factors that influence health-seeking behaviors among the population of interest. In line with the preceding point, this study was designed to serve two purposes – design a comprehensive instrument for studying the determinants of health seeking behaviors based on constructs of the Health Belief Model, and then use the instrument created to study the determinants of health-seeking behaviors among Ghanaian healthcare consumers.

The results from a Principal Component Analysis depict the created scale as valid and reliable, while findings of the main study indicate that 34.4% of respondents used government health

facilities (GHF) as a first point of call following ill-health, followed by 28.6% for self-medication with pharmaceutical drugs (SMP) and 17% for self-medication with herbal drugs (SMH). Additionally, 11.2% of respondents used private health facilities (PHF) as a first point of call following ill-health, while 4.8% resorted to care from traditional/herbal practitioners (THP) following ill-health, and 4.1% used faith healing as a regular option of care following ill-health.

Further analysis revealed age group as a strong statistical predictor of care at government health facilities, self-medication with pharmaceutical drugs as well as self-medication with herbal drugs, with older respondents using these options of care more than younger respondents, while place of residence emerged as a strong statistical predictor of care at private health facilities, with urban residents seeking more care at private health facilities compared to rural residents. Regarding care from traditional/herbal practitioners, income materialized as the only strong predictor, with poorer individuals more inclined towards care from traditional/herbal practitioners compared to individuals in the higher income categories. Region of residence was also found to be the only statistically significant predictor of faith healing practices with more faith healing reported in the Northern and Volta regions compared to the Greater Accra and Ashanti regions.

When selected modified constructs of the Health Belief Model were considered, it was determined that perceived benefits and cues to action were consistently predictive of their specific options of care except for care at government health facilities for which only perceived benefits was predictive. Perceived susceptibility to illness was however also predictive of care at government health facilities only, while perceived barriers to care at government health facilities

positively predicted care at private health facilities and perceived barriers to care at private health facilities negatively predicted care at private health facilities.

In the final analysis, while this study uncovered important factors (both sociodemographic and selected modified constructs of the HBM) that determine and influence health-seeking behaviors among Ghanaians, that can provide a basis for future intervention programs, the present researcher recommends expansion of the scope of the present study before any such programs gather momentum. Specifically, it is recommended that a complementary qualitative enquiry be incorporated to provide a wholistic appreciation of the factors that determine and influence health-seeking behaviors among Ghanaians before any intervention programs are commenced based on the findings of this study.

REFERENCES

- Abu-Mourad, T., Alegakis, A., Shashaa, S., Koutis, A., Lionis, C., & Philalithis, A. (2008). Individual determinants of primary healthcare utilisation in Gaza Strip, Palestine. *Journal of Epidemiology & Community Health*, 62(8), 701-707.
- Adedini, Sunday A., et al. "Barriers to accessing health care in Nigeria: implications for child survival." *Global Health Action* 7.1 (2014): 23499.
- Adegoke, T. G. (2007). Socio-cultural factors influencing the use of spiritual healing churches in Ibadan Metropolis, Nigeria. *Anthropologist*, 9(3), 225-232.
- Adu-Sarkodie, Y. A. (1997). Antimicrobial self-medication in patients attending a sexually transmitted diseases clinic. *International journal of STD & AIDS*, 8(7), 456-458.
- African Development Bank Group (2017). Ghana Key Facts. Retrieved from <https://www.afdb.org/en/countries/west-africa/ghana/>. Accessed June 8, 2017
- Ahmed, S. M., Adams, A. M., Chowdhury, M., & Bhuiya, A. (2000). Gender, socioeconomic development and health-seeking behaviour in Bangladesh. *Social science & medicine*, 51(3), 361 -371
- Akeju, D. O., Oladapo, O. T., Vidler, M., Akinmade, A. A., Sawchuck, D., Qureshi, R., ... & von Dadelszen, P. (2016). Determinants of health care seeking behaviour during pregnancy in Ogun State, Nigeria. *Reproductive Health*, 13(1), 32.
- Alavi, N. M., Alami, L., Taefi, S., & Gharabagh, G. S. (2011). Factor analysis of self-treatment in diabetes mellitus: a cross-sectional study. *BMC public health*, 11(1), 761.
- Al-Azzam, S., Al-Husein, B., Alzoubi, F., Masadeh, M., & Ali, M. (2007). Self-medication with antibiotics in Jordanian population. *International journal of occupational medicine and environmental health*, 20(4), 373-380.
- Al-Doghaither, A. H., Abdelrhman, B. M., Saeed, A. W., & Magzoub, M. E. M. A. (2003). Factors influencing patient choice of hospitals in Riyadh, Saudi Arabia. *The journal of the Royal Society for the Promotion of Health*, 123(2), 105-109.
- Al-Rowais, N., Al-Faris, E., Mohammad, A. G., Al-Rukban, M., & Abdulghani, H. M. (2010). Traditional healers in Riyadh region: reasons and health problems for seeking their advice. A household survey. *The Journal of Alternative and Complementary Medicine*, 16(2), 199-204.

- Alsubaie, A. M., Almohaimede, K. A., Aljadoa, A. F., Jarallah, O. J., Althnayan, Y. I., & Alturki, Y. A. (2016). Socioeconomic factors affecting patients' utilization of primary care services at a Tertiary Teaching Hospital in Riyadh, Saudi Arabia. *Journal of family & community medicine*, 23(1), 6.
- Anderson, T. J., Saman, D. M., Lipsky, M. S., & Lutfiyya, M. N. (2015). A cross-sectional study on health differences between rural and non-rural US counties using the County Health Rankings. *BMC health services research*, 15(1), 441.
- Andrade, C., & Radhakrishnan, R. (2009). Prayer and healing: A medical and scientific perspective on randomized controlled trials. *Indian journal of psychiatry*, 51(4), 247.
- Angell, M., & Kassirer, J. P. (1998). Alternative medicine-the risks of untested and unregulated remedies. *New England Journal of Medicine*, 339, 839-840.
- Angell, M., & Kassirer, J. P. (1998). Alternative medicine-the risks of untested and unregulated remedies. *New England Journal of Medicine*, 339, 839-840.
- Aqeel, T., Shabbir, A., Basharat, H., Bukhari, M., Mobin, S., Shahid, H., & Waqar, S. A. (2014). Prevalence of self-medication among urban and rural population of Islamabad, Pakistan. *Tropical Journal of Pharmaceutical Research*, 13(4), 627-633.
- Asante F, Aikins M: *Does the NHIS cover the poor?* Accra: Institute of Statistical Social & Economic Research and School of Public Health at the University of Ghana; 2008.
- Asenso-Okyere, W. K., Anum, A., Osei-Akoto, I., & Adukonu, A. (1998). Cost recovery in Ghana: Are there Any changes in health care seeking behavior? *Health policy and planning*, 13(2), 181-188.
- Astin, J. A., Stone, J., Abrams, D. I., & Moore, D. H. (2006). The efficacy of distant healing for human immunodeficiency virus-results of a randomized trial. *Alternative therapies in health and medicine*, 12(6), 36.
- Ateeq, M., Jehan, S., & Mehmmod, R. (2014). Faith healing; modern health care. *Professional Medical Journal*, 21(2).
- Audu, O., Bako Ara, I., Abdullahi Umar, A., Nanben Omole, V., & Avidime, S. (2014). Sociodemographic correlates of choice of health care services in six rural communities in North Central Nigeria. *Advances in Public Health*, 2014.
- Aviles, J. M., Whelan, S. E., Hernke, D. A., Williams, B. A., Kenny, K. E., O'fallon, W. M., &

- Kopecky, S. L. (2001, December). Intercessory prayer and cardiovascular disease progression in a coronary care unit population: a randomized controlled trial. In *Mayo Clinic Proceedings* (Vol. 76, No. 12, pp. 1192-1198). Elsevier.
- Awad, A. I., Eltayeb, I. B., & Capps, P. A. (2006). Self-medication practices in Khartoum state, Sudan. *European journal of clinical pharmacology*, 62(4), 317.
- Awad, A., Eltayeb, I., Thalib, L., & Matowe, L. (2017). Self-medication with antibiotics and in the community of Khartoum State, Sudan.
- Awedoba, A. K. (2006). The Peoples of Northern Ghana. *Accra, Ghana: National Commission on Culture*.
- Awoke, M. A., Negin, J., Moller, J., Farrell, P., Yawson, A. E., Biritwum, R. B., & Kowal, P. (2017). Predictors of public and private healthcare utilization and associated health system responsiveness among older adults in Ghana. *Global Health Action*, 10(1), 1301723.
- Azjen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50, 179-211.
- Baker, D. P., Leon, J., Smith Greenaway, E. G., Collins, J., & Movit, M. (2011). The education effect on population health: a reassessment. *Population and development review*, 37(2), 307-332.
- Balamurugan, E., & Ganesh, K. (2011). Prevalence and pattern of self-medication use in coastal regions of South India. *Br J Med Pract*, 4(3), a428.
- Baniya (2014). Traditional healing practices in rural Nepal. Retrieved online from file:///C:/Users/Kaamel/Downloads/13020-44868-1-SM.pdf on 11/6/2017
- Baranowski, T., Perry, C. L., & Parcel, G. S. (2002). How individuals, environments, and health behavior interact. *Health behavior and health education: Theory, research, and practice*, 3, 165 -184.
- Bassler, K. (2016). The influence of gender and other patient characteristics on health care seeking behavior: a QUALICOPC study. *BMC family practice*, 17(1), 38.
- Becker, M. H., Maiman, L. A., Kirscht, J. P., Haefner, D. P., Drachman, R. H., & Taylor, D. W.

