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THE CULTURAL CONTEXT OF ALZHEIMER'S DISEASE: THE IMPACT OF
PERCEPTION AND KNOWLEDGE ON WILLINGNESS TO SEEK MEDICAL HELP
AMONG GHANAIAN IMMIGRANTS IN THE UNITED STATES.

A dissertation submitted in partial fulfillment of the requirements for the degree of
Doctor of Philosophy at Virginia Commonwealth University.

By

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ACKNOWLEDGEMENT

Unto God I give the Glory, because He has done great and wonderful things in my life. This dissertation would not have been possible without the Almighty God. To Him I owe all my gratitude and success. There are many people I would like to thank for their advice and encouragement in the completion of this dissertation. First, to my Dissertation Committee members, Dr. E. Ayn Welleford (Chair), Dr. Constance Coogle (co-chair), Dr. Jodi Teitelman (member), and Rev. Dr. Kobina Ofofu Donkoh (member).

Dr. Welleford, you have been my mentor since my master program years. I thank you for paving the way for me to enroll in this PhD program. Your support, guidance, encouragement, and challenges to reach high have never been taken for granted. I am forever appreciative of your support.

Dr. Coogle, (Co-chair), thank you for always inspiring me to think outside the box. You provided me with consistent and reliable guidance. Your continuous responses to my questions, regardless of what time or day it was, will forever be remembered. You have taught me how to be a statistician and a researcher and for that I am thankful.

Dr. Jodi Teileman and Dr.Kobina Ofofu Donkoh, thank you both for your generous contribution of time and support. Your revisions and constant feedback will always be remembered. The support from all committee members made my study possible and it helped me to improve my professional qualifications. Also, I would like

to thank Dr. Jim Cotter, Director of the School of Allied Health. Dr. Cotter, thank you for believing in me. Your encouragement and support has always sustained and carried me throughout my Doctoral study years. Ms. Monica White (Director of Student Services), you have been the foundation for my study at VCU, always ready for whatever questions I needed answers to. Thank you for your support and generosity. I must express my sincere thanks and appreciation to Dr. Navendu Samant for generously sharing his statistical and research expertise, Dr. J Kofi Berko Jr and Mr. Scott Buel for editorial work. May God bless you all.

My family has been very supportive during my Ph.D. journey. To my parents, Mr. & Mrs. Owusu-Mensah, words alone cannot express how thankful I am to have the two of you in my life. Thanks for bringing me up to be the woman that I am today. For all that I am and all that I will be, I owe it all to you. I thank you for your love, support, and encouragement. Auntie Mary Akua Boatemaa, only God knows how much I am thankful for you in my life. May God bless you for being who you are. To my siblings, Yaw Owusu-Boamah, Nana Owusu Nti, and Pricillia and Prince Owusu-Mensah, thank you for your love and support. To my Uncles and Aunties, Mr. & Mrs. Boadu, Nana & Mrs. Nti Yeboah, Mrs. Mercy L. Sakyi, Mr. & Mrs. Akomeah Sakyi, and Mr. Clement Adjei Sakyi, thank you all for your support with prayers and guidance. And not forgetting my two beautiful children, Maame Boatema and Nana Kwadwo, I thank you for your love and support. To all my Godchildren, I love you all.

To my friends, colleagues, and the cohort of 2006, thank you for your ongoing support and encouragement. Thanks to the Reverend and Mrs. Aseidu Frimpong, Eva A.

Peprah, Jennifer Weekes, Maame Ampomah, Yaw Wiafe Akenten, Linda Yeboah and Maame Frema for your encouragement and support. God bless each one of you.

This project would not have been possible without the support of the contribution of the churches and the individuals who helped in filling out the surveys: Christ the King Presbyterian Church, Ebenezer Methodist Church, and Christ Gospel Church in Maryland, and Emmanuel Presbyterian Church, Church of the Living God, and All Nations Methodist Church in Virginia. I thank you for giving me the opportunity to use your facilities to do my research study.

This dissertation is dedicated to the most special and wonderful person in my life: my Uncle Thomas Owusu-Sakyi (Wofa Tucker). Wofa, may God continue to bless you for all the love and support that you continue to give to the family. I owe this degree to you for paving the way for all of us to migrate to the United States for a good life and higher education. I thank you with all my heart.

God bless each and every one for the time, money, and energy that they spent on me during this dissertation journey.

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ABSTRACT

THE CULTURAL CONTEXT OF ALZHEIMERS DISEASE: THE IMPACT OF PERCEPTION AND KNOWLEDGE ON WILLINGNESS TO SEEK MEDICAL HELP AMONG GHANAIAAN IMMIGRANTS IN THE UNITED STATES

By Olivia Owusu-Boakyewaah, Ph.D.

A dissertation submitted in partial fulfillment of the requirement for the degree of Doctor of Philosophy at Virginia Commonwealth University.

Virginia Commonwealth University, 2011.

Major Advisors: E Ayn Welleford, PhD
Associate Professor & Chair, Department of Gerontology
Constance L. Coogle, PhD
Associate Director, Virginia Center on Aging.

This correlational study explored the knowledge, perceived seriousness, and willingness to seek medical help for Alzheimer's Disease (AD) among Ghanaian Immigrants currently residing in the Unites States. Study participants were 163 Ghanaian Immigrants between the ages of 45 and 90, attending Ghanaian community churches in Virginia and Maryland.

Significant results include a positive correlation between knowledge and perceived seriousness of the disease, perceived seriousness of the disease was negatively correlated with caregiving experience.

These results as well as several seemingly counterintuitive findings are discussed in terms of the Health Disparities and Psychometric challenges. Specifically, these results points to the necessity for future research and implication for action in the following areas: 1) Further qualitative exploration to develop a deep, rich understandings of the phenomenon of AD among Ghanaian Immigrants, 2) Improved cultural sensitivity in psychometric assessment with immigrant populations of AD knowledge, perceptions, and willingness to seek assistance, 3) Person Centeredness and Cultural Humility in Educational Interventions to empower individuals and parallel existing cultural beliefs rather than displacing them.

CHAPTER ONE: INTRODUCTION

Problem Statement

The influx of African immigrants into the United States is growing rapidly, from 35,355 in 1960 to 1.4 million in 2007. According to the Migration Policy Institute, most of the growth took place in 1990 (Terrazas, 2009). There are 1.4 million African-born people residing in the United States since 2007. African immigrants made up 3.7 percent of all immigrants in 2007. About one-third of African immigrants are from West Africa. Over half of all African immigrants live in New York, California, Texas, Maryland, Virginia, New Jersey, and Massachusetts (American Community Survey, 2009; U.S Bureau of Census, 2007; Department of Homeland Security Office of Immigration statistics, 2007). The Ghanaian immigrant (GI) population in the United States has grown rapidly over the last decade and a half, particularly between 1990 and 2000, when the population jumped from 20,889 to 86,918 at the time of the 2000 census. Compelling reasons for these growths are family reunification, refugee resettlement, and the strong economy of the 1990s in the United States (Terrazas, 2009).

Due to such rapid growth, this group will soon make up a considerable proportion of the growing elderly population in the United States, and many of them will likely develop Alzheimer's disease (AD). It is generally reported that older adults underutilize

mental health services. However, compared to older Americans of European descent, the underutilization of mental health services in older ethnic minority groups is even more apparent (Watari & Gatz, 2004). To date, there is little empirical research on the use of services for Alzheimer's disease and other dementias among ethnic immigrant minority groups in the U.S. (Watari & Gatz).

Currently, no research has been conducted in connection with Alzheimer's disease and Ghanaian immigrants in the United States. This presents a substantial gap in knowledge needed for help seeking for AD patients/care givers in this culture. Addressing this issue can result in the increasing understanding of AD for the Ghanaian community. This study explores key indicators associated with the willingness to seek medical help for Alzheimer's disease among Ghanaian immigrants in the United States. The results of this study will provide valuable information so that educational activities can be developed to address this issue in the Ghanaian immigrant community.

Purpose Statement and Objectives

The purpose of this study is to examine knowledge and perceptions of Alzheimer's disease and its influence on willingness to seek medical help among Ghanaian immigrants in the United States. The objectives to achieve this goal are:

1. To explore the knowledge level of AD among Ghanaian immigrants and its association with willingness to seek medical help.
2. To identify Ghanaian immigrants' perceptions of the seriousness of AD and its relation to their willingness to seek medical help using one key variable in the health belief model (Perceived Seriousness).

3. To assess Ghanaian immigrants' socio-demographic characteristics and their influence on the willingness to seek medical help for AD. (Demographic characteristic are age, gender, education, years since migration, marital status, and number of children).
4. To assess the impact of Ghanaian immigrants' personal experiences with AD on willingness to seek medical help. (Personal experience includes paid or unpaid caregiving).
5. To examine how the four predictor variables account for proportions of variance in seeking care. (Four predictor variables are knowledge, perception, socio-demographics, and experiences).

Research Questions and Hypotheses

The research questions (**RQ**) to be answered by this study are listed below with the accompanying hypotheses (H1 – H10) that are influenced by previous research results.

RQ1. How will level of knowledge of Alzheimer's disease influence willingness to seek medical help among Ghanaian immigrants?

H1. Lower level of knowledge of Alzheimer's disease will be associated with lower level of willingness to seek medical help for AD.

RQ2. To what extent will the perception of Alzheimer's disease influence willingness to seek medical help for Alzheimer's disease among Ghanaian immigrants?

H2. The perceived seriousness of AD will be associated with willingness to seek medical help for AD.

RQ3. Do socio-demographic characteristics influence willingness to seek medical help for Alzheimer's disease among Ghanaian immigrants?

H3. The tendency to seek medical help for AD will decrease with increasing age.

H4. Females will be more willing to seek medical help for AD compared to their male counterparts.

H5. Higher levels of education will be associated with willingness to seek medical help for AD.

H6. Ghanaian immigrants who have lived longer in the United States will be more willing to seek medical help for AD.

H7. Married people will be more willing to seek medical help for AD compared to non-married people.

H8. People with children will be more willing to seek medical help for AD compared to people with no children.

RQ4. To what extent will personal experience (paid or unpaid caregiving experiences) impact willingness to seek medical care for Alzheimer's disease among Ghanaian immigrants?

H9. People with caregiving experience (paid or unpaid) will be more willing to seek medical help for AD.

RQ5. Will knowledge, perception, socio-demographics, or experiences account for the greater amount of variance in people's ability and willingness to seek medical care for Alzheimer's disease?

H10. Experience will account for a greater amount of variance in people's ability and willingness to seek medical care for AD than socio-demographics, knowledge, or perception.

Significance of the Study

Exploring Ghanaian immigrants' knowledge and perceptions of AD within their cultural context and its influence on seeking medical help is critical, due to the rate of integration and assimilation of this group of immigrants into the United States, and also their growing numbers. Studies based on other diseases have shown that a correct understanding of disease symptoms can help with early detection of the disease, thus improving the benefits of treatments (Gupta & Thomas, 2002; De Nooijer, Lecher, & Vries, 2001; Yardley, Glover, & Allen-Mersh, 2000; Sheik & Ogeden, 1998).

Knowledge of disease risk factors has been identified as a necessary prerequisite for behavior change (Breslow, Sorkin, Frey, & Kessler, 1970). Lee, Lee, and Diwan (2010) reported that an individual's knowledge about an illness is generally linked to their illness-related behaviors. Moreover, knowledge about the symptoms of AD is a prerequisite for the correct interpretation of warning signs and is associated with appropriate help seeking behaviors (Mor, Masterson-Allen, Goldberg, Guadnoili, & Wool 1990; Sheik & Ogeden, 1998; De Nooijer et al., 2001). Werner (2003) also reported that a wide examination of the correlates of knowledge may help in identifying high-risk groups that are in special need of further education.

Models explaining health behaviors, such as illness representations and mental health literacy, suggest that individuals attempt to understand symptoms based on their

knowledge about an illness (Leventhal et al., 1984; Jorm, Korten, Jacomb, Christensen, Rodgers, & Pollott, 1997). This affects their illness-related behaviors, such as recognition, help seeking, management, and prevention (Jorm, 2000; Jorm et al., 2000; Werner, 2003 and 2004). Mental illness in Africa is a part of the traditional society connected with witchcraft. Many cultures have their version of witchcraft, a destructive mystical force so attuned to nature that it can control and manipulate the future. However, witchcraft in Africa is connected to places and people's identity. These ritual and traditional belief systems are so rich and strong that it is hard for outsiders to understand and appreciate. Thus, these traditional belief systems in the Ghanaian immigrant population play an important role in the explanation of health behavior. These ingrained cultural belief systems can be a challenge and a barrier for Ghanaian immigrants seeking medical help. Also, due to a lack of resources in Ghana, care providers use what is available. Witches are present, a regular part of the culture, and can be called upon as an available and culturally accepted treatment method (Palmer, 2010).

In Ghana, any mental illness is associated with the belief in witchcraft and is also believed to be caused by it. These inherent beliefs and cultural ideologies necessitate this research study. Since this topic has not been extensively studied in the past, it will be the first to bring awareness to this problem for this special population of immigrants from West Africa (Ghana). This unique study will identify key reasons that may influence people's willingness to seek medical help for Alzheimer's disease, such as limited knowledge, different cultural beliefs and perceptions, and other characteristics. The

outcomes of this study will serve as a basis to determine which types of educational programs and content are needed within the Ghanaian immigrant community.

Cultural Meanings of Alzheimer's Disease

Many minority cultures have views on AD that differ from Western views (Fosu, 2000). Dilworth-Anderson and Gibson (2002) reported that one's cultural norms and values provide definitions of illness for diseases such as Alzheimer's. Cultural norms, values, and beliefs help create shared collective knowledge about a disease within a group (Wyle & Kaskel, 1994). For example, Gaines (1989) reported that African Americans may assign meaning of "worration," "falling out," or "high blood" to behaviors symptomatic of dementia. Henderson and Gutierrez-Mayka (1992) found that some Hispanics viewed elders with dementia as being "crazy" or having "bad blood," a label that may be shared by the entire family. It is suggested that the stigma associated with AD within the African immigrant community can have an impact on the level of social support offered. This may, in turn, have an effect on willingness to seek medical help (Ngong, 1998; Quinn, 2007; Fosu, 2000).

There is a great deal of debate about how AD is understood and defined across different cultures and traditions and how this may influence a society's response (Quinn, 2007). In the African immigrant culture, there are two systems for explaining AD: the biomedical explanation, with an emphasis on the diagnosis of symptoms treated primarily through medical interventions; and the traditional system, which attributes AD to causes such as witchcraft, curses, or evil spirits and treats it by herbal medicine or spiritual means of prayers and fasting (Quinn, 2007; Hinton & Levkoff, 1999; Levkoff, Levy, &

Weitzman 1999; Gallagher-Thompson, Arena, & Coon, 2000; Dilworth-Anderson & Gibson, 2002).