- (1979). Patient perceptions and compliance: recent studies of the health belief model. *Compliance in health care*, 8, 78-109.
- Bennadi, D. (2013). Self-medication: A current challenge. *Journal of basic and clinical pharmacy*, 5(1), 19.
- Benson, H., Dusek, J. A., Sherwood, J. B., Lam, P., Bethea, C. F., Carpenter, W., ... & Drumel, D. (2006). Study of the Therapeutic Effects of Intercessory Prayer (STEP) in cardiac bypass patients: a multicenter randomized trial of uncertainty and certainty of receiving intercessory prayer. *American heart journal*, 151(4), 934-942.
- Bent, S. (2008). Herbal medicine in the United States: review of efficacy, safety, and regulation. *Journal of general internal medicine*, 23(6), 854-859.
- Bertakis, K. D., Azari, R., Helms, L. J., Callahan, E. J., & Robbins, J. A. (2000). Gender differences in the utilization of health care services. *Journal of family practice*, 49(2), 147-147.
- Beyerstein, B. L. (2001). Alternative medicine and common errors of reasoning. *Academic Medicine*, 76(3), 230-237.
- Biritwum, R. B., Welbeck, J., & Barnish, G. (2000). Incidence and management of malaria in two communities of different socio—economic level, in Accra, Ghana. *Annals of Tropical Medicine & Parasitology*, 94(8), 771-778.
- Bland, J. M., & Altman, D. G. (1997). Statistics notes: Cronbach's alpha. *Bmj*, 314(7080), 572.
- Blazer, D. G., & Hernandez, L. M. (Eds.). (2006). *Genes, behavior, and the social environment: Moving beyond the nature/nurture debate*. National Academies Press.
- Bloom, D. E. (2007). *Education, health, and development*. Cambridge, MA: American Academy of Arts and Sciences.
- Boateng, M. A., Danso-Appiah, A., Turkson, B. K., & Tersbøl, B. P. (2016). Integrating biomedical and herbal medicine in Ghana—experiences from the Kumasi South Hospital: a qualitative study. *BMC Complementary and Alternative Medicine*, 16(1), 189.
- Bodeker, G., & Kronenberg, F. (2002). A public health agenda for traditional, complementary, and alternative medicine. *American journal of public health*, 92(10), 1582-1591.
- Bortz, W. M. (2005). Biological basis of determinants of health. *American journal of public*

health, 95(3), 389-392.

- Braveman, P., & Gottlieb, L. (2014). The social determinants of health: it's time to consider the causes of the causes. *Public Health Reports*, 129(1_suppl2), 19-31.
- Brousseau, D. C., A Panepinto, J., Nimmer, M., & Hoffmann, R. G. (2010). The number of people with sickle-cell disease in the United States: national and state estimates. *American journal of hematology*, 85(1), 77-78.
- Buor, D. (2003). Analysing the primacy of distance in the utilization of health services in the Ahafo-Ano South district, Ghana. *The International journal of health planning and management*, 18(4), 293-311.
- Cangelosi, R., & Goriely, A. (2007). Component retention in principal component analysis with application to cDNA microarray data. *Biology direct*, 2(1), 2.
- Caraher, M. (1998). Patient education and health promotion: clinical health promotion—the conceptual link. *Patient Education and Counseling*, 33(1), 49-58.
- Carrasco-Garrido, P., Hernández-Barrera, V., López de Andrés, A., Jiménez-Trujillo, I., & Jiménez-García, R. (2010). Sex—Differences on self-medication in Spain. *pharmacoepidemiology and drug safety*, 19(12), 1293-1299.
- Cattell, R. B. (1966). The scree test for the number of factors. *Multivariate behavioral research*, 1(2), 245-276.
- Cawley, J., & Ruhm, C. (2011). *The economics of risky health behaviors* (No. w17081). National Bureau of Economic Research.
- CDC (2016). Global Health – Ghana. Retrieved from <https://www.cdc.gov/globalhealth/countries/ghana/>
- CDC (2017). Social Determinants of Health: Know What Affects Health. 05/11/2017. Retrieved from <https://www.cdc.gov/socialdeterminants/> on 07/18/2017
- CDC, Top Ten Causes of Morbidity and Mortality in Ghana, 2015. Retrieved from <http://www.cdc.gov/globalhealth/countries/ghana/pdf/ghana-2013.pdf>. Accessed 6/6/2017
- Center for Scientific Research into Plant Medicine Act (1975). Retrieved from http://www.wipo.int/wipolex/en/text.jsp?file_id=225600
- Cha, K. Y., Wirth, D. P., & Lobo, R. A. (2001). Does prayer influence the success of in vitro fertilization-embryo transfer. *J Reprod Med*, 46(9), 781-87.

- Chen, W. W. (2001). The relationship between health education and health promotion: A personal perspective. *American Journal of Health Education*, 32(6), 369-370.
- Cherniack, E. P., Ceron-Fuentes, J., Florez, H., Sandals, L., Rodriguez, O., & Palacios, J. C. (2008). Influence of race and ethnicity on alternative medicine as a self-treatment preference for common medical conditions in a population of multi-ethnic urban elderly. *Complementary therapies in clinical practice*, 14(2), 116-123.
- Chi, C. (1994). Integrating traditional medicine into modern health care systems: examining the role of Chinese medicine in Taiwan. *Social Science & Medicine*, 39(3), 307-321.
- CIA World Fact Book, Africa, Ghana, 2015. Retrieved from <https://www.cia.gov/library/publications/the-world-factbook/geos/gh.html>. Accessed 6/6/2017
- Coates, J. R., & Jobst, K. A. (1998). Integrated healthcare: a way forward for the next five years? A discussion document from the Prince of Wales's Initiative on Integrated Medicine. *The Journal of Alternative and Complementary Medicine*, 4(2), 209-247.
- Cockerham, W. C. (2014). *Medical sociology*. John Wiley & Sons, Ltd.
- Concise medical dictionary. (8th ed.). Oxford, New York: Oxford University Press. Retrieved from <http://www.oxfordreference.com/view/10.1093/acref/9780199557141.001.0001/acref/9780199557141>. Accessed 6/6/2017
- Coulter, I. D., & Willis, E. M. (2004). The rise and rise of complementary and alternative medicine: a sociological perspective. *Medical Journal of Australia*, 180(11), 587-590.
- Creswell, J. W. (2003). *Research design: Qualitative, quantitative, and mixed methods approaches* (2nd ed.). Thousand Oaks, CA: SAGE Publications, Inc
- Crocker, L., & Algina, J. (1986). *Introduction to classical and modern test theory*. Holt, Rinehart and Winston, 6277 Sea Harbor Drive, Orlando, FL 32887.
- Currie, D., & Wiesenberg, S. (2003). Promoting women's health-seeking behavior: research and the empowerment of women. *Health Care for Women International*, 24(10), 880-899.
- Dalaba, M. A., Akweongo, P., Aborigo, R., Awine, T., Azongo, D. K., Asaana, P., ... & Oduro, A. (2014). Does the national health insurance scheme in Ghana reduce household cost of treating malaria in the Kassena-Nankana districts?. *Global health action*, 7(1), 23848.

- Dayaratna, Kevin D. "Studies show: Medicaid patients have worse access and outcomes than the privately insured." *The Heritage Foundation Backgrounder* 2740 (2012).
- De Melo, M. N., Madureira, B., Ferreira, A. P. N., Mendes, Z., da Costa Miranda, A., & Martins, A. P. (2006). Prevalence of self-medication in rural areas of Portugal. *Pharmacy World and Science*, 28(1), 19-25.
- Debas, H. T., Laxminarayan, R., & Straus, S. E. (2006). Complementary and alternative medicine. *Disease control priorities in developing countries*, 2, delays. *The Journal of pediatrics*, 155(2), 281-285.
- Denton, F. T., & Spencer, B. G. (2010). Chronic health conditions: changing prevalence in an aging population and some implications for the delivery of health care services. *Canadian Journal on Aging/La Revue canadienne du vieillissement*, 29(1), 11-21.
- DeVoe, J. E., Baez, A., Angier, H., Krois, L., Edlund, C., & Carney, P. A. (2007). Insurance+ access≠ health care: Typology of barriers to health care access for low-income families. *The Annals of Family Medicine*, 5(6), 511-518.
- Dignan, M. B., Steckler, A. R., Steckler, A. B., & Goodman, R. M. (1995). *Measurement and evaluation of health education*. Charles C Thomas Pub Ltd.
- Drew, A. K., & Myers, S. P. (1997). Safety issues in herbal medicine: implications for the health professions. *The Medical Journal of Australia*, 166(10), 538-541.
- Duru, C. B., Uwakwe, K. A., Chinomnso, N. C., Mbachii, I. I., Diwe, K. C., Agunwa, C. C., ... & Merenu, I. A. (2016). Socio-demographic Determinants of Herbal Medicine Use in Pregnancy Among Nigerian Women Attending Clinics in a Tertiary Hospital in Imo State, South-East, Nigeria. *American Journal of Medicine Studies*, 4(1), 1-10.
- Ekor, M. (2014). The growing use of herbal medicines: issues relating to adverse reactions and challenges in monitoring safety. *Frontiers in pharmacology*, 4, 177.
- Ernst, E. (2003). Serious adverse effects of unconventional therapies for children and adolescents: a systematic review of recent evidence. *European journal of pediatrics*, 162(2), 72-80.
- Fenny, A. P., Asante, F. A., Enemark, U., & Hansen, K. S. (2015). Malaria care seeking behavior of individuals in Ghana under the NHIS: Are we back to the use of informal care? *BMC Public Health*, 15(1), 370.
- Ferré, L. (1995). Selection of components in principal component analysis: a comparison of

- methods. *Computational Statistics & Data Analysis*, 19(6), 669-682.
- Fleitlich, B., & Goodman, R. (2001). Social factors associated with child mental health problems in Brazil: cross sectional survey. *Bmj*, 323(7313), 599-600.
- Fontanarosa, P. B., & Lundberg, G. D. (1998). Alternative medicine meets science. *Jama*, 280(18), 1618-1619.
- Friedberg, M. W., Hussey, P. S., & Schneider, E. C. (2010). Primary care: a critical review of the evidence on quality and costs of health care. *Health Affairs*, 29(5), 766-772.
- Gæde, P., Lund-Andersen, H., Parving, H. H., & Pedersen, O. (2008). Effect of a multifactorial intervention on mortality in type 2 diabetes. *New England Journal of Medicine*, 358(6), 580-591.
- Galdas, P. M., Cheater, F., & Marshall, P. (2005). Men and health help-seeking behavior: literature review. *Journal of advanced nursing*, 49(6), 616-623.
- Garrett, G. (1990). Health and happiness. In *Older People: Their Support and Care* (pp. 11-18). Macmillan Education UK.
- Gelayee, D. A. (2017). Self-Medication Pattern among Social Science University Students in Northwest Ethiopia. *Journal of pharmaceutics*, 2017.
- Ghana Health Service: *Annual Report*. Accra; Ghana Health Service; 2007. Retrieved from <https://www.ghanahealthservice.org/downloads/GHS%202007%20Annual%20Report.pdf>. Accessed 6/6/2017
- Ghana Statistical Service (2012). Ghana 2010 Population and Housing Census, 2010. Retrieved from www.statsghana.gov.gh. Accessed 6/6/2017
- Ghana Statistical Service, Country Profile, 2015. Retrieved from <http://www.statsghana.gov.gh/>. Accessed 6/6/2017
- GHS (2017). Structure of Delivery of Services. Retrieved from <http://www.ghanahealthservice.org/ghs-subcategory.php?cid=&scid=44> on 8/6/2017
- Glanz, K., Rimer, B. K., & Viswanath, K. (2008). *Health behavior and health education: Theory, research, and practice* (4th ed.). San Francisco, CA: Jossey-Bass.
- Glasgow, R. E., Vogt, T. M., & Boles, S. M. (1999). Evaluating the public health impact of health promotion interventions: the RE-AIM framework. *American journal of public health*, 89(9), 1322-1327.

- Gold, R. S., & Miner, K. R. (2002). Report of the 2000 joint committee on health education and promotion terminology. *Journal of School Health, 72*(1), 3-7.
- Goodman PG, Haw S, Kabir Z, Clancy L. Are There Health Benefits Associated With Comprehensive Smoke-Free Laws?. *International Journal of Public Health* 2009; 54:367–78
- Government of Ghana (2017). About Ghana. Retrieved from <http://www.ghana.gov.gh/>. Accessed June 8, 2017
- Gqaleni, N., Moodley, I., Kruger, H., Ntuli, A., & McLeod, H. (2007). Traditional and complementary medicine: health care delivery. *South African Health Review, 2007*(1), 175-188.
- Green, L. W. (1984). Modifying and developing health behavior. *Annual review of public health, 5*(1), 215-236.
- Grimm, P. (2010). Social desirability bias. *Wiley international encyclopedia of marketing*.
- Grimsno, a., & Siem, H. (1984). Factors affecting primary health care utilization. *Family practice, 1*(3), 155-161.
- Gulliford, M., Figueroa-Munoz, J., Morgan, M., Hughes, D., Gibson, B., Beech, R., & Hudson, M. (2002). What does 'access to health care' mean?. *Journal of health services research & policy, 7*(3), 186-188.
- Gyasi, R. M., Asante, F., Abass, K., Yeboah, J. Y., Adu-Gyamfi, S., & Amoah, P. A. (2016). Do health beliefs explain traditional medical therapies utilisation? Evidence from Ghana. *Cogent Social Sciences, 2*(1), 1209995.
- Gyasi, R. M., Mensah, C. M., & Siaw, L. P. (2015). Predictors of traditional medicines utilisation in the Ghanaian health care practice: Interrogating the Ashanti situation. *Journal of Community Health, 40*(2), 314-325.
- Gyimah, S. O. (2007). What has faith got to do with it? Religion and child survival in Ghana. *Journal of biosocial science, 39*(06), 923-937.
- Hair, J.F., Black, W.C., Babin, B.J., & Anderson, R.E. (2010). *Multivariate Data Analysis*. Seventh Edition. Prentice Hall, Upper Saddle River, New Jersey.

- Harris, W. S., Gowda, M., Kolb, J. W., Strychacz, C. P., Vacek, J. L., Jones, P. G., ... & McCallister, B. D. (1999). A randomized, controlled trial of the effects of remote, intercessory prayer on outcomes in patients admitted to the coronary care unit. *Archives of Internal medicine*, 159(19), 2273-2278.
- Healthy People (2014). n.d. Retrieved from <https://www.healthypeople.gov/2020/about/foundation-health-measures/Determinants-of-Health> on July 12, 2017
- Herman, P. M., Poindexter, B. L., Witt, C. M., & Eisenberg, D. M. (2012). Are complementary therapies and integrative care cost-effective? A systematic review of economic evaluations. *BMJ open*, 2(5), e001046.
- Hernandez, L. M., & Blazer, D. G. (2006). The Impact of Social and Cultural Environment on Health.
- Hochbaum, G. M. (1958). *Public participation in medical screening programs: A socio psychological study*. (Public Health Service Publication No. 572). Washington, DC: US Government Printing Office.
- Huber, M., Knottnerus, J. A., Green, L., van der Horst, H., Jadad, A. R., Kromhout, D., ... & Schnabel, P. (2011). How should we define health?. *BMJ: British Medical Journal*, 343.
- Hughes, C. M., McElnay, J. C., & Fleming, G. F. (2001). Benefits and risks of self medication. *Drug safety*, 24(14), 1027-1037.
- Humayun, S., Imran, W., Naheed, I., Javid, N., Hussain, M., & Azhar, M. (2016). Analysis of Self Medication Practices. *Professional Medical Journal*, 23(5), 608-613.
- Idris, I., Deepa, R., Fernando, D. J., & Mohan, V. (2008). Relation between age and coronary heart disease (CHD) risk in Asian Indian patients with diabetes: A cross-sectional and prospective cohort study. *Diabetes research and clinical practice*, 81(2), 243-249.
- Ihaji, E., Eze, U. G., & Ogwuche, C. H. E. (2014). Educational level, sex and church affiliation on health seeking behavior among parishioners in Makurdi metropolis of Benue state. *Journal of Educational Policy and Entrepreneurial Research*, 1(2), 307-312.
- Institute for Health Metrics and Evaluation (2015). Retrieved from <http://www.healthdata.org/ghana>
- International Agency for Research on Cancer. (2009). Evaluating the effectiveness of smoke-free

- policies. *Lyon, France: International Agency for Research on Cancer.*
- Jackson, D. A. (1993). Stopping rules in principal components analysis: a comparison of heuristical and statistical approaches. *Ecology, 74*(8), 2204-2214.
- Jafari, F., Khatony, A., & Rahmani, E. (2015). Prevalence of self-medication among the elderly in Kermanshah-Iran. *Global journal of health science, 7*(2), 360.
- Jemal, A., Siegel, R., Ward, E., Hao, Y., Xu, J., Murray, T., & Thun, M. J. (2008). Cancer statistics, 2008. *CA: a cancer journal for clinicians, 58*(2), 71-96.
- Kaadaaga, H. F., Ajeani, J., Ononge, S., Alele, P. E., Nakasujja, N., Manabe, Y. C., & Kakaire, O. (2014). Prevalence and factors associated with use of herbal medicine among women attending an infertility clinic in Uganda. *BMC complementary and alternative medicine, 14*(1), 27.
- Kaiser, H. F., & Rice, J. (1974). Little jiffy, mark IV. *Educational and psychological measurement, 34*(1), 111-117.
- Karr, J. R., & Martin, T. E. (1981). Random numbers and principal components: further searches for the unicorn?[Bird/habitat relationships]. *General technical report RM-Rocky Mountain Forest and Range Experiment Station, United States, Forest Service (USA).*
- Kassena-Nankana District Mutual Health Insurance Scheme (2012). Report: National Health Insurance Authority; Navrongo, Ghana
- Keche, Y., Yegnanarayan, R., Bhoyar, S., Agrawal, R., Chavan, R., & Mahendrakar, P. (2012). Self-medication pattern in rural areas in Pune, India. *International Journal of Medicine and Public Health, 2*(4).
- Kimberlin, C. L., & Winterstein, A. G. (2008). Validity and reliability of measurement instruments used in research. *American Journal of Health-System Pharmacy, 65*(23), 2276-2284.
- Kimbrow, R. T., Bzostek, S., Goldman, N., & Rodríguez, G. (2008). Race, ethnicity, and the education gradient in health. *Health Affairs, 27*(2), 361-372.
- Kraft, A. D., Quimbo, S. A., Solon, O., Shimkhada, R., Florentino, J., & Peabody, J. W. (2009). The health and cost impact of care delay and the experimental impact of insurance on reducing
- Kroeger, A. (1983). Anthropological and socio-medical health care research in developing countries. *Social science & medicine, 17*(3), 147-161.

- Kumar, V., Mangal, A., Yadav, G., Raut, D., & Singh, S. (2015). Prevalence and pattern of self-medication practices in an urban area of Delhi, India. *Medical Journal of Dr. DY Patil University*, 8(1), 16.
- Kyei, J. J., Dueck, A., Indart, M. J., & Nyarko, N. Y. (2014). Supernatural belief systems, mental health and perceptions of mental disorders in Ghana. *International Journal of Culture and Mental Health*, 7(2), 137-151.
- Larson, J. S. (1999). The conceptualization of health. *Medical Care Research and Review*, 56(2), 123-136.
- Lawson, H. J., & Essuman, A. (2016). Country profile on family medicine and primary health care in Ghana. *African Journal of Primary Health Care and Family Medicine*, 8(1), 1-3.
- Ledesma, R. D., & Valero-Mora, P. (2007). Determining the number of factors to retain in EFA: An easy-to-use computer program for carrying out parallel analysis. *Practical assessment, research & evaluation*, 12(2), 1-11.
- Leslie, C. (1980). Medical pluralism in world perspective [1]. *Social Science & Medicine. Part B: Medical Anthropology*, 14(4), 191-195.
- Lipsey, M. W. (1990). Design sensitivity: Statistical power for experimental research. Newbury Park, California: Sage Publications
- MacLean, L., Hassmiller, S., Shaffer, F., Rohrbaugh, K., Collier, T., & Fairman, J. (2014). Scale, causes, and implications of the primary care nursing shortage. *Annual Review of Public Health*, 35, 443-457.
- Maneze, D., DiGiacomo, M., Salamonson, Y., Descallar, J., & Davidson, P. M. (2015). Facilitators and barriers to health-seeking behaviors among Filipino migrants: inductive analysis to inform health promotion. *BioMed research international*, 2015.
- Mann, C. J. (2003). Observational research methods. Research design II: cohort, cross sectional, and case-control studies. *Emergency medicine journal*, 20(1), 54-60.
- Marak, A., Borah, M., Bhattacharyya, H., & Talukdar, K. (2016). A cross-sectional study on self-medication practices among the rural population of Meghalaya. *International Journal*, 5(06), 1134.
- Marmot, M. (2005). Social determinants of health inequalities. *The Lancet*, 365(9464), 1099-1104.
- Marquez, G. E., Torres, V. E., Sanchez, V. M., Gramajo, A. L., Zelaya, N., Peña, F. Y., ... &