Demographics and Cultural Heritage of Ghanaian Immigrants

Ghanaian immigrants are a subgroup from the western part of Africa. This group is now estimated to be the fourth largest group of African immigrants in United States after Nigerians, Egyptians, and Ethiopians (Department of Homeland Security's Office of Immigration Statistics [OIS], 2007; Migration Policy Institute [MPI], 2009). At the time of the 2000 Census there were 86,918 Ghanaian immigrants living in the United States (U.S. Census Bureau, 2000). This is the most current information since the United States Census is conducted every ten years. The most significant growth in Ghanaians immigrating to the United States has been in the past four decades since the country of Ghana gained its independence. The Ghanaian immigrant group has its own culture with its own ideologies, beliefs, and practices that differ from those of Western culture and other African groups. These cultural practices, ideologies, and spiritual beliefs make Ghanaians different and unique from other ethnic minority groups. Prior to colonization and the introduction of education and Christianity, this group was controlled by fetish priests and believed in magical powers and spiritualism (Quashigah, 1999; Palmer, 2010).

Even with the advent of Western education, Christianity, medical science, and research development, most Ghanaians still hold onto their traditional cultural beliefs. With these inherent cultural practices and spiritual belief systems, any unusual behaviors, such as the symptoms of AD, are viewed as the spiritual punishment of the patient. Fosu (2000) reported that in Accra, the capital of Ghana, as in many developing countries,

some diseases, such as Alzheimer's and similar disorders were still linked to supernatural causes. The stigma of AD is prevalent among ethnic minorities, and at times, AD is seen as a punishment from God (Gallagher-Thompson et al., 2000; Hinton, Guo, Hillygus, & Levkoff, 2000; Palmer, 2010). This is how the stigma of AD is currently seen within the Ghanaian community.

Even though AD patients cannot care for themselves, the wider Ghanaian society still rejects them by order of local fetish priests. A local fetish priest is someone in the society who performs rituals to consult and seek the favor of the gods of the shrine. Palmer (2010) gave readers an understanding of mental illness within the Ghanaian cultural viewpoint by presenting an overview of the typical Ghanaian perspectives on health, disease, and health care in their relations to witchcraft and cultural ideologies. In spite of more education and medical science advancements, most Ghanaian immigrants here in the United States continue to hold their former ways of thinking regarding AD. Quinn (2007) reported that in Ghanaian society, close relatives sometimes neglect family members with AD, even with a better understanding of medical care. Fosu (2004) also reported that many people within the Ghanaian community attribute the symptoms of AD to supernatural causes, such as evil spirits and witchcraft.

Since the Ghanaian culture is among those that tend to attribute the symptoms of AD to spiritualism and witchcraft, it is now time to include them in research to better understand the disease and lay to rest the old way of thinking based on superstition and myth, as these myths are preventing quality care for people with AD. It is important to understand how Ghanaian culture views a person suffering from Alzheimer's disease and

how cultural beliefs and ideologies relate to people's knowledge, perceptions, and willingness to seek medical help. Thus, as a first step toward promoting an understanding of illness-related behaviors, it is crucial to assess individuals' knowledge about AD and to integrate it into educational material for the general public, as well as developing intervention strategies for health care professionals (Lee, Lee, & Diwan, 2010).

This study is critical because, as the United States becomes increasingly diverse, it is imperative that researchers ensure the inclusion of different groups in research and clinical trials. The need to include diverse groups in dementia research is most evident in the growing number of elderly in ethnic minority populations (Dilworth-Anderson, Thaker, Joan, & Burke, 2005; Lee, Lee, and Diwan, 2010). It is also only through this type of study that the needs and experiences of Ghanaian immigrants can be identified so that appropriate educational programs may be designed to fit their cultural needs.

Background of Alzheimer's Disease

Alzheimer's disease (AD) is the most common type of dementia, accounting for an estimated 60% to 80% of all dementia cases (DSM IV TR, 2000; Alzheimer's Association, 2010). Dementia is a clinical syndrome characterized by loss of, or a decline in, memory and other cognitive abilities caused by various diseases and conditions that result in damaged brain cells. To be classified as having dementia, the following criteria must be met in accordance with the DSM IV TR (2000). Symptoms must include a decline in memory and at least one of the following cognitive abilities: ability to generate coherent speech or understand spoken or written language; ability to recognize or identify objects; assuming intact sensory function, ability to execute motor activities; and

assuming intact motor abilities, sensory function, and comprehension of required tasks, ability to think abstractly, make sound judgments, and plan and carry out complex tasks (DSM IV TR, 2000; Alzheimer's Association, 2010).

AD is a progressive, degenerative mental disorder that attacks the brain's nerve cells, resulting in loss of memory, thinking ability, language skills, and behavioral changes (DSM IV TR, 2000). Early clinical symptoms of AD include difficulty remembering names and recent events, apathy, and depression. Later symptoms include impaired judgment, disorientation, confusion, and behavior changes, such as difficulty speaking, swallowing, and walking. Hallmark physical abnormalities are deposits of protein fragment beta-amyloid (plaques) and twisted strands of the protein tau (tangles) (Alzheimer's Association, 2010). Most warning signs associated with AD include, but are not limited to, memory loss that disrupts daily life; challenges in planning or solving problems; difficulty completing familiar tasks at home, work, or at leisure; confusion with time or place; trouble understanding visual images and spatial relationships; new problems with words, in speaking or writing; misplacing things and losing the ability to retrace steps; decreased or poor judgment; withdrawal from work or social activities; and changes in mood and personality (Alzheimer's Association, 2010).

Although the cause of AD is not yet known, most experts agree that, like other common chronic conditions, it probably develops as a result of multiple factors, rather than a single cause. The greatest risk factor for AD is advanced age, but AD is not a normal part of the aging process. Most American with AD are aged 65 or older, although individuals younger than 65 can also develop the disease. A small percentage of AD

cases (probably less than 1%) are caused by rare genetic variations found in a small number of families worldwide. These variations include chromosome 21 on the gene for the amyloid precursor protein, chromosome 14 on the gene for the presenilin1 protein and chromosome 1 on the gene for presenilin2. In these inherited forms of AD, the disease tends to developed before the age of 65, sometimes in individuals as young as 30 (Alzheimer's Association, 2010).

Delimitations

To enhance the study's feasibility, boundaries have been set to narrow its scope.

Some of the delimitations and assumptions are as follows: the time of this study ran from March through September 2010; the study was limited to middle-aged and older adults (45 years plus) from Ghana, residing in Virginia and Maryland, and attending Ghanaian community churches; permission was granted from church officials in both states to use their facilities as data collection sites; and only participants matching the selection criteria established for the study were included.

Assumptions

The key assumption of this study was that the more knowledge and experiences people have about Alzheimer's disease, the more likely they will seek medical help.

Definition of Terms

Terms that may have multiple meanings are operationally defined for the purpose of this study, so that they are not used in a context that may be misunderstood.

- African immigrant (AI) – a person residing in the United States who, at birth, had no United States citizenship.
- Ghanaian Immigrant (GI) – a person who was born in and lived in Ghana for most of their childhood and adult years and is now residing in the United States.
- Foreign Born – a person who was born outside on the United States.
- Perception – the extent to which an illness is understood by a person within their cultural belief system.
- Fetish Priest – someone who performs rituals to consult and seek the favor of the god of the shrine for others.

Organization of the Study

The remainder of the dissertation is organized into four additional chapters which consist of a review of the literature (Chapter Two), methodology (Chapter Three), results derived from data analysis (Chapter Four), and finally a discussion of how the results suggest directions for future research (Chapter Five). A reference list consisting of all the research and resources used in this study is included. There are also a number of appendices that offer more detailed information to further support this study.

Summary

This chapter provided a brief review of the problem of limited research addressing the issue of knowledge and perception of Alzheimer's disease and how it relates to the willingness of Ghanaian immigrants in U.S. to seek medical help. An overview of

the literature indicates that this topic has not been studied among this group of immigrants in the United States. One of the concepts in the health belief model, “perceived seriousness,” was offered as a framework for the study to understand the relationship between perceived seriousness and willingness to seek medical help.

CHAPTER TWO: THEORETICAL FOUNDATION AND LITERATURE REVIEW

The Problem of Alzheimer's Disease

Alzheimer's disease (AD) is a major public health problem that affects approximately 5 million Americans. It is the seventh leading cause of death in the United States and the 5th leading cause of death in Americans older than the age of 65 (Alzheimer's Association, 2010). Currently, it is estimated that 5.3 million Americans of all ages have Alzheimer's disease (Alzheimer's Association, 2010). This figure includes 5.1 million people aged 65 and older and 200,000 individuals younger than 65 who have early-onset Alzheimer's disease (Herbert, Bienias, & Evans, 2003; Alzheimer's Association, 2010). The Alzheimer's Association estimates that there are approximately 500,000 American younger than age 65 that have AD or other dementia-related disorders, and about 40% of them have AD. One in eight people aged 65 or older (13%) have AD. Women are more likely than men to develop AD. Based on estimates from the Aging, Demographic, and Memory Study (ADAMS), 14% of all people aged 71 and older have dementia (Plassman, Langa, Heeringa, Weir, Ofstedal, et al., 2007). African Americans are more likely than whites to have AD and related disorders. In 2000, there were an estimated 411,000 new cases of AD. That number was predicted to increase to 454,000

new cases a year by 2010; 615,000 by 2030; and 959,000 by 2050 (Herbert, Beckett, Scherr, & Evans, 2003). Every 70 seconds someone in America develops AD; and by 2050 it is projected to occur at a rate of every 33 seconds (Alzheimer's Association, 2010).

The number of people aged 65 and older with AD is estimated to reach 7.7 million in 2030, a greater than 50% increase from the 5 million aged 65 and older who are currently affected (Herbert, Scherr, Bienias, Bennett, & Evans, 2003). This year more than an estimated 5.5 million affected Americans are 85 years and older; by 2050, that number is projected to nearly quadruple to 19 million. While the number of Americans aged 100 years and older was estimated at 80,000 in 2010, it is expected that by 2050, there will be more than a half million of Americans aged 100 years and older with AD (Alzheimer's Association, 2010). By 2050, the number of individuals aged 65 and older with AD is projected to number between 11 million and 16 million, unless science finds a way to prevent or effectively treat the disease. By that time, more than 60% of people with AD will be aged 85 or older (Herbert et al., 2003). The demographic data of growth in the elderly population indicates that AD is an epidemic that researcher must be prepared to confront in terms of education and management if a cure is not found.

Little is known about how African immigrants (Ghanaians in particular) make medical decisions about seeking medical help when experiencing signs and symptoms of AD. Cultural factors can further confound the impact of this disease on its victims and their families by preventing families from seeking outside support. Therefore, it is important to address the differences existing for minority cultural groups as related to

Alzheimer's disease. It is imperative that researchers examine the family's response to chronic diseases such as AD within each cultural context (Dilworth-Anderson & Gibson, 2002; Powell, 2002; Olin, Dagerman, Fox, Bowers, & Schneider, 2002).

In an attempt to understand people's knowledge, perceptions, and behaviors related to certain medical diseases, researchers have applied several social science theories. These include the theory of planned behavior, the resource dependence theory, the transactional cost theory, the stages of change theory, the health behavior theory, and the health belief model (Galvin, Scharff, Glasheen, & Qiang, 2006; Jones, Chow, & Gatz, 2005; Roberts, et al., 2003). Each of these theories has been effective in defining people's perceptions and help seeking behaviors (Wackerbarth & Johnson, 2002).

Churches were chosen as data collection sites because religion has characteristically been an integral part of Ghanaian immigrant history (Debrunner, 1967). Several studies have shown ethnic minority elders to identify strongly with religion and to use prayer and other private religion activities for coping with stress (Walls & Zarits, 1991). Among members of ethnic minority groups, religious affiliation can be an integral part of ethnic identification. Therefore in examining the help seeking behaviors of ethnic minority caregivers, it is important not only to identify culturally-driven perceptions about AD and the help seeking process, but to evaluate how religious perception shapes thoughts and actions as well (Vargas 1992).

Health Belief Model (HBM)

The Health Belief Model (HBM), as illustrated in Figure 1, proposed that the likelihood of an individual to take action to prevent an illness depends on the person's

perception that he/she is personally vulnerable to the condition, the seriousness of the consequences of the condition if left untreated, how precautionary behavior might effectively prevent the condition, and if the benefits of reducing the threat of the condition exceed the costs of taking action (Redding, Ross, Rossi, Velicer, & Proschaska, 2000). Modifying factors incorporated in the model include demographic variables and knowledge. The model operates under the assumption that once an individual perceives a threat to a health condition and is cued to take action, and if the perceived benefits outweigh perceived barriers, the individual is likely to engage in preventative health actions (Kleier, 2004). Certainly, the more knowledge an individual has about a particular medical condition, the more likely the person will be able to determine whether or not to get help (Roberts et al., 2003).

Since this study aims to determine how knowledge and perception of Alzheimer's disease impact willingness to seek medical help, a theoretical framework to better understand what hinders people from seeking medical help for AD is critical. The HBM provides a guide to empirically analyze, explain, and predict preventative health behaviors. The concept of perceived severity (seriousness) in the HBM was used in this study. The use of this concept enabled a better understanding of how the Ghanaian immigrant group copes with issues pertaining to AD and willingness to seek medical help. The diagram in Figure 1 illustrates the concepts in the health belief model. The figure also shows how these variables are organized in relations to people ability and willingness to seek help for specific medical condition (individual perceptions, modifying factors, and likelihood of action).

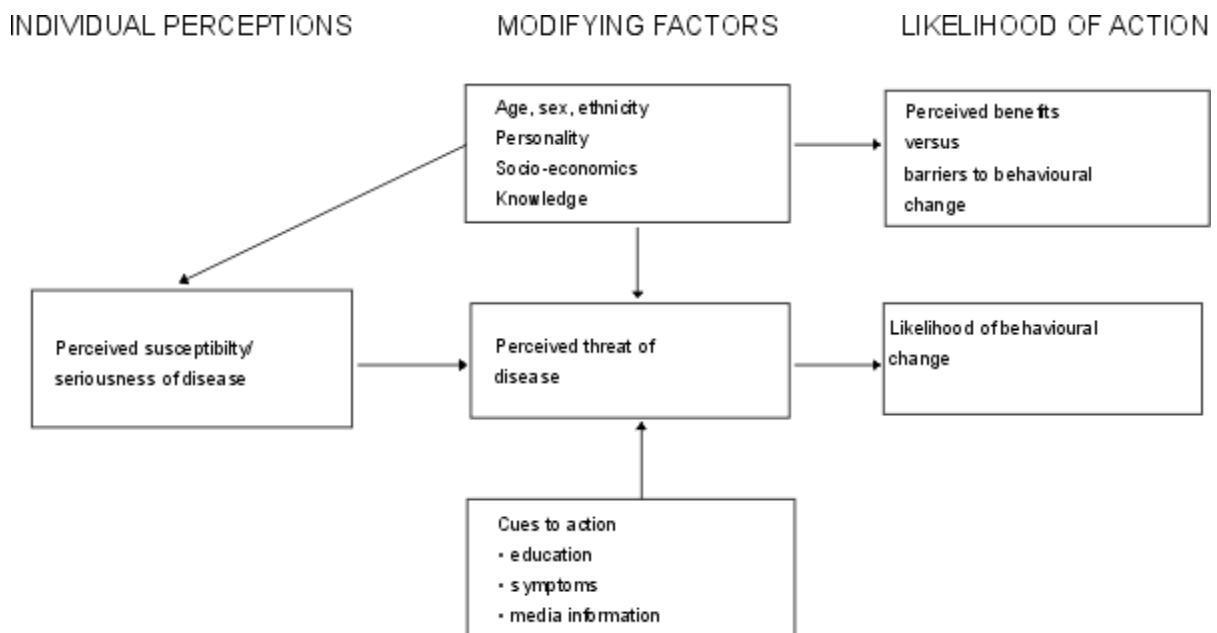


Figure 1: Applied Theoretical Concepts of the Health Belief Model (Source: Glanz et al., 2002, p. 52)

Health Belief Model (HBM) research focuses on the notion that the more an individual is well informed about an illness, has adequate knowledge about it, and believes that changing certain behaviors can decrease the likelihood of getting an illness, the more the person is inclined to seek information and take action (Glanz, Rimer, & Lewis, 2002). The foundation of this model is the assumption or belief that six criteria (perceived susceptibility, perceived severity [seriousness], perceived benefits, perceived barriers, cues to action, and self-efficacy) affect whether or not a person will take action. This model emphasizes the ability to motivate people to follow recommended health behaviors which will then prevent negative health consequences and improve overall

health. Avoiding a negative health consequence is absolutely central to the function of this model (Becker, 1974).

The HBM has been used to analyze the use of prevention services and compliance with care recommendations. The model has been expanded in the twentieth century to include many specific studies, such as Alzheimer's disease and health beliefs within both majority and certain minority cultures. Perceived severity / "perceived seriousness" is the main HBM component addressed in this study to determine how perceived seriousness encourages willingness to seek medical help for AD.

Concepts in the Health Belief Model.

Perceived Susceptibility: As defined in many studies, perceived susceptibility is a person's view of their chance of developing a certain condition (Glanz, et al., 2002; Conner & Norman, 1996; Rosenstock, 1974; Champion, 1984; Becker, Radius, & Rosenstock, 1978).

Perceived Severity (Seriousness as Defined in the Context of this Study): Perceived seriousness is the individual's perception of how serious a condition or behavior will be (Glanz et al., 2002); i.e. the consequences of a disease. The individual's knowledge about an illness will enable him/her to do an assessment of the seriousness of the disease and the potential consequences and effects on the individual or the loved one who is seen as likely to get the disease. According to the HBM, an individual's state of readiness to take action for a health condition is determined by its value in terms of several perceptions, including the perceived seriousness of the condition. (Glanz, Rimer,

& Lewis 2002). Perceived seriousness is concerned with how threatening the condition is or may be to the person (Hochbaum, Leventhal, Kegeles, & Rosenstock 1974).

Perceived Benefits: Perceived benefits are the individual's belief that changing a behavior will decrease the impact of the condition. This defines any action(s) to take and clarifies the positive effects to be expected by making the change(s).

Perceived Barriers: Perceived barriers reflect the individual's opinion of the tangible and psychological costs of the advised action(s). This can be corrected with reducing barriers through reassurance, incentives, and assistance.

Cue to Action: Finally, cue to action involves the strategies needed to activate readiness. This is where an individual is motivated to perform a change of behavior and is confident in his/her ability to take action. This can be done by providing the individual with strategies to access information.

Health Belief Model Studies

Galvin, Qiang, Nguyen, Glasheen, and Scharff (2008) used the HBM to study the psychological determinants of intention to screen genetically for Alzheimer's disease among adults aged 50 to 97 years. The authors proposed that little was known about how receptive older adults are to discussing memory problems with health care providers. They tested the psychological factors explaining older adults' intentions to undergo screening for Alzheimer's disease. By using a population-based random digital dialing strategy, they screened 1,039 older adults in three Missouri counties and recruited them to participate in the study. The study had an 82% response rate and 72% completer rate. The study sample consisted of 67% women, 86% of whom were white. Less than 40%

had a family member with the disease. Predictors for intention to screen included perceived benefits (.25), knowledge of dementia (.26), self-efficacy (.23), preventative health behaviors (.17), and perceived susceptibility (.14). Knowledge was positively correlated with perceived benefits (.29) and susceptibility (.20). Preventive behaviors (.20) were positively correlated with perceived benefits. Self-efficacy correlated positively with preventative behaviors (.24) and perceived benefits (.37), and negatively with perceived susceptibility (-.11). Goodness of fit indices suggested a good fit of this model (root mean square error of approximately .37; comparative fit index of 0.98, and relative fit index of .96). The authors concluded that older adults have knowledge of dementia, perceive benefits from diagnosis and treatment, and are likely to exhibit the willingness and confidence to be tested for cognitive problems. Individuals with high self-efficacy, perceived susceptibility, and positive preventative health behaviors are also more likely to exhibit proactive intentions. It was concluded that these constructs could be used to develop interventions to evaluate the willingness to seek help in the elderly (Galvin et al., 2008).

Galvin, Scharff, Glasheen, and Qiang (2006) developed a population based questionnaire to explore the psychological determinants of screening for memory loss and AD. According to the researchers, little is known about the factors that prevent elders from getting early screening for AD. The study addressed five variables in the HBM: perceived susceptibility, severity, benefits, barriers, and cues to action. Using the HBM and the theory of reasoned action, an iterative process was used for the development of questionnaires about dementia knowledge and screening behaviors in older adults. These

questionnaires were also developed to help determine the participants' underlying intentions for obtaining dementia screening as compared to those who did not intend to seek screening. The study sample consisted of 1,024 residents drawn from 3 separate communities in Missouri, all between the ages of 50 and 87. Reliability analyses conducted on the final sample found high internal consistency. In the final survey, 4 of the 16 were found to have low reliability. However, 3 of the 4 constructs (perceived accessibility, preventative actions, health behaviors, and intention) had a score between 0.62 and 0.65, suggesting the reliability of each to be adequate. The study concluded that addressing symptoms of AD is very important in the early stages, because it will allow researchers to identify unique characteristics such as age, race, sex, socio-economic status, and geographical locations that serve as barriers to screening (Galvin et al., 2006).

Kleier (2004) used the HBM to determine the knowledge and perception of older Jamaican and Haitian men in south Florida in regard to prostate cancer. Using a qualitative design, the author explored knowledge levels, cues which would cause health care seeking behaviors, perception of susceptibility, perception of severity of prostate cancer, barriers to having prostate examinations, and perceived benefits of such examinations. It was proposed that once barriers have been identified, practical and tailored interventions can be formulated to correct misconceptions and encourage prostate screening. The author concluded that Jamaican men were knowledgeable of the signs, symptoms, and risks for prostate cancer. It was believed that early detection was associated with positive outcomes, and all participants claimed to have been examined within the past five years. The Haitian men were less aware than the Jamaicans of signs

and symptoms. While Haitian men thought that screening was useful for early detection, they were less optimistic that the outcome would be positive. Embarrassment and discomfort were primary barriers to screening. This study found that members of certain subcultures may experience isolating effects due to their inability to use the dominant language of an area. In other words, they may not know how to properly ask for the help they need, even if they are inclined to seek treatment. It is undeniable that there is a disparity in the healthcare outcomes for members of certain sub-cultural groups in the U.S. (Kleier, 2004).

Roberts et al. (2003) investigated the difference between African Americans and whites in the perception of AD. Using written questionnaires, the study incorporated some HBM constructs, such as knowledge and perceived threat. Information was gathered from lay and professional organizations meeting in the Atlanta, Georgia, area. The study included a sample of 452 subjects with 61% ($n=174$) whites and 39% ($n=278$) African Americans; 78% female and 47% male; and a mean age of 47 ($SD=14$) years, with a range of 22-90 years. African Americans and whites were generally similar in their beliefs about symptoms, risk factors, and the effectiveness of treatment of AD. The authors reported that follow up studies with a more representative sample and more fully validated measures would be necessary to confirm these differences. Psychological health research suggests that such difference in illness perception could shape responses to disease burden, assessment and diagnosis, and seeking of health care options (Roberts et al., 2003).

Werner (2003) conducted a study to examine the factors influencing the intention to seek a cognitive status evaluation in the presence of memory problems. Guided by the HBM, it was hypothesized that stronger perceptions regarding the susceptibility and severity of developing memory problems and AD would be associated with cognitive screening seeking behavior. Greater perceived benefits, lower perceived barriers, and stronger cues to be examined for cognitive functioning would also predict intentions to seek cognitive status exams. A convenience sample of 186 community-dwelling men and women participated in this study. The mean age was 64.1 ($SD = 7.7$) with an age range from 53 to 90. The HBM variables that were used during face-to-face interviews were perceived benefits of seeking a cognitive status assessment, perceived barriers, perceived susceptibility to AD, perceive severity, and cue to action. Additional variables used were knowledge about AD, incidence of disease, functional status, and memory function. The results indicated that participant's intentions to get examined were higher when presented with accurate and culturally sensitive information on AD. Perceived barriers and cues to action were significant predictors of intentions, accounting for 24% of the variance. These findings suggest the need to develop effective educational activities and improve knowledge about AD and decision making concerning cognitive status examinations (Werner, 2003).

Family Caregivers and Knowledge of AD

Without adequate knowledge, providing care to an older adult with AD could be a stressful experience for caregivers. Pfeiffer (1997) reported that caring for persons with AD requires physical strength, emotional stamina, knowledge about the disease, and

skills for dealing with the behaviors associated with the illness. The National Institute of Aging (NIA, 2008) noted that caregivers of persons with Alzheimer's disease often face a "triple jeopardy;" experiencing significant emotional stress, extreme physical and financial burdens, and in some cases, apathy or even hostility from the person with AD.

Wackerbarth and Johnson (2002) identified benefits and barriers as perceived by family caregivers of persons diagnosed with dementia. Their aim was to determine which benefits and barriers caregivers experienced. A survey was mailed to caregivers involved in the decision to seek a diagnostic assessment at a University of Kentucky memory clinic. A total of 528 family caregivers (response rate 71.7%) returned a 4 page survey designed to elicit perceived benefits and barriers and demographic information. Respondents reported delaying the cognitive assessment for an average of 22.4 months after noticing symptoms. All groups reported receiving the same number of benefits from the assessment. Perceived benefits involved confirmation of a medical condition, access to treatment, and help preparing for the caregiver role. By incorporating these benefits, intervention can be designed to increase the likelihood of an early diagnosis assessment (Wackerbarth & Johnson, 2002).

Table 1 summarizes the above mentioned studies with their sample sizes, locations, and all HBM variables explored. Perceived susceptibility, perceived severity (seriousness), perceived benefits, perceived barriers, and cues to action accounted for a significant proportion of variance in knowledge and perception of health seeking behaviors and Alzheimer's disease.

Table 1: Studies Using Constructs of the Health Belief Model (HBM)

Study	Sample size (n) and location of study	Measure of relations for perceived susceptibility	Measure of relationship for perceived severity	Measure of relationship for perceived benefits	Measure of relationship for perceived barriers	Measure of cue to action	Measure of self-efficacy
Galvin et al. (2008)	1,039 elderly, Missouri	Yes	Yes	Yes	Yes	Yes	Yes
Galvin et al. (2006)	1042 elderly, Missouri	Yes	Yes	Yes	Yes	Yes	Yes
Klieier (2004)	20 men, 10 Haitians 10 Jamaicans, Florida	Yes	Yes	Yes	Yes	Yes	Yes
Roberts et al. (2003)	452 adults, Georgia	No	Yes	Yes	Yes	No	No
Werner (2003)	186 adults Haifa, Israel	Yes	Yes	Yes	Yes	Yes	Yes
Wackerbarth and Johnson (2002)	528 caregivers, Kentucky	No	Yes	Yes	Yes	Yes	Yes

Overall, these studies confirmed that the HBM is useful in predicting people's perceptions about health behaviors regarding particular diseases and illness. These studies found that before an action is taken, anticipated barriers to taking the action must be outweighed by the benefits of taking the action (Wackerbarth & Johnson, 2003). While no such study has been conducted with the GI population, the use of this model enabled the researcher to better explore Ghanaian immigrants' knowledge and perception of AD and how it impacts ability and willingness to seek medical help. Table 1 list

studies conducted using the constructs of the health belief model (perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cue to action and self efficacy).

Cultural Context of Alzheimer's Disease

The Alzheimer's Association (2010) reported that understanding people's perception of the cause of Alzheimer's disease is crucial, because these views influence opinions about how to best prevent and treat it and whether to participate in research. The HBM maintains that health-related behaviors are determined by whether individuals perceive themselves to be susceptible to a particular health problem; see the problem as serious; are convinced that treatment or prevention activities are effective and not too costly in terms of money, effort, or pain; and are exposed to a cue to take health action. This ideology could be applied to various cultures because if a particular culture sees AD as a normal part of the aging process, that culture's support for seeking medical help will be minimal. However, if a culture sees AD as a medical disease that requires treatment, they will be more compelled to seek medical help.

The following section of this literature review examines studies conducted on Alzheimer's disease and ethnic and racial minority cultures in the United States. It lays emphasis on knowledge and understanding of AD within minority cultures and how perceptions hinder ability and willingness to seek medical help. Additionally, it presents an overview of African immigrant cultures (particularly Ghanaians) and how knowledge and perception of AD affect interactions within formal health care systems and its impact on their willingness to seek medical help.

Before one can understand the impact of culture on help-seeking behaviors within minority cultures, it is important to know the definition of culture. Culture is conceptualized as a set of shared symbols and beliefs that shape individual and/or group behavior (LeVine, 1974; Ogbu, 1993). Culture is neither monolithic nor static; it is ever changing (Keith, 1990). Goodenough (1991) reported that “culture consists of the criteria or guidelines for speaking, doing, interpreting, and evaluating what people who live and work together have acquired in the course of interacting with one another in the conduct of recurring activities and they have thus learned to attribute to one another” (p.85). Cultural norms, values, and beliefs help create shared collective knowledge about a disease within a group (Chrisman & Kleinman, 1993; Henderson et al., 1993; Wykle & Kaskel, 1994). Evidence shows that one’s broader cultural norms, values, and cultural frame give meanings to and provide definitions of illness stemming from diseases such as Alzheimer’s (Dilworth-Anderson & Gibson, 2002).