- Luna, J. D. (2012). Self-medication in ophthalmology: a questionnaire-based study in an Argentinean population. *Ophthalmic epidemiology*, *19*(4), 236-241.
- Marsh, V., Mutemi, W. M., Muturi, J., Haaland, A., Watkins, W. M., Otieno, G., & Marsh, K. (1999). Changing home treatment of childhood fevers by training shop keepers in rural Kenya *Tropical medicine & international health*, *4*(5), 383-389.
- Matsumura, M., & Gubhaju, B. (2001). Women's Status, Household Structure and the Utilization of Maternal Health Services in Nepal: Even primary-level education can significantly increase the chances of a woman using maternal health care from a modern health facility. *Asia-Pacific Population Journal*, *16*(1), 23-44.
- McCrum-Gardner, E. (2010). Sample size and power calculations made simple. *International Journal of Therapy and Rehabilitation*, *17*(1), 10-14.
- McDaniel, J. T., Nuhu, K., Ruiz, J., & Alorbi, G. (2017). Social determinants of cancer incidence and mortality around the world: an ecological study. *Global Health Promotion*, 1757975916686913.
- McDermott, R. J., & Sarvella, P. D. (1999). Health education evaluation and measurement: A practitioner's perspective. (2nd ed.). Madison, WI: WCB/McGrawHill.
- McDonald, J. D. (2008). Measuring personality constructs: The advantages and disadvantages of self-reports, informant reports and behavioural assessments. *Enquire*, *1*(1), 1-19.
- McKenzie, J. F., Neiger, B. L., & Smeltzer, J. L. (2005). Planning, implementing, & evaluating health promotion programs: A primer. (4th ed.). San Francisco: Benjamin Cummings.
- Mensah, J., Oppong, J. R., & Schmidt, C. M. (2010). Ghana's National Health Insurance Scheme in the context of the health MDGs: An empirical evaluation using propensity score matching. *Health economics*, *19*(S1), 95-106.
- Miller, M., Boyer, M. J., Butow, P. N., Gattellari, M., Dunn, S. M., & Childs, A. (1998). The use of unproven methods of treatment by cancer patients. *Supportive Care in Cancer*, *6*(4), 337-347.
- Ministry of Health (2015). Role and Functions. Retrieved from <http://www.moh.gov.gh/category/role-functions-of-moh/>. Accessed 6/4/2017
- MOH (2015). Traditional Medicine Practitioners' Council. Retrieved from <http://www.moh.gov.gh/alternative-medicine-council/>. Accessed 6/4/2017
- MOH (2017). Role and Functions of MOH. Retrieved from

- <http://www.moh.gov.gh/category/role-functions-of-moh/> on 8/6/2017
- MOH, (2015). Pharmacy Council of Ghana. Retrieved from <http://www.moh.gov.gh/pharmacy-council-ghana/>. Accessed 6/4/2017
- Montastruc, J. L., Bagheri, H., Geraud, T., & Lapeyre-Mestre, M. (1996). Pharmacovigilance of self-medication. *Therapie*, 52(2), 105-110.
- National Commission for Health Education Credentialing. (2016). Responsibilities and competencies for health education specialists. Retrieved from <http://www.nchec.org/responsibilities-and-competencies>
- Neuman, B. M. (1990). Health as a continuum based on the Neuman systems model. *Nursing Science Quarterly*, 3(3), 129-135.
- Neutens, J. J., & Rubinson, L. (2010). *Research techniques for the health sciences*. Benjamin-Cummings Publishing Company.
- Newacheck, P. W., Hughes, D. C., & Stoddard, J. J. (1996). Children's access to primary care: differences by race, income, and insurance status. *Pediatrics*, 97(1), 26-32.
- NHIA (2011). 2009 Annual Report. Accra, Ghana. Retrieved from <http://www.nhis.gov.gh/nhia.aspx> on 8/6/2017
- Nunnally, J. C., & Bernstein, I. H. (1994). Validity. *Psychometric theory*, 99-132.
- Nur, N. (2010). Knowledge and behaviors related to herbal remedies: a cross-sectional epidemiological study in adults in Middle Anatolia, Turkey. *Health & social care in the community*, 18(4), 389-395.
- Oberoi, S., Chaudhary, N., Patnaik, S., & Singh, A. (2016). Understanding health seeking behavior. *Journal of family medicine and primary care*, 5(2), 463.
- O'Donnell, M. P. (1986). Definition of health promotion. *American journal of health promotion*, 1(1), 4-5.
- O'Donnell, O. (2007). Access to health care in developing countries: breaking down demand side barriers. *Cadernos de Saúde Pública*, 23(12), 2820-2834.
- Olenja, J. (2003). Editorial Health seeking behavior in context. *East African medical journal*, 80(2), 61-62.

- Over, M., Ellis, R. P., Huber, J. H., & Solon, O. (1992). The consequences of adult ill health. *The health of adults in the developing world*, 161-207.
- Oztora S, Nepesova G, Caylan A & Dagdeviren H N (2017). The practice of self-medication in an urban population. *Journal of Biomedical Research* (2017).
- Pagan, J. A., Ross, S., Yau, J., & Polsky, D. (2006). Self-medication and health insurance coverage in Mexico. *Health policy*, 75(2), 170-177.
- Pal, S. K. (2002). Complementary and alternative medicine: an overview. *Current Science*, 518-524.
- Palank, C. L. (1991). Determinants of health-promotive behavior. A review of current research. *The Nursing Clinics of North America*, 26(4), 815-832.
- Papakosta, M., Zavras, D., & Niakas, D. (2014). Investigating factors of self-care orientation and self-medication use in a Greek rural area. *Rural Remote Health*, 14(2), 2349.
- Pattison, E. M., Lapins, N. A., & Doerr, H. A. (1973). Faith healing: A study of personality and function. *The Journal of nervous and mental disease*, 157(6), 397-408
- Patwardhan, B., & Partwardhan, A. (2005). Traditional Medicine: Modern Approach for affordable global health.
- Phillips, S. P. (2005). Defining and measuring gender: A social determinant of health whose time has come. *International Journal for Equity in Health*, 4(1), 11.
- Pickett, K. E., & Pearl, M. (2001). Multilevel analyses of neighbourhood socioeconomic context and health outcomes: a critical review. *Journal of Epidemiology & Community Health*, 55(2), 111-122.
- Pillai, R. K., Williams, S. V., Glick, H. A., Polsky, D., Berlin, J. A., & Lowe, R. A. (2003). Factors affecting decisions to seek treatment for sick children in Kerala, India. *Social science & medicine*, 57(5), 783-790.
- Plante, T. G., & Sherman, A. C. (Eds.). (2001). *Faith and health: Psychological perspectives*. Guilford Press.
- Qi, Z., & Kelley, E. (2014). The WHO traditional medicine strategy 2014–2023: a perspective. *Science*, 346(6216), S5-S6.
- Rao, A., Sibbritt, D., Phillips, J. L., & Hickman, L. D. (2015). Prayer or spiritual healing as

- adjuncts to conventional care: a cross sectional analysis of prevalence and characteristics of use among women. *BMJ open*, 5(6), e007345.
- Ritchie, C. S., Gohmann, S. F., & McKinney, W. P. (2005). Does use of CAM for specific health problems increase with reduced access to care?. *Journal of Medical Systems*, 29(2), 143-153.
- Robinson, M. M., & Zhang, X. (2011). The world medicines situation 2011, traditional medicines: Global situation, issues and challenges. *World Health Organization, Geneva*.
- Rosenstock, I. M. (1974). Historical origins of the health belief model. *Health education monographs*, 2(4), 328-335.
- Ruiz, M. E. (2010). Risks of self-medication practices. *Current drug safety*, 5(4), 315-323.
- Ryan, G. W. (1998). What do sequential behavioral patterns suggest about the medical decision making process? modeling home case management of acute illnesses in a rural Cameroonian village. *Social science & medicine*, 46(2), 209-225.
- Sackey, M. B. (2002). Faith healing and women's reproductive health. *Institute of African Studies Research Review*, 18(1), 5-11.
- Saeed, K., Gater, R., Hussain, A., & Mubbashar, M. (2000). The prevalence, classification and treatment of mental disorders among attenders of native faith healers in rural Pakistan. *Social psychiatry and psychiatric epidemiology*, 35(10), 480-485.
- Salisu, A., & Prinz, V. (2009). Health care in Ghana: March 2009. *Vienna: Austrian Centre for Country of Origin and Asylum Research and Documentation*.
- Sarahroodi S (2012). Self-medication: Risks and Benefits. *International Journal of Pharmacology*, 8: 58-59.
- Sarahroodi, S., Maleki-Jamshid, A., Sawalha, A. F., Mikaili, P., & Safaeian, L. (2012). Pattern of self-medication with analgesics among Iranian University students in central Iran. *Journal of family & community medicine*, 19(2), 125.
- Sartorius, N. (2006). The meanings of health and its promotion. *Croatian medical journal*, 47(4), 662.
- Sauver, J. L. S., Warner, D. O., Yawn, B. P., Jacobson, D. J., McGree, M. E., Pankratz, J. J., ... & Rocca, W. A. (2013, January). Why patients visit their doctors: assessing the most prevalent conditions in a defined American population. In *Mayo Clinic Proceedings* (Vol. 88, No. 1, pp. 56-67). Elsevier.