Many studies have been conducted to assess the knowledge and perception of AD and its impact on race, ethnicity, and culture, and vice versa (Jones, Chow, & Gatz, 2006; Mahoney, Cloutterbuck, Neary & Zhan, 2005). Most of these studies used specific minority groups, such as African Americans, Chinese, Hispanics, Koreans, Latinos, people of European descent, and Pacific Islanders (Jones et al., 2006; Mahoney et al., 2005; Ayalon & Arena, 2004; Hinton, 2002; Shadlen, McCormick, & Larson, 2002; Janevic & Connell, 2001).

Dilworth-Anderson and Gibson (2002) conducted a study on issues of ethnicity and culture as related to AD. The authors highlighted ways in which culture can influence

caregiving to persons with dementia across different ethnic groups in the United States. Particular attention was given to the impact of cultural values, norms, beliefs, and the ability to determine definitions of diseases and illness. It was concluded that caregiver decision making and help-seeking are influenced by the meaning(s) they assign to AD.

Quinn (2007) conducted a study in Ghana, West Africa, to explore the impact of cultural beliefs on the society's response to mental illness and Alzheimer's disease. The authors compared beliefs and family responses to mental illness/AD in four cities in Ghana. Using a qualitative approach, 80 participants from various tribes (both in cities and rural areas) were interviewed. Participants in urban areas had a greater belief in the biomedical causes of mental illness/AD, whereas people in the rural areas were more likely to believe that spiritual factors were responsible. The range of beliefs about AD suggests that there are limitations to the universal approach, and it is important to take account of various cultural differences in beliefs, knowledge, and perception of AD, even within a single country (Quinn, 2007).

Jones, Chow, and Gatz (2006) conducted a study to determine the factors influencing dementia treatment-seeking behaviors in Asian-Americans with the assumption that successful interventions for AD rely upon early diagnosis and treatment. Therefore, it is important to know the factors preventing minority cultures from seeking and getting early diagnoses. The factors assessed were perceptions, beliefs, values, and feelings relating to AD. The study used focus groups drawn from Asian American communities representing different national origins. Study participants were Japanese American (n = 23; three groups of six and one of five, all English speaking), Korean

American (n = 13; one group of seven English speaking and one group of six Korean speaking), Chinese American (n = 26; one group of eight and one group of six Cantonese speaking, two groups of six Mandarin speaking, residing in Los Angeles and Orange counties and Fresno in California). Group sessions were designed to last two hours with a break for refreshments. The study concluded that, while these communities share a keen awareness of AD, beliefs regarding AD are highly influenced by “folk” wisdom and culturally acceptable norms. Folk wisdom is defined as a set of assumptions, constructs, and convictions about the everyday behaviors of ourselves and others. Strong cultural norms are more acceptable to people in these communities than scientific information. People will act and behave based on the standard set forth by their cultural norms (Jones et al., 2005). The authors found no difference in these cultures in factors influencing dementia treatment seeking behaviors.

Hargrave (2006) conducted a literature review to determine African American caregiver characteristics, with the notion that African Americans have limited knowledge about dementia and the caregiving role. It was asserted that the African American culture may employ a variety of ways to define AD. Among these are seeing this illness as a normal part of the aging process or a form of mental illness. These cultural cues, or ideologies, are likely to prevent African American families from seeking AD medical help. Other investigators have reported that African Americans, compared to white caregivers, are less distressed by disruptive behaviors (Hargrave, 2006).

Mahoney, Cloutterbuck, Neary, and Zhan (2005) explored cross-cultural similarities and differences in minority caregiver perceptions of the onset and diagnosis

of AD. The authors performed a meta-analysis of three qualitative studies conducted in Massachusetts with 22 caregivers. The original studies were conducted in 2002 and focused on the caregiving experience of African American, Latino, and Chinese-American caregivers of elderly people with Alzheimer's disease. The meta-analysis was conducted to enable cross-group analyses. It was reported that all participants had similar thoughts about the signs and symptoms of AD. A lack of knowledge about AD, rather than culturally influenced beliefs, was a major deterrent to having an elder's memory assessed. Community physicians' failure to recognize AD or make referrals to specialists was more problematic than language or ethnic differences. The author concluded that there was a need to expose minority cultures to Alzheimer's disease information, increase dementia awareness programs, motivate clinicians to adopt culturally sensitive communication patterns, and provide community education to reduce stigmatization of persons with AD (Mahoney et al., 2005).

Ayalon and Arena (2004) examined caregiver knowledge of AD in four groups of older adults with 100 Anglos, 38 Latinos, 30 Asians, and 31 African Americans participating. The study aimed to determine if knowledge of AD differs among minority cultures. Using a quantitative approach, the author hypothesized that older Anglo adults would have more accurate knowledge of AD and a higher level of education than African Americans, Latinos, and Asian elders. Study participants were recruited from four primary care clinics in San Francisco by random sampling. It was concluded that low knowledge of AD was prevalent across all four groups but that Anglo-Americans were more knowledgeable about AD than their counterparts. All cultures had

misconceptions about the prevalence, etiology, and diagnosis of AD. The authors concluded that certain ethnic minority groups do not have sufficient information about AD, and this may explain the lack of AD services used by minorities (Ayalon & Arena, 2004).

To understand pathways to care for Alzheimer's disease among Korean Americans, Watari and Gatz (2004) conducted a study with 109 Korean-Americans between the ages of 18 and 73, recruited from various Korean community churches in southern California. The authors wanted to see the impact of acculturation and knowledge on help seeking attitudes towards AD patients. The study hypothesized that those who conceptualized dementia symptoms as a disease would be more likely to indicate that help should be sought, preferred formal sources of care, and had increased knowledge about AD, a more positive attitude towards seeking treatment, and a higher acculturation level compared with those who conceptualized the symptoms as normal aging. In part one of the study the authors examined help seeking behaviors for AD using archival data from a group of patients and caregivers who had actually sought care. The purpose of this was to increase their understanding of factors influencing help seeking behaviors and to identify potential barriers. In part two, they examined conceptualizations of dementia and AD and willingness to seek help. A convenience sample of study participants were recruited from Protestants and Methodist churches. Participants filled out a survey in either English or Korean. It was concluded that there was a lack of knowledge about AD within the Korean community. Those more familiar with AD

symptoms indicated they would seek help, supporting the value of public education (Watari & Gatz, 2004).

Janevic and Connell (2001) examined the impact of race, ethnicity, and cultural variation on the nature and effect of dementia care giving experiences. Using an electronic database, they searched articles published in peer review journals between 1996 and 2000 and retrieved articles studying African-American, Chinese, Chinese-American, Korean, Korean-American, Latino, and white United States residents and residents of 14 European Union countries. The results indicated that white caregivers tended to report greater depression and appraised care giving as more stressful than their counterparts. There were mixed findings regarding coping and social support. However, other data suggested that minority groups may not have as much available support as whites. The authors recommended future studies in this area using quantitative and qualitative methods to specify pathways by which race, ethnicity, and culture affect the caregiving experience. They also emphasized that research examining the impact of immigration or acculturation status on the dementia care giving experiences is needed.

Overall, research with minority cultures on knowledge and perception about AD is understudied and there are no studies conducted specifically within the Ghanaian immigrant population in the United State. This study is the first to explore this issue, its impact on the community, and blocks to the willingness to seek medical help.

Table 2 below summarizes mentioned research studies with Alzheimer's disease and minority culture, giving particular attention to study type, sample size, location, and measure(s) used. This study adopted the instrument by Carpenter et al. (2009),

Table 2: Review of Literature by Authors and the Most Recent Studies

Author(s) / Title	Sample Size (n), Location of Study, Population being Studied	Designs and Outcomes
Quinn& Neil, 2007. Belief and community response to mental illness in Ghana: The experience of family cares	80 adult males and females in Ghana, West Africa. Ghanaian nationality.	Qualitative study with interview. Questions were developed by the authors.
Jones et al., 2006 Asian Americans and Alzheimer's Disease: Assimilation, Culture and Beliefs	62 adults from Asian-American community. 26 Chinese, 23 Japanese, and 13 Korean, in California.	Focus group over a period of eight months, information was recorded and transcribed.
Hargrave, 2006 Caregivers of African American Elderly with Dementia : A review and Analysis	No study participants. Location in California.	Literature Review.
Mahoney et al., 2005 African American, Chinese, and Latino's family caregivers impression of the onset and diagnosis of dementia: cross cultural similarities and differences	22 African-American, Latino, and Chinese caregivers in Massachusetts.	Meta-analysis of three qualitative studies from the past.
Ayalon & Areal, 2004 Knowledge of Alzheimer's disease in four ethnic groups of older adults	100 Anglo, 38 Latino, 30 Asian 31 African American and 10 ethnically unidentified older adults in California.	Alzheimer's Disease awareness test (ADAT).
Watari & Gatz, (2004) Pathways to care for Alzheimer's Disease Among Korean Americans	109 Koreans in California.	Survey in English developed by the authors.
Dilworth-Anderson & Gibson, (2003) The cultural Influence of Values, Norms, meanings and perceptions in understanding dementia in ethnic minorities.	No study participants. Study location in North Carolina,	Literature Review.
Janevic & Connell, (2001) Racial, ethnic, and cultural difference in dementia care giving experiences	No study participants. Study location in Michigan.	Literature Review: Electronic data base.

Alzheimer's Disease Knowledge Scale (ADKS); Champions Health Belief Knowledge Scale (CHBMS) by Victoria Champion (1984); and the Attitude to Seeking Professional Psychological Help Scale (ATSPPHS) by Fischer & Farina (1995).

CHAPTER THREE: RESEARCH DESIGN AND METHODS

Introduction

This chapter provides a detailed explanation of how the study was conducted and offers specific information outlining its organization. This chapter also includes a methodological evaluation. Chapter sections include research design, sample and recruitment procedures, setting, data collection procedures, statistical analysis, hypothesis testing, and limitations of the study.

Research Design

A cross sectional, exploratory and correlation design study based on a survey method was conducted using the independent predictor variables of knowledge and perception of AD, socio-demographic characteristics, experiences with AD, and the dependent variable of willingness to seek medical help. The rationale for this research design includes:

1. A cross sectional study design in which data is collected at one point in time. Sometimes it is used to infer changes over time when data is collected from different ages or developmental groups (Polit & Beck 2004). This design was appropriate for describing the association between knowledge and experience with AD, as well as the perceived seriousness of the disease with an individual's ability and willingness to seek medical help. It measured the effect

of age, gender, education, years since migration, marital status, the number of children, and their association with willingness to seek medical help.

2. The exploratory methodology attempted to investigate areas that have yet to be studied to obtain new information, insight, and awareness, and to determine new patterns between the impact of knowledge and experience with AD.
3. By definition, a correlation research design explores the interrelationships among variables of interest without any active intervention by the researcher (Polit & Beck, 2004). The correlation design was used to test the associations between all the independent and dependent variables of interest. It promoted a better understanding of the relationship between all study variables.

This research design was appropriate for this study because basic information on this issue is needed to understand participants' beliefs about AD.

Sampling and Recruitment Procedures

The study population included male and female Ghanaian immigrants aged 45 and older residing in northern Virginia and Maryland. The study recruited participants from GI community churches. Two hundred individuals participated in this study ($n = 200$).

The researcher sought permission from the officials of six churches to support the study. As an incentive, one hundred dollars was donated to each participating church as well as brochures about Alzheimer's disease and related disorders to study participants after completing the survey. The churches were: Christ the King Presbyterian Church, Ebenezer Methodist Church, Christ Gospel Church in Maryland, Emmanuel Presbyterian

Church, Church of the Living God, and All Nations Methodist Church in Virginia. These churches represent the largest Ghanaian congregations within Maryland and Virginia. The selection of these churches was important to the generalizability of the survey results because it includes Ghanaian immigrants from two different states.

Setting

Maryland and Virginia are among the states with the highest concentration of African immigrants according to the Migration Policy Institute (MPI). It is reported that over half of all African immigrants reside in New York, California, Texas, Maryland, Virginia, New Jersey, and Massachusetts. African countries with the highest number of emigrants to the United States include Nigeria, Ethiopia, Egypt, and Ghana (retrieved from <http://www.migrationinformation.org> on January 10 2010).

Inclusion Criteria

To be included in this study, participants needed be current residents of Virginia or Maryland and they must have been born in Ghana and lived there for at least 20 years. Participants must have lived in the United States for six months or more and be 45 years or older. Finally, participants had to be willing to spend twenty minutes after church services to complete the survey.

Exclusion Criteria

Individuals who were not able to read and write the English language or those with health or cognitive deficits and vision deficits that cannot be corrected with glasses or contact lenses were excluded from the study. Church attendees who live outside of Virginia or Maryland were excluded from the study.

Number of Participants

Power analysis is a tool used to estimate sample size needed in all research. To detect the significant relationships between variables and number of subjects needed for statistically significant results in this study, a power analysis was conducted (Tabachnick & Fidel, 2007). Based on all the independent variables of knowledge, perception, care giving experience, age, gender, education, years of migration, marital status, and number of children with an alpha of 0.05, a power of .80 with a sample size of 200 and above would be needed to detect an effect size as small as $\beta = 0.2$ (Tabachnick & Fidel). Since this study used a large sample size ($n = 200$), type II error was assessed in order to decrease those errors.

Type II error is created by accepting the null hypothesis when it is false (Polit & Beck, 2004). To conduct this type of analysis, three major components must be estimated. These include the significance criterion, (α), the proposed sample size, (N), and the population size, gamma (γ). With the analysis of these components, a power was determined. Effect size is the magnitude of the relationship between the research variables. When relationships are strong, they could be detected as statistically significant even with a small sample size. When relationships are modest, large sample sizes are needed to avoid a type II error (Polit & Beck 2004). An *a-priori* test was conducted using a free statistical software calculator (Soper, 2007) online to confirm the needed sample size of ($n = 200$). This study used an alpha (α) of $p < 0.05$, and a power of .08, an effect size (ES) of 0.15 and $n = 200$ to calculate and confirm the values needed. Effect size of 0.15 is considered the standard medium effect size calculation for the social and

behavioral sciences (Cohen, 1988). Table 3 below shows the churches used for data collection

Table 3: Churches Used for Data Collection.

Church / Location	Number of Participants
Christ the King Presbyterian Church, MD	50
Ebenezer Methodist Church, MD	30
Christ Gospel Church, MD	30
Emmanuel Presbyterian Church, VA	30
Church of Living God, VA	30
All Nations Methodist Church, VA	30

Potential Threats to Reliability and Validity

Since this study used a convenience sample, selection bias that may result from preexisting differences between groups was considered (Polit & Beck, 2004). Also, it was important to note that the collected data was self-reported. Therefore, the potential for low reliability was higher because of possible inaccuracy in reporting the truth. The criteria relating to reading and writing, years lived in Ghana, and years of migration present concerns for generalizability of the research findings. Since all materials are available in English, results cannot be generalized to non-English speaking Ghanaians.

Variables

The major concepts that this study tested were knowledge and perception of AD and their impact on one's ability and willingness to seek medical help. The independent variables were knowledge, perceptions, experience, age, gender, education, years since

migration, marital status, and number of children an individual has. The dependent variable was willingness to seek medical help for Alzheimer's disease.

Independent Variables Measurement (Instrument).

Two surveys and researcher-generated questionnaires were used to test the independent variables: the Alzheimer's Disease Knowledge Scale (ADKS) by Carpenter, Balsis, Otilingam, Hanson and Gatz (2009) and the Champions Health Belief Model Scale by Victoria Lee Champion (1984), with specific questions adopted from the perceived seriousness section.

The Alzheimer's Disease Knowledge Scale (ADKS) is a standardized instrument developed to test understanding about the disease. It is intended to assess the level of knowledge of AD among patients and caregivers, health care and social services professionals, community members, dementia support groups, and other individuals who interact or may interact with patients with AD. This scale is a psychometric update of the Alzheimer's Disease Knowledge Test (ADKT) by Dieckmann, Zarit, Zarit, and Gatz (1988). It is intended to test people's knowledge and to establish educational objectives, stimulate group discussion, clarify common misconceptions, and evaluate support groups and other educational programs to assist people with Alzheimer's disease. Areas addressed include: risk factors, assessment and diagnosis, symptoms, course, life impact, care giving, treatment, and management. Information in this scale reflects current scientific understanding of AD. The test consists of 30 multiple choice questions with a true or false response. The development of this scale included reviewing other AD scales that were designed to assess knowledge of AD, dementia, and related phenomena (e.g.

memory loss). This process served to support the content validity of the scale (Trochim & Donnelly, 2007).

The ADKS was tested on groups believed to be representative of the types of people with whom the scale might be used. These include: health care professionals ($n = 75$), senior center staff ($n = 61$), family caregivers of people with dementia ($n = 54$), community dwelling older adults with no cognitive impairment ($n = 9$), and college students, some of whom had curricular exposure to aging and dementia ($n = 484$). Participants were given or mailed a packet that included a consent form and questionnaire. Respondents were also asked to self-rate their knowledge about AD and related disorders on a scale from 1 (I know nothing at all) to 10 (I am very knowledgeable).

During the development of the ADKS, knowledge of AD was tested with the original ADKT (1988) and the new 49-item version of ADKS (2009). The Alzheimer's Disease Knowledge Test (ADKT; Dieckmann, Zarit, Zarit, & Gatz, 1988) is a 20-item, multiple-choice test with four response options plus a "don't know" option per item. Items on this scale were generated based upon a literature review at the time and expert consensus. Item content covered prevalence, etiology, diagnosis, symptoms, proposed cures, management of problem behaviors and symptoms, public policy affecting reimbursement, and the role of supportive services. A total score was calculated by summing the number of correct responses. According to the original validation study, the ADKT had high internal consistency (0.71–0.92), moderate test–retest reliability (0.62), and adequate construct validity as evidenced by a) performance differences across groups

of respondents with varying familiarity with AD, and b) increasing scores following instruction (Carpenter et al., 2009; Dieckmann et al., 1988).

It was acknowledged that the 49-item scale was impractical for most purposes; therefore, the next step was to reduce the number of items. In the process, a final set of items that had adequate face validity and broad content coverage, was internally consistent, and demonstrated solid properties of validity was sought. Discrimination index analysis was done to eliminate items that were the least effective at discriminating between high and low overall scorers on the scale. A random half of the sample ($n = 384$) was selected for this initial analysis. High scorers (top 27%, $n = 104$) and low scorers (bottom 27%, $n = 104$) on the 49 items were identified. High scorers answered between 40 and 48 items correctly ($M = 43.35$, $SD = 2.03$); low scorers answered between 17 and 35 items ($M = 31.15$, $SD = 3.46$). Then, for each item, the percentage of participants in each group (high and low scorers) who answered the item correctly was calculated.

The item difficulty index analysis was performed using the same randomly-selected half of the sample that was used to calculate the discrimination indices. A difficulty index (p) was calculated for each item, representing the percentage of people who answered the item correctly. Items answered correctly (or incorrectly) by a high percentage of people were unlikely to be discriminated against among test takers and were therefore candidates for deletion. A p value of 0.95 indicates that most people answered the item correctly, and provides little useful information and may, in fact, detract from the scale psychometrics properties (Steriner & Norman, 1995). Thus only those items with a difficulty index lower than 0.95 were retained.

Tests for the homogeneity of items were conducted by using the other half of the sample ($n = 384$) to confirm the weak items identified earlier. Since the goal was to develop a homogeneous scale that measures knowledge about Alzheimer's disease, each item needed to tap that overarching construct. To test the relationship between each item and the overall scale score two indices were used. The first, Cronbach's alpha, was used to calculate the internal consistency of the scale, with successive items removed based on the difficulty and discrimination indices. The authors ensured that alpha did not drop below the recommended criterion of 0.70 (Nunnally, 1970). Deletion was stopped at a scale of 30 items, which provided a significant reduction from 49 while still providing relatively comprehensive content coverage and adequate internal consistency ($\alpha = 0.71$). With the 30 items that were retained, item-total correlations were calculated. For item retention, it is recommended that this correlation be at least 0.20 (Kline, 1986). The item-total correlations ranged from 0.14 to 0.37 ($M = 0.23$, $SD = 0.06$).

Reliability is the degree of consistency or dependency with which an instrument measures the attribute it is designed to measure (Polit & Beck, 2004). To test the reliability of the ADKS, a test-retest measure was done on the 30-item scale on two occasions with 40 people. The participants ranged in age from 22 – 87 ($M = 48.9$ years, $SD = 21.2$), and their scores on the ADKS ranged from 19 – 30 ($M = 24.2$, $SD = 2.4$), suggesting some variability in their knowledge about Alzheimer's disease. The test-retest interval ranged from 2 – 50 hours ($M = 20.4$, $SD = 15.9$), and the test-retest reliability coefficient was 0.81, $p < .001$, suggesting adequate test-retest reliability. The coefficient alpha (the average inter-item correlation) was 0.71. Randomly dividing the 30 items and

correlating scores on those two halves yielded a split-half reliability of 0.55, $p < .001$.

These statistics suggest a moderately homogeneous scale.

Validity is the degree to which an instrument measures what it intends to measure (Polit & Beck, 2004). In this study, content validity, face validity, predictive validity, concurrent validity, and convergent validity were measured. Content validity addresses the adequacy of sampling content. Kerlinger (1973) reported that content validity is the representativeness of the instrument content as it relates to the domain. It consists of expert judgment in which the property being measured is judged for relevance. Content validity for ADKS was established by the review of 20 other AD scales, which contained all the information used in the new scale.

The instruments were divided among the project team to be evaluated by two investigators. The research team comprising of health professionals came together to review the selection and categorization of items made by the original investigators. All discrepancies were reconciled in a series of consensus conferences. This method ensured comprehensive content coverage as well as content relevance (Streiner & Norman, 1995). A spreadsheet was created to list each item and to remove overlapping content. Items were rewritten for final wording. Written items were kept at the 8th grade level to make respondents comfortable. Fifty seven potential items were developed from all the scales. True or false format was used instead of the multiple-choice format as in the ADKT. This format was used to make it easier for respondents to read and understand, as well as for easy scoring by researchers. The 57 items were presented to eight small groups in order to identify unclear phrasing. Groups consisted of graduate students in clinical psychology

and community dwelling older adults. Each group included 3-4 people who completed the instrument.

Face validity was confirmed by universal agreement among the groups that the scale appeared to tap knowledge about the particular disease (Trochim & Donnelly, 2007). Eight items were removed from the scale based on the group's response and feedback, other items were re-written for clarity, and 49 items remained for further testing. The 49 items had features of ADKS with and without a "don't know" (DK) option. This was compared with a sample of 52 undergraduates. Average total scores were higher in the group that completed the non-DK version ($M=35.73$) compared to the group that completed the DK version ($M = 28.96, t(50) = 5.08, p < .001$). This reflects the advantage of being able to guess on the true or false questions.

Predictive validity was examined by calculating the correlation between performance on the ADKS and ratings of self-reported knowledge about AD. The correlation was $0.50, p < .001$. Concurrent validity was examined by comparing ADKS scores across groups of respondents with different degrees of knowledge about Alzheimer's disease. Using t tests, two group differences were examined. Knowledge about AD was more extensive among people who had attended a dementia support group ($M = 25.73$) compared to those who had not ($M = 21.1, t(755) = 9.53, p < .001$); more extensive among people who had attended a class or educational program about dementia ($M = 24.04$) compared to those who had not ($M = 20.57, t(756) = 11.10, p < .001$); more extensive among people whose work involved contact with people with dementia ($M = 24.52$) compared to people whose work did not ($M = 20.91, t(749) = 9.47, p < .001$); and

more extensive among people who volunteered with people with dementia ($M = 22.80$) compared to those who did no such volunteer work ($M = 21.39$, $t(750) = 3.32$, $p < .01$).

Convergent validity is an approach to construct validation that involves assessing the degree to which two methods of measuring a construct are similar (Polit & Beck, 2004). Convergent validity indicates that scores on the new scale are significantly associated with scores on the related construct of the old scale. The correlation between the new scale (ADKS) and the old scale (ADKT) was tested. Both instruments were given to the same people at the same time. This analysis consisted of 311 respondents from a large sample, ranging in age from 18 to 90 years old. The Pearson correlation coefficient between the two scales was $.65$, $p < .001$. The correlation between the ADKS and the ADKT was $.60$, $p < .001$. These correlations suggest a moderate association between the new scale and the original instrument, evidence of adequate convergent validity (Carpenter et al., 2009).

This study used the ADKS instrument because it provided data to link the overall AD knowledge of participants with help seeking behaviors. This information is needed in the future to plan for any educational programs for these groups of unique individuals who may be involved in Alzheimer's care.

The second instrument is the Champion Health Belief Model Scale (CHBMS) (Champion, 1984). The purpose of this scale is to serve as a valid and reliable instrument to test the Health Belief Model (HBM). Conceptual definitions for each of the HBM variables were developed based on an extensive literature review. The dependent variable chosen for initial scale development was frequency of breast self-examination, and the

independent variables were the constructs of the health belief model: perceived susceptibility, seriousness, benefits, barriers, and health motivation. This test was examined for construct validity, theory testing including factor analysis and multiple regression analysis. Cronbach alpha and Pearson correlation coefficients were used to test validity and reliability.

The theory of measurement error served as the basis for all work on reliability of this scale. Four hypotheses were generated to test the scale for reliability and validity. The four hypotheses were: 1) internal consistency, reliability, coefficient for susceptibility, seriousness, benefits, barriers, and health motivation are $>.7$. 2) Correlation coefficients for test-retest reliability on susceptibility, seriousness, benefits, barriers, and health motivations are $>.7$. 3) Concepts of susceptibility, seriousness, benefits, barriers, and health motivations are mutually exclusive. 4) The combination of susceptibility, seriousness, benefits, barriers, and health motivations is related to the frequency of breast self-examination. Hypothesis 1 and 2 represent internal consistency and test retest reliability, and hypothesis 3 and 4 construct validity. The behavior of breast self-examination was selected for scale development because it is a health behavior the majority of adult women need to complete each month. Item development for susceptibility, seriousness, benefits, and barriers focused on breast self-examination and breast cancer while the general health motivation items were drawn from behaviors related to general health.

Content validity was established with the development of 20 to 24 questions written for each independent variable. The list of items was distributed to an expert panel

of eight faculty and doctoral students who had studied the HBM. Along with the items, each reviewer was given the conceptual definitions. A sixth category of “not applicable” was also supplied to allow for response if items were judged not relevant to any of the five categories. Items were selected for inclusion if at least six of the eight judges concurred on a category. Ten to 12 items were judged to be representative of the content for each concept. Items were retained to develop the questionnaires if there was 75% agreement among judges. All items were measured on a Likert scale, with 1 scored as strongly disagrees and 5 as strongly agree. The four stated hypotheses served as criteria for judgment as to internal consistency reliability, test-retest reliability, and construct validity.

The study recruited a convenience sample of 301 women who had the ability to read and write, and were at least 16 years or older, including women from a variety of socio-economic levels. Initially, 640 questionnaires were distributed, 440 by mail and 200 by personal presentation. Of these, 301 were returned. When asked, 190 participants reported willingness to take a second survey to determine change over time. Out of these, 60 were selected to receive a retest. Out of the 60 retest questionnaires, 57 questionnaires were returned. This retest method was done to test the reliability of the scale.

Reliability was accepted for the scales of susceptibility, seriousness, and barriers when the internal consistency reliability coefficient was .70 or above. The scales of benefit and health motivation had coefficients of .61 and .60, and the hypothesis had to be rejected for those concepts. Hypothesis two was to calculate the test-retest reliabilities. It was accepted for the scales on susceptibility, seriousness, barriers, and health motivation

when test-retest correlation coefficients were found to be above .70 and significant ($p < .001$). Hypothesis three tested for construct validity by factor analysis. The scales for susceptibility, seriousness, benefits, barriers, and health motivation were found to be mutually exclusive, and hypothesis three was accepted. The conclusion from factor analysis yields stronger evidence for construct validity by substantiating the independence of constructs as used in the HBM. Hypothesis four also tested for construct validity, i.e., the ability of the instrument to measure as theoretically specified. A multiple regression analysis was conducted to test the HBM constructs with breast self-examination. A multiple R of .51 ($p < .001$) was obtained with 26% of the variance accounted for, therefore; hypothesis four was accepted and construct validity was again demonstrated (Champion, 1984).

This scale has been modified and used for other health issues and diseases besides breast self-examination and breast cancer. Kim, Horan, Gendler, and Patel (1991) adopted the CHBMS to measure health beliefs related to osteoporosis prevention in a sample of 150 elders. The language of the items was preserved as it appears in the original instrument except for replacing breast cancer items with osteoporosis. The format was altered to include two categories of behaviors (calcium and exercise) in the conceptual focus of perceived benefits and barriers. The results of the psychometric analysis demonstrated similarities to those of the CHBMS, including the importance of health motivation in influencing health related behaviors. This finding is consistent with findings on the CHBMS (Kim et al., 1991).

Saleeby (2000) adopted the CHBMS to measure health beliefs about mental illness among diverse groups and to determine its initial psychometric properties as an instrument to measure health beliefs about mental illness. Her study was the first step in the development of a psychometrically sound instrument that can be used to measure health beliefs about mental illness among members of various racial and ethnic groups. Items were modified to reflect mental illness rather than breast cancer based on the expertise of researchers and the conceptual definitions developed for each construct in the CHBMS. The results of this study were consistent in terms of reliability and validity with the findings from the CHBMS (Saleeby, 2000).

These two studies indicate that the scale can be adapted and used for other health related behaviors. This scale has also been translated and used with various cultures such as Arabic, Turkish, and many more. This study adopted this scale with specific emphasis on the questions under perceived seriousness (Champion, 1984). Items on breast cancer were replaced with AD and operational definitions of the words in the context of this study were defined. The study used one of the scales that comprise this measure in isolation from the others.