- Selivanova, A., & Cramm, J. M. (2014). The relationship between healthy behaviors and health outcomes among older adults in Russia. *BMC public health, 14*(1), 1183.
- Selvaraj, K., Kumar, S. G., & Ramalingam, A. (2014). Prevalence of self-medication practices and its associated factors in Urban Puducherry, India. *Perspectives in clinical research, 5*(1), 32.
- Selvaraj, K., Kumar, S. G., & Ramalingam, A. (2014). Prevalence of self-medication practices and its associated factors in Urban Puducherry, India. *Perspectives in clinical research, 5*(1), 32.
- Senah, K. A. (2004). In the mighty name of Jesus: Health-seeking behaviour in Ghana. *Legon Journal of Sociology 1* (1), 59-70.
- Shaghghi, A., Asadi, M., & Allahverdipour, H. (2014). Predictors of self-medication behavior: a systematic review. *Iranian journal of public health, 43*(2), 136.
- Shaikh, B. T., & Hatcher, J. (2005). Health seeking behaviour and health service utilization in Pakistan: challenging the policy makers. *Journal of public health, 27*(1), 49-54.
- Shapiro, A., & Taylor, M. (2002). Effects of a community-based early intervention program on the subjective well-being, institutionalization, and mortality of low-income elders. *The Gerontologist, 42*(3), 334-341.
- Sherra, K. S., Shahda, M., & Khalil, D. M. (2017). The role of culture and faith healers in the treatment of mood disorders in rural versus urban areas in United Arab Emirates. *Egyptian Journal of Psychiatry, 38*(2), 79.
- Shi, L. (1992). The relationship between primary care and life chances. *Journal of health care for the poor and underserved, 3*(2), 321-335.
- Shi, L. (1994). Primary care, specialty care, and life chances. *International Journal of Health Services, 24*(3), 431-458.
- Shi, L. (2012). The impact of primary care: a focused review. *Scientifica, 2012*.
- Snow, R. C., Asabir, K., Mutumba, M., Koomson, E., Gyan, K., Dzodzomenyo, M., ... & Kwansah, J. (2011). Key factors leading to reduced recruitment and retention of health professionals in remote areas of Ghana: a qualitative study and proposed policy solutions. *Human resources for health, 9*(1), 13.
- Starfield, B., Shi, L., & Macinko, J. (2005). Contribution of primary care to health systems and

- health. *The milbank quarterly*, 83(3), 457-502.
- Starkweather, J., & Moske, A. K. (2011). Multinomial logistic regression. *Consulted page at September 10th: http://www.unt.edu/rss/class/Jon/Benchmarks/MLR_JDS_Aug2011.pdf*, 29, 2825-2830.
- Stearns, S. C., Bernard, S. L., Fasick, S. B., Schwartz, R., Konrad, T. R., Ory, M. G., & DeFriese, G. H. (2000). The economic implications of self-care: the effect of lifestyle, functional adaptations, and medical self-care among a national sample of Medicare beneficiaries. *American Journal of Public Health*, 90(10), 1608.
- Stjernberg, L., Berglund, J., & Halling, A. (2006). Age and gender effect on the use of herbal medicine products and food supplements among the elderly. *Scandinavian journal of primary health care*, 24(1), 50-55.
- Suswardany, D. L., Sibbritt, D. W., Supardi, S., Chang, S., & Adams, J. (2015). A critical review of traditional medicine and traditional healer use for malaria and among people in malaria-endemic areas: contemporary research in low to middle-income Asia-Pacific countries. *Malaria journal*, 14(1), 98.
- Tabi, M. M., Powell, M., & Hodnicki, D. (2006). Use of traditional healers and modern medicine in Ghana. *International nursing review*, 53(1), 52-58.
- Tan, C. E., & Glantz, S. A. (2012). Association between smoke-free legislation and hospitalizations for cardiac, cerebrovascular, and respiratory diseases. *Circulation*, 126(18), 2177-2183.
- Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International journal of medical education*, 2, 53.
- Thomas, S. B., Fine, M. J., & Ibrahim, S. A. (2004). Health disparities: the importance of culture and health communication.
- Thompson, A. E., Anisimowicz, Y., Miedema, B., Hogg, W., Wodchis, W. P., & Aubrey-Bassler, K. (2016). The influence of gender and other patient characteristics on health care-seeking behaviour: a QUALICOPC study. *BMC family practice*, 17(1), 38.
- Tones, K., & Tilford, S. (2001). *Health promotion: effectiveness, efficiency and equity*. Nelson Thornes.
- Tsey, K. (1997). Traditional medicine in contemporary Ghana: A public policy *Social Science & Medicine*, 45(7), 1065-1074.

- Turner, G., & Roy, A. (2013). Why states should not expand Medicaid. *Medicaid, ObamaCare, State Issues*.
- Uchendu, O. C., Ilesanmi, O. S., & Olumide, A. E. (2013). Factors influencing the choice of health care providing facility among workers in a local government secretariat in south western Nigeria. *Annals of Ibadan postgraduate medicine*, 11(2), 87-95.
- US Department of Health and Human Services. (2006). The health consequences of involuntary exposure to tobacco smoke: a report of the Surgeon General. *Atlanta, GA: US Department of Health and Human Services, Centers for Disease Control and Prevention, Coordinating Center for Health Promotion, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 709*. Hahn EJ. Smoke-free Legislation: A Review of Health and Economic Outcomes Research. *American Journal of Preventive Medicine* 2010;39(6S1): S66–S76
- Van Den Boom, G. J. M., Nsowah-Nuamah, N. N. N., & Overbosch, G. B. (2007). Healthcare provision and self-medication in Ghana, 2004. *Accessed 10th October*.
- Van der Hoeven, M., Kruger, A., & Greeff, M. (2012). Differences in health care seeking behavior between rural and urban communities in South Africa. *International journal for equity in health*, 11(1), 31.
- Van Doorslaer, E., Masseria, C., Koolman, X., & OECD Health Equity Research Group. (2006). Inequalities in access to medical care by income in developed countries. *Canadian medical association journal*, 174(2), 177-183.
- Van Oss Marin, B., Marin, G., Padilla, A. M., & De La Rocha, C. (1983). Utilization of traditional and non-traditional sources of health care among Hispanics. *Hispanic Journal of Behavioral Sciences*, 5(1), 65-80.
- Vidyavati SD, Sneha A, Kamarudin J & Katti SM (2016). Self-Medication - Reasons, Risks and Benefits. *International J. of Healthcare and Biomedical Research*, Volume: 04, Issue: 04, July 2016, 21-24
- Vizhi SK & Senapathi R (2010). Evaluation of the perception, attitude and practice of self medication among business students in 3 select Cities, South India. *International Journal of Enterprise and Innovation Management Studies (IJEIMS)* July-December. 2010;1(3):40–4.

- Vogel, R. L., & Ackermann, R. J. (1998). Is primary care physician supply correlated with health outcomes? *International journal of health services*, 28(1), 183-196.
- Wachtel-Galor, S., & Benzie, I. F. (2011). 1 Herbal Medicine. *Lester Packer, Ph. D.*, 1.
- Wade, C., Chao, M., Kronenberg, F., Cushman, L., & Kalmuss, D. (2008). Medical pluralism among American women: results of a national survey. *Journal of Women's Health*, 17(5), 829-840.
- Wang, Y., Hunt, K., Nazareth, I., Freemantle, N., & Petersen, I. (2013). Do men consult less than women? An analysis of routinely collected UK general practice data. *BMJ open*, 3(8), e003320.
- WHO (2000). Essential Medicines and Health Products Information Portal A World Health Organization resource. *WHO Drug Information*, 14(1).
- WHO (2011). Secondary and Tertiary Care. Retrieved online from <http://apps.who.int/medicinedocs/documents/s19420en/s19420en.pdf> on 10/17/2017
- WHO (2015), Global Health Observatory data repository. Retrieved from <http://apps.who.int/gho/data/node.main.688>
- WHO (2017). Global Health Observatory Data – Health Workforce. Retrieved from http://www.who.int/gho/health_workforce/en/ on 8/6/2017
- WHO (2017). Health and Development. Retrieved online from <http://www.who.int/hdp/en/> on July 12, 2017.
- WHO (2017). Health Impact Assessment (nd). Retrieved from <http://www.who.int/hia/evidence/doh/en/> on July 12, 2017.
- WHO Commission on Social Determinants of Health, & World Health Organization. (2008). *Closing the gap in a generation: health equity through action on the social determinants of health: Commission on Social Determinants of Health final report*. World Health Organization.
- WHO, (2008). Primary Health Care, Retrieved from http://www.who.int/topics/primary_health_care/en/
- WHO. (2017). Social Determinants of Health. Retrieved from http://www.who.int/social_determinants/tools/multimedia/alma_ata/en/ on 8/2/2017.

- WHO. Constitution of the World Health Organization. 2006. Retrieved from www.who.int/governance/eb/who_constitution_en.pdf.
- Williamson, J., Ramirez, R., & Wingfield, T. (2015). Health, healthcare access, and use of traditional versus modern medicine in remote Peruvian Amazon communities: a descriptive study of knowledge, attitudes, and practices. *The American journal of tropical medicine and hygiene*, 92(4), 857-864.
- Windsor, R., Baranowski, T., Clark, N., & Cutter, G. (1994). Evaluation of Health Promotion, Health Education, and Disease Prevention Programs (2nd ed.). Houston: Mayfield Publishing Company.
- World Bank (2017). Country Profile – Ghana. Retrieved from <http://data.worldbank.org/country/ghana>. Accessed 6/6/2017.
- World Bank, GNI per capita, Atlas Method; Retrieved from <http://data.worldbank.org/indicator/NY.GNP.PCAP.CD?locations=GH>. Accessed 4/6/2017
- World Health Organization. (2002). WHO traditional medicine strategy 2002-2005.
- World Health Organization. (2007). WHO international standard terminologies on traditional medicine in the western pacific region. Retrieved from http://www.wpro.who.int/publications/PUB_9789290612483/en/. Accessed 6/6/2017
- Yikilkan, H., Gorpelioglu, S., Aypak, C., Uysal, Z., & Ariman, O. O. (2013). Differences between rural and urban primary care units in Turkey: implications on residents' training. *Journal of family medicine and primary care*, 2(1), 15.
- Yousef, A. M. M., Al-Bakri, A. G., Bustanji, Y., & Wazaify, M. (2008). Self-medication patterns in Amman, Jordan. *Pharmacy World & Science*, 30(1), 24-30.
- Yuefeng, L., Keqin, R., & Xiaowei, R. (2012). Use of and factors associated with self-treatment in China. *BMC Public Health*, 12(1), 995.
- Zhang, A. L., Xue, C. C., & Fong, H. H. (2011). Integration of herbal medicine into evidence-based clinical practice.
- Zhao, Y., & Ma, S. (2016). Observations on the Prevalence, Characteristics, and effects of Self-Treatment. *Frontiers in public health*, 4.

APPENDICES

APPENDIX A

SIU Southern Illinois University

SUBJECTS COMMITTEE

HUMAN siuhsc@siu.edu
OFFICE OF SPONSORED PROJECTS
618/453-4533
ADMINISTRATION 618/453-8038 FAX
WOODY HALL - MAIL CODE 4709
900 SOUTH NORMAL AVENUE
CARBONDALE, ILLINOIS 62901

ospa.siu.edu/compliance/human*subjects

HSC Approval letter (exempt)

To: Kaamel Nuhu

From: Kimberly K. Asner-Seif
Chair, Human Subjects Committee



Date: November 20, 2017

Subject: Determinants of Health-Seeking Behavior in Ghana
Protocol Number: 17288

The revisions to the above referenced study have been approved by the SIUC Human Subjects Committee. The study is determined to be exempt according to 45 CFR 46.101(b)2. This approval does not have an expiration date; however, any future modifications to your protocol must be submitted to the Committee for review and approval prior to their implementation.

Your Form A approval is enclosed.

This institution has an Assurance on file with the USDHHS Office of Human Research Protection. The Assurance number is FWA00005334.

KAS:kr

Cc: Wendi Middleton

HUMAN SUBJECTS COMMITTEE
OFFICE OF SPONSORED PROJECTS
ADMINISTRATION
WOODY HALL - MAIL CODE 4709
900 SOUTH NORMAL AVENUE CARBONDALE, ILLINOIS
62901

siuhsc@siu.edu
618/453-4533
618/453-8038 FAX

ospa.siu.edu/compliance/human-subjects

HSC modification approval letter (exempt)

To: Kaamel Nuhu

From: Kimberly K. Asner-Self
Chair, Human Subjects Committee



Date: February 1, 2018

Subject: *Determinants of Health-Seeking Behavior in Ghana*
Protocol Number: 17288

The SIUC Human Subjects Committee has approved the modification request to the above referenced project submitted on 1/31/18 and you may proceed.

NOTE: Your study is determined to be exempt according to 45 CFR 46.101(b)2. Your project does not have an expiration date; however, any future modifications to your protocol must be submitted to the Committee for review and approval prior to their implementation.

Thank you for helping us keep your file up-to-date.

KAS:kr

Cc: Wendi Middleton

APPENDIX C

Survey Consent Form

My name is Kaamel Nuhu. I am a doctoral student at the department of Public Health and Recreation Professions at Southern Illinois University Carbondale. I humbly request you as a Ghanaian healthcare consumer to participate in my doctoral research study. The purpose of this quantitative study is to determine the factors and predictors of health-seeking behaviors among Ghanaians as a basis for developing an intervention program subsequently.

This is an anonymous survey, and the privacy of every participant will be protected such that the results cannot be traced back to any participant at any point in time. All your responses will be kept confidential within reasonable limits. Only a small group of people directly involved in the study will have access to the data, which will be locked in a cabinet in a locked personal office once the study is completed. Participation is voluntary, and respondents reserve the right to withdraw their participation at any point during the survey. To be eligible to participate, you must be at least 18 years of age at the time of completing the survey.

If you choose to take part in the study, you will be asked to complete a short survey about your beliefs, attitudes and behaviors toward various healthcare options such as self-medication, traditional/herbal medicine, faith healing and modern medical care. The survey will take approximately 25-30 minutes of your time. There are no anticipated risks to participating in this study, and your participation will contribute to knowledge about the factors that affect health-seeking behaviors among Ghanaians, as a basis for possible future intervention programs to improve health-seeking behaviors and health outcomes among Ghanaians.

If you have any questions about the study, please contact me (via email: nmkaamel@siu.edu or cell phone number 618-303-7103) or my supervisor (Dr. Wendi Middleton via email at wkmidd@siu.edu). Return of a completed survey indicates your voluntary consent to participate in this research study. Thank you for taking the time to assist me in this research.

This project has been reviewed and approved by the SIUC Human Subjects Committee. Questions concerning your rights as a participant in this research may be addressed to the Committee Chairperson, Office of Sponsored Projects Administration, SIUC, Carbondale, IL 62901-4709. Phone (618) 453-4533. E-mail: siuhsc@siu.edu

APPENDIX D

Original Survey Instrument Used for Pilot Study Determinants of Health-Seeking Behavior in Ghana

I. Demographic Characteristics

1. Initials: _____
2. Age range
 - 18 – 24 years 25 – 34 years 35 – 44 years 45 – 54 years
 - 55 - 64 years 65 years and older
3. Gender
 - Male Female
4. Marital Status
 - Single Married Separated Divorced Widowed
5. Ethnic Group
 - Akan Ga/Adangme Ewe Northerner
6. Religious Affiliation
 - Christianity Islam African Traditional Religion Other
7. Place of Residence
 - Rural Urban
8. Region of Residence
 - Greater Accra Ashanti Eastern Western Central
 - Brong Ahafo Volta Northern Upper West Upper East
9. Educational Level Completed

- No Formal Education Primary Education Secondary Education
 Tertiary Education Postgraduate Education

10. Self-Reported Income Category

- Low (Less than \$2 or GHS8 per day)
 Average (Between \$2 or GHS8 and \$20 or GHS80 per day)
 High (Greater than \$20 or GHS80 per day)

11. Health Insurance Status

- No Health Insurance Private Health Insurance
 Government Health Insurance (NHIS)

For the following sections, please tick the box that best applies to you for each question

II. Health-Seeking Behaviors – Government Health Facility

Question/Response	Never	Rarely	Sometimes	Most times	Every time
1. I go to a government health facility for treatment when ill					
2. A government health facility is my first point of call following ill-health					
3. During my past illnesses, I sought treatment from a government health facility					
4. During my future illnesses, I will seek treatment at a government health facility					
5. If I had equal access to all options of care, I would routinely seek care at a government health facility					
6. I seek care from government health facilities for illnesses I consider mild					
7. I seek care from government health facilities for illnesses I consider severe					
8. I seek care from government health facilities for illnesses I consider life-threatening					

III. Health-Seeking Behaviors – Private Health Facility

Question/Response	Never	Rarely	Sometimes	Most times	Every time
1. I go to a private health facility for treatment when ill					
2. A private health facility is my first point of call following ill-health					
3. During my past illnesses, I sought treatment from a private health facility.					
4. During my future illnesses, I will seek treatment at a private health facility					
5. If I had equal access to all options of care, I would routinely seek care at a private health facility					
6. I seek care from private health facilities for illnesses I consider mild					
7. I seek care from private health facilities for illnesses I consider severe					
8. I seek care from private health facilities for illnesses I consider life-threatening					

IV. Health-Seeking Behaviors – Self-Medication with Herbal Drugs

Question/Response	Never	Rarely	Sometimes	Most times	Every time
1. I self-medicate with herbal drugs when ill					
2. Self-medication with herbal drugs is my first point of call following ill-health					
3. During my past illnesses, I self-medicated with herbal drugs					
4. During my future illnesses, I will self-medicate with herbal drugs					
5. If I had equal access to all options of care, I would routinely self-medicate with herbal drugs					
6. I self-medicate with herbal drugs for illnesses I consider mild					
7. I self-medicate with herbal drugs for illnesses I consider severe					
8. I self-medicate with herbal drugs for illnesses I consider life-threatening					

V. Health-Seeking Behaviors – Self-Medication with Pharmaceutical Drugs

Question/Response	Never	Rarely	Sometimes	Most times	Every time
1. I self-medicate with pharmaceutical drugs when ill					
2. Self-medication with pharmaceutical drugs is my first point of call following ill-health					
3. During my past illnesses, I self-medicated with pharmaceutical drugs					
4. During my future illnesses, I will self-medicate with pharmaceutical drugs					
5. If I had equal access to all options of care, I would routinely self-medicate with pharmaceutical drugs					
6. I self-medicate with pharmaceutical drugs for illnesses I consider mild					
7. I self-medicate with pharmaceutical drugs for illnesses I consider severe					
8. I self-medicate with pharmaceutical drugs for illnesses I consider life-threatening					

VI. Health-Seeking Behaviors – Traditional/Herbal Practitioners

Question/Response	Never	Rarely	Sometimes	Most times	Every time
1. I go to the traditional/herbal practitioner for treatment when ill					
2. Going to a traditional/herbal practitioner is my first point of call following ill-health					
3. During my past illnesses, I sought treatment from a traditional/herbal practitioner					
4. During my future illnesses, I will seek treatment from traditional/herbal practitioners					
5. If I had equal access to all options of care, I would routinely seek treatment from traditional/herbal practitioners					
6. I seek treatment from traditional/herbal practitioners for illnesses I consider mild					
7. I seek treatment from traditional/herbal practitioners for illnesses I consider severe					
8. I seek treatment from traditional/herbal practitioners for illnesses I consider life-threatening					

VII. Health-Seeking Behaviors – Faith Healers

Question/Response	Never	Rarely	Sometimes	Most times	Every time
1. I go to the faith healer for treatment when ill					
2. Going to a faith healer is my first point of call following ill-health					
3. During my past illnesses, I sought treatment from a faith healer					
4. During my future illnesses, I will seek treatment from faith healers					
5. If I had equal access to all options of care, I would routinely seek treatment from faith healers					
6. I seek treatment from faith healers for illnesses I consider mild					
7. I seek treatment from faith healers for illnesses I consider severe					
8. I seek treatment from faith healers for illnesses I consider life-threatening					

VIII. Perceived Severity – General Illness. For this section, please use the following key to guide you; Consider; 1. Mild Illness as any illness that does not significantly interrupt your daily activities 2. Severe illness as any illness that interrupts your daily activities such as inability to go to work/school or leads to hospitalization 3. Life-threatening illness as any illness that presents immediate danger of death.