As reported by Champion (1984), the concepts of the HBM have been tested individually and in combination as predictors of health related behaviors. Many studies used only one or two items for measuring a concept. It is reported that this scale can be used with substitution of words or phrases to test the HBM using many different behaviors. It is for this reason that perceived seriousness was the only variable in the HBM that was used in this study. Adaptation of research questions came from the

Champions Health Belief Model Scale questions on perceived seriousness. Perceived seriousness was chosen among all the variables in the HBM scale for this study as a means to determine the importance of how this disease is seen within the Ghanaian immigrants' community in the United States. Perceived severity has been defined as perceived seriousness in study for a better understanding for the participants in this study.

Secondary Independent Variables and Measurement

Participants were asked to complete written demographic questionnaires. Included in these questionnaires were queries on age, gender, educational level, years since migration, marital status, and number of children. Participants were asked to complete another questionnaire regarding formal or informal caregiving experience including paid or unpaid caregiving. Experiences were grouped into two categories of yes and no responses. Since this variable was measuring caregiving experiences for AD, the rationale used to define the variable was that if any of the questions in the instrument measuring experiences was "yes", the variable was coded as "1," otherwise a value of "0" was assigned.

Dependent Variables Measurement (Instrument)

In order to assess willingness to seek medical help for AD, the Attitude towards Seeking Professional Psychological Help Scale (ATSPPHS) (Fischer & Farina, 1995) was used. This is a 10 item scale scored on a 4-point scale ranging from 0 (do not identify with statement at all), 1 (do not identify with statement), 2 (identify with statement), and 3 (identify completely with statement). A high score on the scale indicates a positive attitude towards seeking professional help for psychological problems. The total score is

obtained by adding the items score (Fischer & Farina, 1995). This scale measures an individual's ability to seek or resist professional help during a personal crisis or following prolonged psychological discomfort. It consists of four subscales: recognition of personal needs for professional psychological help, tolerance of stigma associated with psychological help, interpersonal openness regarding one's problem, and confidence in the mental health profession (Ang, Tan, & Lim, 2007).

Little is known about the interpersonal processes or the attitude and personality components involved in help seeking behaviors in the GI community. One person may view the decision to get professional help as a sign of personal weakness and indicative of failure, while the other may approach help seeking with a genuine expectation of appreciable life changing results. The authors assumed that such attitudinal differences underlie the actual help seeking behaviors. The primary goal was to construct a scale which sampled an attitude domain corresponding to many of the factors that hinder people to seek professional help (Fisher & Turner, 1970). The Attitude Toward Seeking Professional Psychological Help Scale (ATSPSHS) was initially developed by Fischer and Turner (1970). However, it has been revised over the years by other researchers. This study used the shortened version of this scale by Fischer and Farina (1995) who developed a 10-item short version of the Fischer and Turner (1970) 29-items scale with some of the items slightly modified. Scores of the new scale correlated .87 with scores on the original full scale (Fischer & Farina, 1995).

The development of the original scale by Fischer and Turner (1970) included: attitude scales, factor analysis, and inter correlations between the attitude components

and personality variables. Attitude statements were developed in collaboration with several clinical psychologists. A pool of 47 statements was accepted and forwarded to 14 clinicians for rating. Thirty-one items were considered to be highly relevant. The same items were given to 78 high school and 19 nursing students who were asked to indicate agreement or disagreement on a 4 point scale. The students also filled out the Marlowe-Crown Social Desirability Scale. An item analysis showed all 31 items correlated significantly with the summed attitude score. The items and the social desirability scale were administered to a second group consisting of 115 summer college students. Two of the items correlated poorly with the total score and were removed from the scale. The remaining 29 items were considered the final version of the Attitude toward Seeking Professional Psychological Help Scale (Fischer & Turner; 1970). The internal reliability for the scale ranged from .83 to .73 (Fischer & Turner, 1970).

In the condensed version, respondents were asked to rate each response on a Likert scale using the same 29 items. Upon completion, fourteen items with the highest item-total scale correlation ($r_s > .45$) were selected. Response to the 14 key items were factor analyzed with two, three, and four factor solutions using an SPSS-PC program with varimax rotation. The eigenvalue dropped below 1 after two factors were extracted. This was the best factorial solution according to the authors. Factor 1 contains 10 items with loading above .50; these items were .84 (Cronbach's alpha), comparable to Fischer and Turner's full scale of .83 and .86. The remaining four items formed a disclosure interpersonal openness dimension. However, the internal consistency ($\alpha = .64$) was weak, and these items were dropped. Two scoring methods were used: equal weight for all

items and weight corresponding to the factor loading. The two scoring methods correlated ($r = .96$), therefore the equal weighting method was employed because its simplicity and factorial weight are known to be somewhat unstable from one sample to another. Each item was scored 3-2-1-0 or 0-1-2-3, corresponding to the four items pro or anti help seeking content, with the higher score always indicating the pro-help seeking direction. The 10 retained items yielded a potential total score range of 0-30. For the full sample ($n=389$), scores were approximately normally distributed ($M = 17.45$, $SD=5.97$). The study used college students similar to those used in the original study and the same structure of test-retest reliability. Test-retest correlation with a 1 month interval between tests was 180 ($n=32$). The 4 week test-retest reliability was .82. The correlation between scores from the new and the old version of the scale was .87 ($n=62$). Findings in this study indicate that the shorter version can be substituted for the original version because it has all the psychometric properties of the original scale except for the original versions complex structure. (Fischer & Farina, 1995)

Convergent validity has been tested on this scale (Turkum, 2004). The purpose of the study was to provide preliminary evidence for the acceptability, reliability, and validity of the Attitude Toward Seeking Professional Psychological Help Scale (ATSPPHS), serving as a content and psychometric update to the old scale (Fischer and Turner, 1970). Convergent validity indicates that scores on the new scale are significantly associated with scores on the related construct of the old scale. The correlation between the new (Fisher & Farina, 1995) and old (Fischer & Turner, 1970) ATSPPHS scales was tested. The results showed that attitude toward professional help can differ according to

gender. However, the results of validity and reliability testing showed that the scale had acceptable psychometric properties (Turkum, 2004).

Hatchett (2006) used ATSPPHS to provide information on the construct validity of the scale. Relationships between prior treatment experiences and scores on the scale were evaluated. Participants were 270 students recruited from an undergraduate psychology course at a university in the Midwestern United States. Seventy nine percent, with ages ranging from 18 to 53 ($M = 19.0$, $SD = 4.4$), were women. In addition to completing the scale, a subset of 76 participants who reported receiving prior mental health care also evaluated their experiences using a rating scale anchored by 0: very dissatisfied and 4: very satisfied. For the total sample, prior experience with the mental health care delivery system was associated with a high score on the scale, denoting more positive attitudes. In the subgroup with prior treatment experience, evaluation rating was associated with treatment attitudes, accounting for 17% of variance in their scale scores. These results provide additional support for the construct validity of the ATSPPHS (Hatchett, 2006).

Watson (2005) used this scale to compare the attitude toward help seeking behaviors and expectations about counseling among college athletes and non-athlete students. Specific differences were found between student -athletes and non-athletes on both variables relating willingness to seeking counseling. The study concluded by encouraging college counselors to address the growing concern that collegiate student-athletes are underutilizing counseling and support services (Watson, 2005). This

confirmed the clinical usefulness of the ATPSPPHS because the scale helps identify potential target population for health behaviors such as seeking counseling.

Zhang and Dixon (2003) studied acculturation and attitudes of Asian students towards seeking psychological help by using the ATSPPHS. This scale was used to clarify assumptions about specific attitude and personality domains that minimize the tendency for one to seek professional help. Results showed a significant relationship between levels of acculturation and attitudes towards seeking professional psychological help. Significant correlations were found between a student's level of acculturation and stigma tolerance and confidence in mental health practitioners (Zhang & Dixon, 2003).

Duncan (2003) examined the relationships between age, socio-economic status (SES), cultural mistrust, African self-consciousness/ sense of identity, and attitude about seeking psychological help in 131 black male undergraduate and graduate students. Measures used in this study included the Hollingshead Social Status Index, Cultural Mistrust Inventory (CMI), African Self-Consciousness Scale (ASC), and Attitude Toward Seeking Professional Psychological Help Scale (ATSPPHS). Pearson *r* correlations indicated small magnitude but statistically significant correlations between age and ATSPPH (.19) and SES and ATSPPH (-.22), and non significant correlations between ASC and ATSPPHS (-.10) and CMI and ATSPPH (-.14). Findings indicated older, lower SES, black male students with lower CMI tended to have more positive attitudes toward seeking professional psychological help (Duncan, 2003). Other researchers have used this scale to examine help seeking attitude of ethnic minority groups in the United States and finds it very useful (Kim & Omizo, 2006; Tata & Leong, 1994).

Yoo (2001) used this scale to examine the impact of underlying cultural variables on depression symptomatology and attitude towards seeking professional help in White and South Korean college students. The main cultural variable included in this study was individualism-collectivism distinctions. White students showed more positive attitudes towards seeking professional help compared to Koreans (Yoo, 2001). Researchers have also used this scale with culturally diverse groups in countries outside of the United States including Austria (Wrigley, Jackson, Judd, & Komiti, 2005), New Zealand (Skogstad, Deane, & Spicer, 2006), Taiwan (Yeh, 2002), and Singapore (Ang, Lim, Tan, & Yau, 2004).

These studies indicate that the scale has been used with various populations in different contexts to measure attitude toward seeking psychological help. For the purpose of this study, seeking psychological help was substituted for seeking medical help in order to be able to use this scale. Even though this scale measures psychological help and all referenced articles address people seeking psychological help, counseling, or mental health care, this scale can be used for non-psychological help seeking as well. However, as reported by the original authors, it cannot be assumed that attitude score will necessarily translate into actual help-seeking behavior. The nature of the relationship between these measures and post-attitudinal behaviors is unclear and has yet to be specified. Theoretically, attitude is only one component in the help seeking scenario (Fisher, Winer, & Abramowitz, 1993).

Atkins and Gim (1989) used this scale by substituting the words “psychologist”, “counselor”, and “counseling center” for “psychiatrist” and “mental health center”

respectively to make the scale more relevant to college students and to the present time (Atkins & Gim, 1989). This study used the scale with the substitution of certain words. “Mental health” was substituted with “Alzheimer’s disease” and “psychiatrist” was substituted with “medical professional”.

Data Collection Procedures

Survey questionnaires were used to collect personal demographic characteristics as well as to quantify the variables to be measured. The researcher visited each of the identified churches to introduce the study. During the first visit, a brief description of the study and its benefit to the community was presented. Church members were informed that the researcher would be coming another day to collect data and people who were interested could volunteer on that day. The minister made an announcement one Sunday ahead of the data collection day. On the data collection day, the researcher explained the purpose of the study again and reminded participants of the anonymity and confidentiality of participating. Participants were provided with the following: the survey, a pencil, and a private area to complete the survey. This was done after church service. The researcher remained available to address question and concerns. Completed surveys were placed in a secure collection box by the participants, and then collected by the researcher. Upon completing the survey participants received a brochure on Alzheimer’s disease.

Informed Consent

This study obtained approval from the Virginia Commonwealth University Institutional Review Board (IRB) for an exempt status since it is was anonymous survey

research. After approval was granted, an IRB number was given which was referenced on the research subject information form that was attached to the survey. As per the VCU IRB policies, interested persons were able to ask the researcher questions prior to deciding whether or not to participate. Interested individuals were asked to complete the survey only after verbally agreeing to participate. Participants were informed that the study was voluntary and they were free to discontinue their involvement at any time. An information sheet with contact information for the researcher and the VCU IRB Department was made available to study participants.

Statistical Analysis

The survey was coded and entered using the Statistical Package for Social Sciences (SPSS) version 17.0. Statistical analysis of the data involved descriptive, bivariate, and multivariate methods. The dependent variable was willingness to seek medical help for Alzheimer's disease. The independent variables were knowledge, perception, age, gender, education, years of migration, marital status, number of children, and experience.

Descriptive Analysis

The descriptive statistical analysis yielded information on socio-demographic variables including age, gender, educational level, years since migrations, marital status, number of children, and caregiving experience. These data provided information about characteristics of the sample and were later treated as IVs to see whether or not these characteristics related to willingness to seek medical help for AD.

Hypothesis Testing

Correlation analysis was used to measure the association between variables, i.e. how one variable related to the other. In correlations, although the strength of a relationship among variables is explained, causation is hard to determine since other factors may be affecting the variables. Correlation can be graphed on a scatter plot or diagram. It is more efficient to express the relationship between variables by computing the correlation coefficient. The correlation coefficient (r) is a statistic used for measuring the strength of an assumed linear association between variables. It is an index with values ranging from -1.00 for a negative correlation, through zero for no relationship, to +1.00 for a perfect relationship. The most common correlation coefficient is the Pearson Correlation coefficient (Polit & Beck, 2004).

In this study, the Pearson Product Moment correlation coefficient (r) was used to test the relationship between knowledge (Hypothesis One), perceived seriousness of AD (Hypothesis Two), socio-demographic variables (Hypothesis Four, Five, and Seven) and caregiver experiences and willingness to seek medical help (Hypothesis Nine). Spearman Rank correlation coefficient (r) was used to test Hypotheses Three, Six, and Eight. Knowledge was measured by ADKS (2009) by Carpenter et al. Perception of AD seriousness was measured using the score on the CHBMS by Victoria Champion (1984). Socio-demographic and experience variables were measured by researcher generated questionnaire items and willingness to seek medical help was measured by ATSPPHS scores by Fischer and Farina (1995).

Multiple linear regression is a statistical procedure for understanding the

simultaneous effect of two or more independent variables on a dependent variable (Polit & Beck, 2004). The primary goal is to investigate the relationship between one dependent variable and several independent variables. Predictor variables are selected and used based on their ability to account for the greatest variance in the dependent variable. When using multiple linear regression, the outcome variable must be interval or on a ratio level of measurement. The independent variables can vary in level of measurement (nominal or ratio). In this study, the outcome variable of willingness to seek medical help was measured on a continuous scale meeting the metric requirement for linear regression. The outcome variable was entered into the regression equation to evaluate its relationship with the predictor variables. The regression model was completed after all the predictor variables were tested. Multivariate linear regression analyses were conducted to analyze the variable of experience and whether or not it accounted for a significant part of variance in people's ability and willingness to seek medical help (Hypothesis Ten). Additional analysis was conducted to determine which of the four predictor variables (knowledge, perception, socio-demographic, and experiences) was the strongest predictor of variance. This was done using beta (β) weights. "Beta (β) in multiple regression is the standard coefficient indicating the relative weight of the independent variable in the regression equation" (p.520, Polit & Beck, 2004).