Question/Response	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
1. I believe my last illness was mild					
2. I believe my last illness was not severe					
3. I believe my last illness was life threatening					
4. I believe my last illness was severe					
5. If I become ill, I believe that it could be life threatening					
6. I believe that my last illness could have led to permanent injury					
7. I believe that my last illness could have resulted in a fatality					
8. I believe my last illness could have resulted in disability					
9. If I become ill, I believe that it could result in a fatality					

IX. Perceived Susceptibility

Question/Response	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. It is likely that I will become ill					
2. I could become ill in the future					
3. I am at risk of getting ill					
4. There is a good chance that I could become ill in the future					
5. I believe that I could become ill					
6. I believe that I could become ill in the future					
7. I am not at risk of getting ill					
8. It is unlikely that I will become ill in the future					

X. Perceived Benefits – Government Health Facilities

Question/Response	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. Health care at government health facilities is effective at treating illnesses					
2. My illnesses are treated effectively at government health facilities					
3. Professionals at government health facilities are competent					
4. It is safe to seek care at a government health facility					
5. Professionals at government health facilities treat patients with respect					
6. Professionals at government health facilities treat patients with dignity					
7. Professionals at government health facilities can help people with illnesses					
8. Professionals at government health facilities effectively treat illnesses					
9. Cost of care at government health facilities is covered by my health insurance					

XI. Perceived Benefits – Private Health Facilities

Question/Response	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. Health care at private health facilities is effective at treating illnesses					
2. My illnesses are treated effectively at private health facilities					
3. Professionals at private health facilities are competent					
4. It is safe to seek care at a private health facility					
5. Professionals at private health facilities treat patients with respect					
6. Professionals at private health facilities treat patients with dignity					
7. Professionals at private health facilities can help people with illnesses					
8. Professionals at private health facilities effectively treat illnesses					
9. Cost of care at private health facilities is covered by my health insurance					

XII. Perceived Benefits – Self-Medication with Herbal Drugs

Question/Response	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. Self-medication with herbal drugs is an effective way to treat illnesses					
2. It is convenient to self-medicate with herbal drugs					
3. It costs less to self-medicate with herbal drugs					
4. Herbal drug vendors treat customers with respect and dignity					
5. It is easy to buy herbal drugs where I live					
6. Self-medication with herbal drugs is safe					
7. Self-medication with herbal drugs saves time					
8. I can buy most herbal drugs for self-medication without a prescription					

XIII. Perceived Benefits – Self-Medication with Pharmaceutical Drugs

Question/Response	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. Self-medication with pharmaceutical drugs is an effective way to treat illnesses					
2. It is convenient to self-medicate with pharmaceutical drugs					
3. It is costs less to self-medicate with pharmaceutical drugs					
4. Pharmaceutical drug vendors treat customers with respect and dignity					
5. It is easy to buy pharmaceutical drugs where I live					
6. Self-medication with pharmaceutical drugs is safe					
7. Self-medication with pharmaceutical drugs saves time					
8. I can buy most pharmaceutical drugs for self-medication without a prescription					

XIV. Perceived Benefits – Traditional/Herbal Practitioners

Question/Response	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. Traditional healers/herbal practitioners treat illnesses effectively					
2. Traditional healers/herbal practitioners treat patients with respect and dignity					
3. Traditional healers/herbal practitioners can help people with illnesses					
4. It is convenient to seek care from a traditional healer/herbal practitioner					
5. It costs less to seek treatment from a traditional/herbal practitioner					
6. It is safe to seek care from traditional/herbal practitioners					
7. Traditional/herbal practitioners are competent at treating illnesses					
8. Healthcare by traditional/herbal practitioners is effective					

XV. Perceived Benefits – Faith Healers

Question/Response	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. Faith healers treat illnesses effectively					
2. Faith healers treat patients with respect and dignity					
3. Faith healers can help people with illnesses					
4. It is convenient to seek care from a faith healer					
5. It costs less to seek treatment from a faith healer					
6. It is safe to seek care from faith healers					
7. Faith healers are competent at treating illnesses					
8. Healthcare by faith healers is effective					

XVI. Perceived Barriers to Government Health Facilities

Question/Response	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. It is expensive to seek care at government health facilities					
2. Distance to a government health facility was an important consideration for me in deciding my choice of care during my last illness					
3. Waiting times at government health facilities are too long					
4. Health personnel at government health facilities are rude towards patients					
5. My religious beliefs constrain use of government health facilities					
6. My cultural beliefs constrain use of government health facilities					
7. Cost of care at government health facilities is not covered by my health insurance					
8. Quality of healthcare at government health facilities is poor					

XVII. Perceived Barriers to Private Health Facilities

Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. It is expensive to seek care at private health facilities					
2. Distance to a private health facility was an important consideration for me in deciding my choice of care during my last illness					
3. Waiting times at private health facilities are too long					
4. Health personnel at private health facilities are rude towards patients					
5. My religious beliefs constrain use of private health facilities					
6. My cultural beliefs constrain use of private health facilities					
7. Cost of care at private health facilities is not covered by my health insurance					
8. Quality of healthcare at private health facilities is poor					

XVIII. Cues to Action – Government Health Facility

Question/Response	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. My friends encourage me to seek treatment at a government health facility					
2. My family members encourage me to seek treatment at a government health facility					
3. My spouse encourages me to seek care at a government health facility					
4. My religious leader encourages me to seek care at a government health facility					
5. My children encourage me to seek care at a government health facility					
6. I visit a government health facility when I have a serious health problem					
7. I visit a government health facility when I have a life-threatening illness					
8. Having health insurance encourages me to seek care at a government health facility					

XIX. Cues to Action – Private Health Facility

Question/Response	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. My friends encourage me to seek treatment at a private health facility					
2. My family members encourage me to seek treatment at a private health facility					
3. My spouse encourages me to seek care at a private health facility					
4. My religious leader encourages me to seek care at a private health facility					
5. My children encourage me to seek care at a private health facility					
6. I visit a private health facility when I have a serious health problem					
7. I visit a private health facility when I have a life-threatening illness					
8. Having health insurance encourages me to seek care at a private health facility					

XX. Cues to Action – Self-Medication with Herbal Drugs

Question/Response	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. My friends encourage me to self-medicate with herbal drugs					
2. My family members encourage me to self-medicate with herbal drugs					
3. My spouse encourages me to self-medicate with herbal drugs					
4. My religious leader encourages me to self-medicate with herbal drugs					
5. My children encourage me to self-medicate with herbal drugs					
6. I self-medicate with herbal drugs when I have a serious health problem					
7. I self-medicate with herbal drugs when I have a life-threatening illness					
8. I self-medicate with herbal drugs when I have a mild illness					

XXI. Cues to Action – Self-Medication with Pharmaceutical Drugs

Question/Response	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. My friends encourage me to self-medicate with pharmaceutical drugs					
2. My family members encourage me to self-medicate with pharmaceutical drugs					
3. My spouse encourages me to self-medicate with pharmaceutical drugs					
4. My religious leader encourages me to self-medicate with pharmaceutical drugs					
5. My children encourage me to self-medicate with pharmaceutical drugs					
6. I self-medicate with pharmaceutical drugs when I have a serious health problem					
7. I self-medicate with pharmaceutical drugs when I have a life-threatening illness					
8. I self-medicate with pharmaceutical drugs when I have a mild illness					

XXII. Cues to Action – Traditional/Herbal Practitioners

Question/Response	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. My friends encourage me to seek treatment from a traditional/herbal practitioner					
2. My family members encourage me to seek treatment from a traditional/herbal practitioner					
3. My spouse encourages me to seek care from a traditional/herbal practitioner					
4. My religious leader encourages me to seek care from a traditional/herbal practitioner					
5. My children encourage me to seek care from a traditional/herbal practitioner					
6. I visit a traditional/herbal practitioner when I have a serious health problem					
7. I visit a traditional/herbal practitioner when I have a life-threatening illness					
8. I visit a traditional/herbal practitioner when I have a mild illness					

XXIII. Cues to Action – Faith Healers

Question/Response	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. My friends encourage me to seek treatment from a faith healer					
2. My family members encourage me to seek treatment from a faith healer					
3. My spouse encourages me to seek care from a faith healer					
4. My religious leader encourages me to seek care from a faith healer					
5. My children encourage me to seek care from a faith healer					
6. I visit a faith healer when I have a serious health problem					
7. I visit a faith healer when I have a life-threatening illness					
8. I visit a faith healer when I have a mild illness					

THANK YOU

APPENDIX E

Revised Survey Instrument Used for Main Study Determinants of Health-Seeking Behavior in Ghana

XXIV. Demographic Characteristics

12. Initials: _____

13. Age range

18 – 24 years 25 – 34 years 35 – 44 years 45 – 54 years

55 - 64 years 65 years and older

14. Gender

Male Female

15. Marital Status

Single Married Separated Divorced Widowed

16. Ethnic Group

Akan Ga/Adangme Ewe Northerner

17. Religious Affiliation

Christianity Islam African Traditional Religion Other

18. Place of Residence

Rural Urban

19. Region of Residence

Greater Accra Ashanti Eastern Western Central

Brong Ahafo Volta Northern Upper West Upper East

20. Educational Level Completed

- No Formal Education
 Primary Education
 Secondary Education
 Tertiary Education
 Postgraduate Education

21. Self-Reported Income Category

- Low (Less than \$2 or GHS8 per day)
 Average (Between \$2 or GHS8 and \$20 or GHS80 per day)
 High (Greater than \$20 or GHS80 per day)

22. Health Insurance Status

- No Health Insurance
 Private Health Insurance
 Government Health Insurance (NHIS)

For the following sections, please tick the box that best applies to you for each question

XXV. Health-Seeking Behaviors – Government Health Facility

Question/Response	Never	Rarely	Sometimes	Most times	Every time
1. I go to a government health facility for treatment when ill					
2. A government health facility is my first point of call following ill-health					
3. During my past illnesses, I sought treatment from a government health facility					
4. During my future illnesses, I will seek treatment at a government health facility					
5. I seek care from government health facilities for illnesses I consider mild					

XXVI. Health-Seeking Behaviors – Private Health Facility

Question/Response	Never	Rarely	Sometimes	Most times	Every time
1. I go to a private health facility for treatment when ill					
2. A private health facility is my first point of call following ill-health					
3. During my past illnesses, I sought treatment from a private health facility.					
4. During my future illnesses, I will seek treatment at a private health facility					

5. If I had equal access to all options of care, I would routinely seek care at a private health facility					
6. I seek care from private health facilities for illnesses I consider mild					