Errors (Residual) Score Assumption

Errors or residual assumption is the difference between the predicted and obtained values on a regression equation. The average of all errors should have a sum of zero, have equal variance at all values of the predictors, be uncorrelated with each other, and have

normal distribution on all the predictions. The squared values of the predictions provide a measure of how good the prediction is (Tabachnick & Fidell, 2007). Violations of these assumptions in a research study can be problematic.

Summary

The methods for this study are the most appropriate for determining knowledge, perceived seriousness, socio-demographic variables, experience, and willingness to seek medical help. There are ten research questions for this study as presented in Chapter One. Results of these questions offered the opportunity to learn more about what is needed in the GI community on issues related to AD. In addition, new information will enable educational opportunity and resource sharing for this immigrant group. The methods for this study required use of Ghanaian immigrants residing in Virginia and Maryland and attending Ghanaian community churches. In order to participate in this study, participants had to be age 45 years old and above, had to be able to read the English language, and must have lived in Ghana for at least twenty years before migrating to the United States.

The predictor variables for the study were knowledge, perception, socio-demographic variables, and caregiving experience and the outcome variable was willingness to seek medical help. The descriptive, correlational design allowed the analysis whether or not independent variables accounted for a significant part of variance in willingness to seek medical help for AD. Table 4 provides a list of the independent and dependent variables with their level of measurement and Table 5 offer a summary of the data analysis plan.

Table 4: Variables for Study of Knowledge, Perception, Socio-demographic Data, Caregiving Experiences, and Willingness to Seek Medical Help.

Variable	Type	Operationalization of Measurement	Level of Measurement
Knowledge	Independent Variable	Alzheimer's disease knowledge Scale (ADKS)	Continuous
Perception	Independent Variable	Adopted from the Champion (health belief model scale (CHBMS)	Continuous
Age	Independent variable	Demographic measure	Categorical
Gender	Independent Variable	Demographic measure	Dichotomous
Education	Independent Variables	Demographic measure	Categorical
Years of Migration	Independent Variable	Demographic tool	Interval
Marital Status	Independent Variable	Demographic measure	Dichotomous
Number of children	Independent Variable	Demographic measure	Continuous
Formal or informal care giving	Independent Variable	Caregiver measure	Dichotomous
Willingness to seek medical help	Dependent	Adopted from the Attitude toward seeking professional psychological help scale (ATSPPHS)	Continuous

Table 5: Data Analysis Plan

Statistical test	Variables Tested
General Data Procedures	Clean and screen data by running frequency tables.
Descriptive Statistics	Secondary independent variables. Demographic variables.
Pearson's Product Moment Correlation Coefficient (r) and Spearman Rank Correlation Coefficient (r)	To test, individually, the relation of each of the various independent variables to the dependent variable.
Multiple Linear Regression	To analyze factors accounting for a significant part of variance in the ability and willingness to seek medical care for AD.
Beta Weight	To analyze which of the four independent variables (knowledge, perception, socio-demographic, and experience) accounts for the greatest proportion of variance.

CHAPTER FOUR: RESULTS

Sample Characteristics

The setting for the study was six Ghanaian immigrant community churches located in Maryland and Virginia. Three churches were selected from each state. Three hundred individuals agreed to participate. Forty participants were excluded because they were unable to read and understand the English language; 25 participants were excluded because they had not lived in Ghana for at least 20 years, 10 were excluded because they had lived in the United States for less than six months; another 10 were excluded because they were not members of the participating churches; and 15 were excluded because they were not willing to stay after church to complete the survey. Table 6 list demographic for study sample.

The data in Table 6 indicates that 10 participants who did not live in Ghana for 20 years before migrating to the United States were included in the analysis. These participants were included because they explained that they visit Ghana annually. For this reason, they share almost everything in common with those who lived in Ghana for at least 20 years. Most of the participants spend part of the year in the U.S.A and part in Ghana. This indicates that their knowledge on the subject matter is similar to those who have lived there for at least 20 years thus being a justifiable reason to include them in the data analysis.

Table 6: Demographic for Study Sample

Factors	N=163	%
Gender		
Females	85	53
Males	74	47
Level of Education		
Less than High School	20	12.3
High School Diploma	43	26.4
Some college/vocational Sch	46	28.2
College Graduate or more	51	31.3
Years since Migration		
Six month to one year	8	4.9
Two years	14	8.6
Three to five years	19	11.7
Six to ten years	45	27.6
Eleven years or more	75	46.0
Marital Status		
Married	103	64
Non Married	53	34
Where do you live		
Virginia	113	69.3
Maryland	49	30.1
Born in Ghana		
Yes	157	96.3
No	5	3.1
Caregiving Experience		
Experience	32	19.5
No Experiences	125	76.2

After meeting the inclusion criteria, 200 individuals completed the survey. Of these, 30 participants were excluded from the analysis due to a large portion of missing data such as missing pages of the survey tool or only half of the questions were answered. Table 7 list descriptive statistics showing variables in the study. Overall, the descriptive statistics presented in Table 7 indicate that there were a total of 123 missing items from participants in their response to the surveys, and it is assumed that they were missing at

Table 7. Descriptive Statistics Showing Variables in the Study

	N	Minimum	Maximum	Mean	Std. Deviation
ADKS	140	10	30	18.33	3.80
CHBM (Perception)	152	0	12	6.99	3.76
Age	154	45	90	56.01	10.24
Gender	159	1	2	1.53	0.50
Education	160	1	4	2.80	1.02
Years of Migration	161	1	5	4.04	1.55
Married/ Non Married	162	0	1	0.50	0.70
Number of children	160	0	12	2.65	2.41
Experience	157	0	1	.80	.404
ATSPPH	157	0	21	12.38	3.80
Valid N (listwise)	118				

Dependent Variable Measure: ATSPPHS.

random. Due to a few cases of missing demographic variables, the *N* changes in the analyses conducted.

Table 6 gives detailed explanation of the demographic data. Although the majority of respondents were female, males were almost as well represented. Half of the study participants had a college graduate degree or more, and the majority had at least a high school diploma. Only 12.3% reported having less than a high school education. Participants who had lived in the U.S. for a much longer time were better represented compared to those who have been in the United States for a much shorter time. Married participants were more represented compared to non-married participants. Participants who lived in Virginia were represented more than those in Maryland.

Table 6 also shows that 96.3% participants were born in Ghana and 3.1% reported that they were not born in Ghana but lived in Ghana for their first twenty years before migrating to the United States. These participants reported being born in other African countries. As indicated in Table 7 the number of children for participants ranged between 0 and 12 children ($M = 2.6$, $SD = 2.4$, $N = 160$). Also, it is worth noting that 25% of the sample reported having no children. Five participants reported having eight or more children.

Data Analysis Plan

The key independent variables of knowledge, perceptions, socio-demographics, and experiences along with the dependent variable of “Willingness to Seek Medical Help” were examined to begin the data analysis process. The data were entered in the Statistical Package for the social science analysis. Statistical Analysis of this data involved two stages that offered descriptive statistics measures and exploring the independent variable as it related to the dependent variable. Descriptive statistics looked at the minimum and maximum value ranges as well as the mean, median, and standard deviation of the variables studied. These analyses helped in detecting errors among the variables entered. Scatter plot was used to assess for outliers among the variables. Table 8 shows the normal distribution of the data set and Table 9 shows the skewness and kurtosis of the distribution and the z scores for the variables in the study. An examination of the skewness scores revealed that three of the variables were not normally distributed ($z > 3.3$). This shows Age; Years since Migration, and Number of Children were not

Table 8: Normal Distribution of the Data Set.

	<i>n</i>	Skewness		Kurtosis	
		Statistic	Std. Error	Statistic	Std. Error
ADKS	140	.423	.205	.639	.407
CHBMS	152	-.486	.197	-.955	.391
Age	154	1.291	.195	1.444	.389
Gender	159	-.140	.192	-2.006	.383
Education	160	-.295	.192	-1.098	.381
Years of migration	161	-1.118	.191	.296	.380
Married / Non Married	162	-.626	.191	-1.628	.379
Number of children	160	1.252	.192	2.487	.381
Experience	157	-1.485	.194	.207	.385
Valid N (listwise)	119				

Table 9: Variable and Z Score for Skewness and Kurtosis

Variables	z score for Skewness	z score for Kurtosis
ADKS	2.2	1.5
CHBMS	-2.46	-2.4
AGE	6.62*	3.7
GENDER	0.7	-5.2
EDUCATION	1.5	-2.8
YEARS OF MIGRATION	5.8*	0.7
MARRIED / NON MARRIED	3.2	-4.2
NUMBER OF CHILDREN	6.6*	6.5
EXPERIENCE	0.5	-7.6

*Indicates z scores that are not normally distributed.

normally distributed. Therefore, the Spearman correlation was used to test these three variables instead of the Pearson Correlation. No adjustment for the kurtosis scores was required since this is less of an issue for the correlations than skewness.

Table 10 show missing cases for ADKS, ATSPPHS, CHBMS with mean substitution.

Table 10. Missing Cases Table for ADKS, ATSPPHS, and CHBMS.

ADKS	Missing cases / using mean substitution
question one	two cases
question two	three cases
question nine	five cases
question twelve	three cases
question fifteen	two cases
question twenty	three cases
question twenty five	Four cases
question twenty seven	three cases
question twenty eight	two cases
question thirty	three cases
ATSPPHS	Missing cases / using mean substitution
question two	three cases
question three	three cases
question four	three cases
question five	three cases
question seven	two cases
question eight	two cases
question ten	three cases
question eleven	three cases
CHBMS	Missing cases / using mean substitution
question one	two cases
question two	three cases
question three	two cases
question four	four cases
question five	two case
question six	three cases
question seven	three cases

Missing data can be a frequent problem in research (Horton & Kleinman, 2007). This may occur when participants decline to provide some values or remove information due to confidentiality concerns. The more data that is missing, the greater the likelihood that the issue of incomplete cases will need to be addressed. Several options exist for handling missing data, and these approaches are selected based on several factors including the size of the data set being analyzed and the statistical technique being used (Horton & Kleinman, 2007). The best option in handling missing data is to engage in mean substitution. This method decreases the variation of the score and also decreases the individual variables in proportion to the number of missing data. With mean substitution, a variable mean is calculated based on available cases and it is used to fill in the values of the missing cases to avoid skewing the data set. Mean substitution was used to address the issue of missing data in the three scales used in the survey (ADKS, ATSPPHS, and CHBMS). Specifically, missing cases where mean substitution was used can be found in Table 10. On ADKS, three cases were deleted; on ATSPPHS, three cases were deleted; and on the CHBMS, two cases were deleted. Overall, eight cases were deleted from the data.

Frequencies and Hypothesis Testing

In each of the following subsections, the analyses performed were summarized and all significant relationships were reported for each hypothesis. Table 11 list related hypotheses, the variables being tested, and whether the item was statistically significant

Table 11. Dependent and Independent Variable with Tested Hypothesis.

Hypothesis	Variable	Statistically Significant
Hypothesis One	Lower level of knowledge of AD will be associated with lower level of willingness to seek medical help.	No
Hypothesis Two	The perceived seriousness of AD will be associated with willingness to seek medical help.	Yes
Hypothesis Three	The tendency to seek medical help for Alzheimer's disease will decrease with increasing Age.	Yes
Hypothesis Four	Females will be more willing to seek medical care for AD as compared to their male counterparts.	No
Hypothesis Five	Higher levels of education will be associated with willingness to seek medical care for Alzheimer's disease.	No
Hypothesis Six	Ghanaian immigrants who have lived longer in the United States will be more willing to seek medical care for Alzheimer's disease.	No
Hypothesis Seven	Married people will be more willing to seek medical help for AD as compared to non-married people.	No
Hypothesis eight	People with children will be more willing to seek medical help for AD as compared to people with no children.	No
Hypothesis Nine	People with care giving experience (paid or unpaid) will be more willing to seek medical care for Alzheimer's disease.	No
Hypothesis Ten	Experience will account for a greater amount of variance in people's ability and willingness to seek medical help for AD than socio-demographics, knowledge, or perception.	No

or not statistically significant. All variables were tested with the dependent variable "Willingness to Seek Medical Help" (ATSPPHS).

Descriptive Statistics and Reliability Coefficients for ADKS, ATSPPHS, and CHBMS

Measures are shown on Table 12, 13, and 14.

Table 12. Descriptive Statistics for the ADKS Measure; N = 140

Measure	Number of items	Mean	Standard Deviation	N	Alpha (α)
ADKS	30	18.33	3.80	140	.58

Alpha (α) = Chronbach's internal-consistency reliability coefficients.

Table 13. Descriptive Statistics for the Willingness to Seek Medical Help Scale (ATSPPHS); N = 157

Measure	Number of Items	Mean	Standard Deviation	N	Alpha (α)
ATSPPH	7	12.38	3.80	157	.57

Alpha (α) = Chronbach's internal-consistency reliability coefficients.

Table 14. Descriptive Statistics for the Perceived Seriousness Scale (CHBMS); N = 152

Measure	Number of Items	Mean	Standard Deviation	N	Alpha (α)
CHBMS Perceived Seriousness	12	6.99	3.76	152	.88

Alpha (α) = Chronbach's internal-consistency reliability coefficients.

Chronbach's alpha was conducted to assess internal consistency and reliability for the Alzheimer's Disease Knowledge Scale (ADKS). Results indicated this measure had a high level of internal consistency and reliability ($\alpha = .58$) as reported in Table 12.

Chronbach's alpha was conducted to assess internal consistency and reliability for the Willingness to Seek Medical Help Scale (ATSPPHS). Results indicated that these

measures had a high level of internal consistency and reliability with an ($\alpha = .57$) on the ATSPPH index scale as reported in Table 13.

Chronbach's alpha was conducted to assess internal consistency and reliability for the Perceived Seriousness Scale (CHBMS). Results indicated that this measure had a high level of internal consistency and reliability with an alpha ($\alpha = .88$) on the CHBMS index scale as reported in Table 14.

Results Related to Hypothesis One

H1. A lower level of knowledge of Alzheimer's disease (AD) will be associated with a lower level of willingness to seek medical help for Alzheimer's disease.

This hypothesis was rejected. Descriptive statistics for Hypothesis One showed a mean of 12.38 and a standard deviation of 3.80 for the ADKS. A One-tailed Pearson correlation coefficient was used to test Hypothesis One to determine the strength of the linear relationship between level of knowledge and willingness to seek medical help for AD. Level of knowledge was not statistically significant ($r = -.07, p > .05$).

Response Related to Open Ended Questions

Participants were asked open ended questions in the survey about their knowledge of the cause and meaning of AD within the Ghanaian cultural context. "What do you believe is the cause of AD?" Participants reported "poverty, loneliness, or stress" and others reported that it is "caused by evil or unclean spirit". Few people reported that the cause is "unknown".