XXVII. Health-Seeking Behaviors – Self-Medication with Herbal Drugs

Question/Response	Never	Rarely	Sometimes	Most times	Every time
1. I self-medicate with herbal drugs when ill					
2. Self-medication with herbal drugs is my first point of call following ill-health					
3. During my past illnesses, I self-medicated with herbal drugs					
4. During my future illnesses, I will self-medicate with herbal drugs					
5. If I had equal access to all options of care, I would routinely self-medicate with herbal drugs					
6. I self-medicate with herbal drugs for illnesses I consider mild					
7. I self-medicate with herbal drugs for illnesses I consider severe					
8. I self-medicate with herbal drugs for illnesses I consider life-threatening					

XXVIII. Health-Seeking Behaviors – Self-Medication with Pharmaceutical Drugs

Question/Response	Never	Rarely	Sometimes	Most times	Every time
1. I self-medicate with pharmaceutical drugs when ill					
2. Self-medication with pharmaceutical drugs is my first point of call following ill-health					
3. During my past illnesses, I self-medicated with pharmaceutical drugs					
4. During my future illnesses, I will self-medicate with pharmaceutical drugs					
5. If I had equal access to all options of care, I would routinely self-medicate with pharmaceutical drugs					
6. I self-medicate with pharmaceutical drugs for illnesses I consider mild					

XXIX. Health-Seeking Behaviors – Traditional/Herbal Practitioners

Question/Response	Never	Rarely	Sometimes	Most times	Every time
1. I go to the traditional/herbal practitioner for treatment when ill					
2. Going to a traditional/herbal practitioner is my first point of call following ill-health					
3. During my past illnesses, I sought treatment from a traditional/herbal practitioner					
4. During my future illnesses, I will seek treatment from traditional/herbal practitioners					
5. If I had equal access to all options of care, I would routinely seek treatment from traditional/herbal practitioners					
6. I seek treatment from traditional/herbal practitioners for illnesses I consider mild					
7. I seek treatment from traditional/herbal practitioners for illnesses I consider severe					
8. I seek treatment from traditional/herbal practitioners for illnesses I consider life-threatening					

XXX. Health-Seeking Behaviors – Faith Healers

Question/Response	Never	Rarely	Sometimes	Most times	Every time
1. I go to the faith healer for treatment when ill					
2. Going to a faith healer is my first point of call following ill-health					
3. During my past illnesses, I sought treatment from a faith healer					
4. During my future illnesses, I will seek treatment from faith healers					
5. If I had equal access to all options of care, I would routinely seek treatment from faith healers					
6. I seek treatment from faith healers for illnesses I consider mild					
7. I seek treatment from faith healers for illnesses I consider severe					
8. I seek treatment from faith healers for illnesses I consider life-threatening					

XXXI. Perceived Severity – General Illness. For this section, please use the following key to guide you; Consider; 1. **Mild Illness** as any illness that does not significantly interrupt your daily activities 2. **Severe illness** as any illness that interrupts your daily activities such as inability to go to work/school or leads to hospitalization 3. **Life-threatening** illness as any illness that presents immediate danger of death.

Question/Response	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
1. I believe my last illness was mild					
2. I believe my last illness was life threatening					
3. I believe that my last illness could have led to permanent injury					
4. I believe that my last illness could have resulted in a fatality					
5. I believe my last illness could have resulted in disability					

XXXII. Perceived Susceptibility

Question/Response	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. I could become ill in the future					
2. I am at risk of getting ill					
3. There is a good chance that I could become ill in the future					
4. I believe that I could become ill					
5. I believe that I could become ill in the future					

XXXIII. Perceived Benefits – Government Health Facilities

Question/Response	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. Health care at government health facilities is effective at treating illnesses					
2. My illnesses are treated effectively at government health facilities					
3. Professionals at government health facilities are competent					
4. It is safe to seek care at a government health facility					
5. Professionals at government health facilities effectively treat illnesses					

XXXIV. Perceived Benefits – Private Health Facilities

Question/Response	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. Health care at private health facilities is effective at treating illnesses					
2. My illnesses are treated effectively at private health facilities					
3. Professionals at private health facilities are competent					
4. It is safe to seek care at a private health facility					
5. Professionals at private health facilities treat patients with respect					
6. Professionals at private health facilities treat patients with dignity					
7. Professionals at private health facilities can help people with illnesses					
8. Professionals at private health facilities effectively treat illnesses					

XXXV. Perceived Benefits – Self-Medication with Herbal Drugs

Question/Response	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. Self-medication with herbal drugs is an effective way to treat illnesses					
2. It is convenient to self-medicate with herbal drugs					
3. Self-medication with herbal drugs is safe					

XXXVI. Perceived Benefits – Self-Medication with Pharmaceutical Drugs

Question/Response	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. It is convenient to self-medicate with pharmaceutical drugs					
2. It is easy to buy pharmaceutical drugs where I live					
3. Self-medication with pharmaceutical drugs saves time					
4. I can buy most pharmaceutical drugs for self-medication without a prescription					

XXXVII. Perceived Benefits – Traditional/Herbal Practitioners

Question/Response	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. Traditional healers/herbal practitioners treat illnesses effectively					
2. It is safe to seek care from traditional/herbal practitioners					
3. Traditional/herbal practitioners are competent at treating illnesses					
4. Healthcare by traditional/herbal practitioners is effective					

XXXVIII. Perceived Benefits – Faith Healers

Question/Response	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. Faith healers treat illnesses effectively					
2. Faith healers treat patients with respect and dignity					
3. Faith healers can help people with illnesses					
4. It is convenient to seek care from a faith healer					
5. It costs less to seek treatment from a faith healer					
6. It is safe to seek care from faith healers					
7. Faith healers are competent at treating illnesses					
8. Healthcare by faith healers is effective					

XXXIX. Perceived Barriers to Government Health Facilities

Question/Response	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. Waiting times at government health facilities are too long					
2. Health personnel at government health facilities are rude towards patients					
3. Quality of healthcare at government health facilities is poor					

XL. Perceived Barriers to Private Health Facilities

Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. Waiting times at private health facilities are too long					
2. Health personnel at private health facilities are rude towards patients					
3. Quality of healthcare at private health facilities is poor					

XLI. Cues to Action – Government Health Facility

Question/Response	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. My friends encourage me to seek treatment at a government health facility					
2. My family members encourage me to seek treatment at a government health facility					
3. My spouse encourages me to seek care at a government health facility					
4. My children encourage me to seek care at a government health facility					
5. I visit a government health facility when I have a serious health problem					

XLII. Cues to Action – Private Health Facility

Question/Response	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. My friends encourage me to seek treatment at a private health facility					
2. My family members encourage me to seek treatment at a private health facility					
3. My spouse encourages me to seek care at a private health facility					
4. I visit a private health facility when I have a serious health problem					

XLIII. Cues to Action – Self-Medication with Herbal Drugs

Question/Response	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. My spouse encourages me to self-medicate with herbal drugs					
2. My religious leader encourages me to self-medicate with herbal drugs					
3. My children encourage me to self-medicate with herbal drugs					
4. I self-medicate with herbal drugs when I have a mild illness					

XLIV. Cues to Action – Self-Medication with Pharmaceutical Drugs

Question/Response	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. My friends encourage me to self-medicate with pharmaceutical drugs					
2. My spouse encourages me to self-medicate with pharmaceutical drugs					
3. My religious leader encourages me to self-medicate with pharmaceutical drugs					
4. My children encourage me to self-medicate with pharmaceutical drugs					
5. I self-medicate with pharmaceutical drugs when I have a serious health problem					

XLV. Cues to Action – Traditional/Herbal Practitioners

Question/Response	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. My friends encourage me to seek treatment from a traditional/herbal practitioner					
2. My family members encourage me to seek treatment from a traditional/herbal practitioner					
3. My spouse encourages me to seek care from a traditional/herbal practitioner					
4. My religious leader encourages me to seek care from a traditional/herbal practitioner					
5. My children encourage me to seek care from a traditional/herbal practitioner					
6. I visit a traditional/herbal practitioner when I have a serious health problem					
7. I visit a traditional/herbal practitioner when I have a life-threatening illness					
8. I visit a traditional/herbal practitioner when I have a mild illness					

XLVI. Cues to Action – Faith Healers

Question/Response	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. My friends encourage me to seek treatment from a faith healer					
2. My family members encourage me to seek treatment from a faith healer					
3. My spouse encourages me to seek care from a faith healer					
4. My religious leader encourages me to seek care from a faith healer					
5. My children encourage me to seek care from a faith healer					
6. I visit a faith healer when I have a serious health problem					
7. I visit a faith healer when I have a life-threatening illness					
8. I visit a faith healer when I have a mild illness					

THANK YOU

VITA

Graduate School
Southern Illinois University Carbondale

Kaamel M. Nuhu

nmmkaamel@siu.edu

Southern Illinois University Carbondale
Master of Public Health (Community Health Education), May 2016

University of Ghana Medical School
Doctor of Medicine, February 2012

University of Ghana
Bachelor of Science, Medical Sciences, September 2008

Special Honors and Awards:

Donald N. Boydston Scholarship – Health Education Masters’ Student (2016)

Dissertation Title:

Determinants of Health-Seeking Behavior in Ghana

Major Professor:

Dr. Wendi Middleton

Publications:

McDaniel, J. T., Nuhu, K., Ruiz, J., & Alorbi, G. (2017). Social determinants of cancer incidence and mortality around the world: an ecological study. *Global health promotion*, 1757975916686913.

Nuhu, K. M., McDaniel, J. T., & Ruiz, J. I. (2015). Colorectal cancer, socioeconomic distribution, and behavior: A comparative analysis of rural and urban counties in the USA. *Epidemiology, Biostatistics, and Public Health*, 12(4), e11604. doi: 10.2427/11604.

Nuhu, K. M., McDaniel, J. T., Alorbi, G. A., & Ruiz, J. I. (2018). Effect of healthcare spending on the relationship between the Human Development Index and maternal and neonatal mortality. *International health*.

Ruiz, J. I., Kaamel, N., McDaniel, J. T., Popoff, F., Izcovich, A., & Criniti, J. M. (2015). Inequality as a powerful predictor of infant and maternal mortality around the world. *PLoS ONE*, 10(10), e0140796. doi: 10.1371/ journal.pone.0140796