Participants were asked, “What specific cultural beliefs and ideologies about individuals with AD are characteristic of the Ghanaian culture?” Participants reported that “Individuals with AD within the Ghanaian community are being possessed by demonic or evil spirits”, “are cursed by God for evil or wrong doing of their families”, “Alzheimer’s disease is a punishment from God for something that person has done in the past”, “People with AD are accused of being victims of witchcraft, insane, and most people are taken to fetish priest or a church house for prayers”, “People with AD are seen as witches and wizards and are most often cast away from the larger society”, “AD is seen as an unclean illness and unacceptable to the Ghanaian society”, “People with this illness are either cursed, bewitched, or the work of evil spirit”, “AD is seen as something like a curse”, “AD is seen as satanic activities”, “People with this type of illness possesses satanic powers”, “in Ghana, it is believed that people with AD are insane and they have the disease because their ancestors or family members committed a crime and they are getting the punishment”, “Ghanaian communities see AD as an evil spirit that has been controlling that person and because of that they treat them bad”.

When asked, “What do you see as the most effective way to help individuals in the Ghanaian community dealing with AD?”, participants reported that education is needed within the community to enable them to better understand AD. Participants reported that educational activities such as bringing a representative to talk about the disease, signs and symptoms, and medical treatment will be helpful to the people in the community. “We need more education” was the response of most of the participants. This

is an indication that education is a very important factor in dealing with AD issues within the Ghanaian immigrant population. Results from the open ended questions indicated that participants reported having a minimal understanding about the cause and symptoms of AD, instead linking it to evil and unclean spirits. Participants reported that they will need a better understanding of AD in order to be able to answer the survey questions effectively.

Results Related to Hypothesis Two

H2. The perceived seriousness of Alzheimer's disease (AD) will be associated with willingness to seek medical help for AD.

This hypothesis was supported. Descriptive statistics for Hypothesis Two showed that participants scored near the scale mid-point ($M = 6.99$, $SD = 3.76$) on the perceived seriousness scale (CHBMS) as indicated on the descriptive statistic table above in Table 6. A one-tailed Pearson correlation coefficient was calculated to examine the correlation between willingness to seek medical help and perceived seriousness of AD. Perceived seriousness was statistically significant and positively related to willingness to seek medical help ($r = .26$, $p < .01$).

Results Related to Hypothesis Three

H3. The tendency to seek medical help for Alzheimer's disease will decrease with increasing Age.

This hypothesis was supported. Descriptive statistics for hypothesis three showed ($M = 56.01$, $SD = 10.24$) as indicated on the descriptive statistics table 5 above. Since

this variable was among the ones that were skewed, the Spearman rank correlations coefficient was used to examine the association between age and willingness to seek medical help. Age was positively associated with willingness seek medical help ($p = .22$, $p < 01$).

Results Related to Hypothesis Four

H4. Females will be more willing to seek medical care for Alzheimer's disease (AD) as compared to their male counterparts.

This hypothesis was rejected. Descriptive statistics indicated that 47% of participants were males and 53% were females ($M = 1.53$, $SD = 0.50$). A one-tailed Pearson correlation coefficient was calculated to examine the relation between gender and willingness to seek medical help. Gender was not associated with willingness to seek medical help ($r = .109$, $p > .05$). An examination of the descriptive statistics showed similarities in both males and females in terms of willingness to seek medical help for AD ($M = 11.92$, $SD = 3.65$, $n = 73$) for males; ($M = 12.74$, $SD = 3.912$, $n = 82$) for females. This shows that both (males / females) perceive AD to be a more serious medical illness and are willing to seek medical help when presented with the right information. Therefore, it can be concluded that gender has no association with the willingness to seek medical care for AD. The graph in Figure 2 shows male and female participants and their willingness to seek medical help for AD. (On the graph below, 1= male and 2 = females).

Results Related to Hypothesis Five

H5. Higher levels of education will be associated with willingness to seek medical help for Alzheimer's disease (AD). This hypothesis was rejected. Descriptive statistics

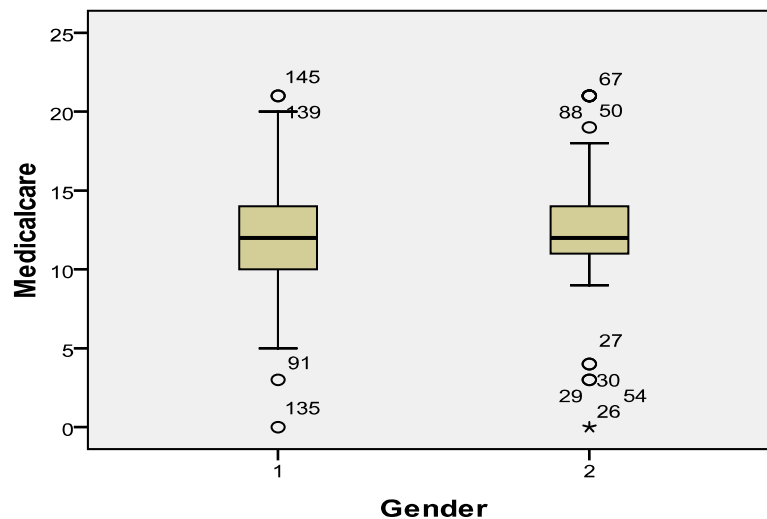


Figure 2. Gender and Willingness to Seek Medical Help for AD.

indicated that 60% of participants had formal education with some college degree or higher, while 27% had high school education ,and 12% held less than a high school diploma, with an overall ($M = 2.80$, $SD = 1.02$). The graph in Figure 3 is a useful tool to visualize the educational level differences of study participants (1= less than high school, 2 = high school diploma, 3= some college or vocational school, 4= college or higher). The figure indicates that the means of willingness to seek medical help for AD were similar for education level. A one-tailed Person correlation coefficient was calculated to examine the relation between level of education and willingness to seek medical help.

The level of education groups were not associated with willingness seek medical help ($r = .075, p > .05$). An examination of the descriptive statistics showed similarities in all levels of education and less than high school participants; ($M = 12.67, SD = 3.44, n = 42$)

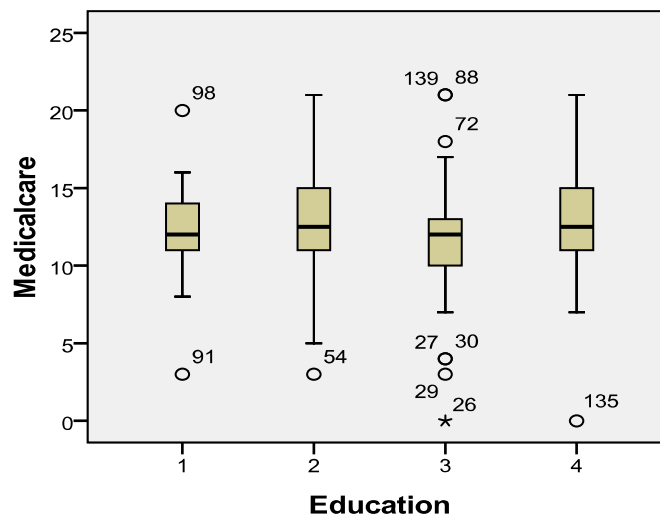


Figure 3: Educational Level and Willingness to Seek Medical Help

for participants with high school diplomas; ($M = 11.42, SD = 3.93, n = 45$) for participants with some college degree; and ($M = 13.12, SD = 3.99, n = 50$). Therefore, it can be concluded that level of education has no statistically significant relation to willingness to seek medical help.

Results Related to Hypothesis Six

H6. Ghanaian immigrants who have lived longer in the United States will be more willing to seek medical help for Alzheimer's disease (AD).

This hypothesis was rejected. Descriptive statistics indicated that 73.6% of participants had lived in the United States for six or more years, 11.7% for three to five years, 8.6% two years or more, and 5% for six months to one year ($M = 4.04$, $SD = 1.55$). Since this variable was among the ones that were skewed, the Spearman rank correlations coefficient was used to examine the relationship between years of migration and willingness to seek medical help. Years of migration in groups was not related to willingness to seek medical help for AD ($r = -.135$, $p > .05$). An examination of the descriptive statistics showed similarities in all years of migration and willingness to seek medical help for AD, with a ($M = 11.71$, $SD = 5.58$, $n = 8$) for participants with six month to one year stay, ($M = 13.23$, $SD = 4.45$, $n = 14$) participants who with two years stay, ($M = 12.58$, $SD = 4.07$, $n = 19$) for participants with three to five years stay, ($M = 12.70$, $SD = 4.08$, $n = 45$) for participants with six to ten years stay, ($M = 12.05$, $SD = 3.81$, $n = 75$). The graph in Figure 4 is a useful tool to visualize the differences in years of migration and willingness to seek medical help. The figure indicates that the means of willingness to seek medical help for AD were similar to years of migration. (1 = Six months to one year, 2 = Two years, 3 = Three to five years, 4 = Six to ten years, 5 = Eleven years or more).

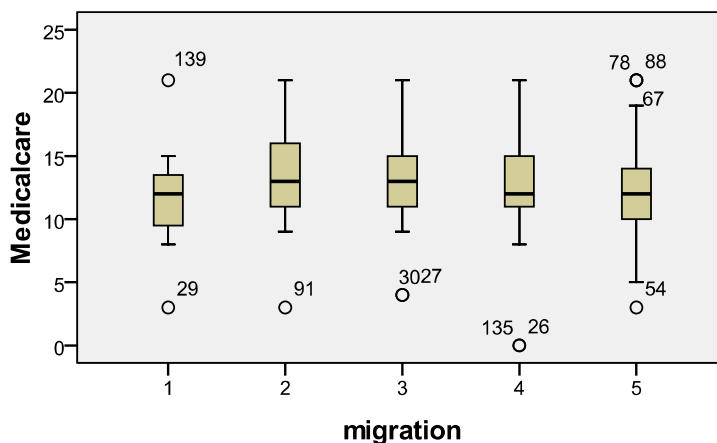


Figure 4 Years since Migration and Willingness to Seek Medical Help

Results Related to Hypothesis Seven

H7. Married people will be more willing to seek medical help for AD as compared to non-married people.

This hypothesis was rejected. Descriptive statistics indicated that 64 % of participants were married and 36% never married ($M = 0.5$, $SD = 0.70$). Marital status was grouped into two categories for the data analysis as married versus not married. A one-tailed Pearson correlation coefficient was used to examine the correlation between marital status and willingness to seek medical help for AD. Marital status was not related to willingness to seek medical help with ($r = .067$, $p > .05$). The graph in Figure 5 is useful to visualize the relationship between marital status (Married and Non-Married) and willingness to seek medical help. The figure indicates that the means of willingness to seek medical help for AD were similar for both groups.

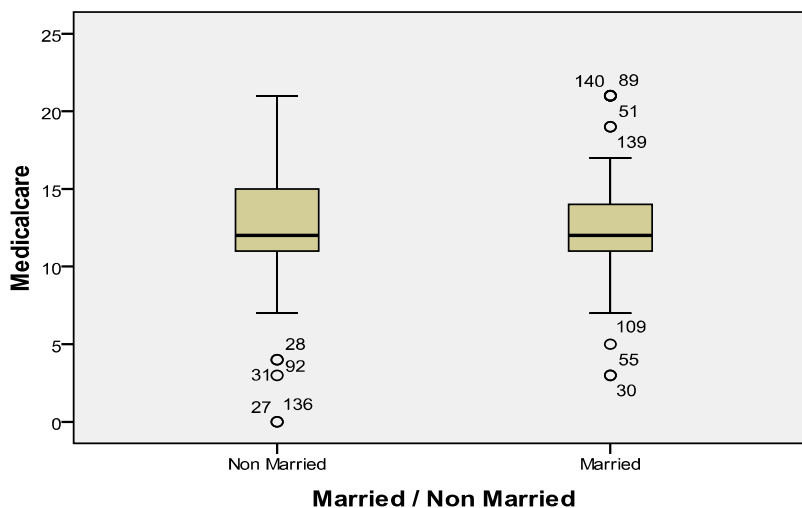


Figure 5: Marital Status and Willingness to Seek Medical Help

An examination of the descriptive statistics showed similarities in both groups with respect to their willingness to seek medical help. Married participants ($M = 12.49$, $SD = 3.36$, $n = 103$) and non-married participants ($M = 12.19$, $SD = 4.59$, $n = 53$) were similar in terms of their willingness to seek medical help. Both married and non-married respondents indicated approximately equal strength of willingness to seek medical help for AD.

Results Related to Hypothesis Eight

H8. People with children will be more willing to seek medical help for AD as compared to people with no children.

This hypothesis was rejected. Descriptive statistics indicated the maximum number of children per subject was 12 with 0 being the minimum with an overall ($M = 6.0$, $SD = 8.48$). Since this variable was among the ones that were skewed, the Spearman rank correlations coefficient was used to examine the relationship between number of

children per study participant and willingness to seek medical help. Number of children (categorical) was not associated with willingness seek medical help ($r = -.021, p > .05$). An examination of the descriptive statistics showed similarities with all participants who have children as well as those who do not have children. The data suggests that the number of children had no statistically significant relation to willingness to seek medical help for AD. The graph in Figure 6 is a useful tool to visualize the number of children per study participant and how it relates to willingness to seek medical help (0 = no children; 1-12 = the number of children per participant). The figure indicates that the means of willingness to seek medical help for AD were similar for all participants whether they had children or none.

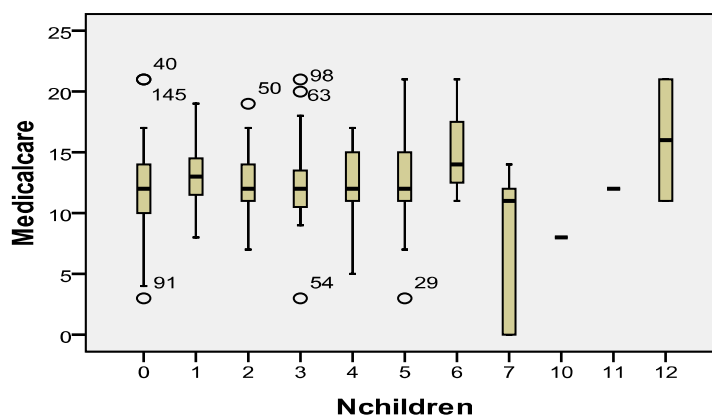


Figure 6: Number of Children and Willingness to Seek Medical Help.

Results Related to Hypothesis Nine

H9. People with care giving experience (paid or unpaid) will be more willing to seek medical care for Alzheimer's disease.

This hypothesis was rejected. Descriptive statistics indicated that 125 participants had no experience in caregiving for AD compared to 32 participants with AD experience ($M = .08, SD = .404$). Experiences were grouped into two categories of yes and no responses. Since this variable was measuring caregiving experiences for AD, the rationale used to define the variable was that if any of the questions in the instrument measuring experiences was “yes”, the variable was coded as “1,” otherwise a value of “0” was assigned. A one-tailed Pearson correlation coefficient was calculated to examine the relationship between experience groups and willingness to seek medical help. Experience was not associated with willingness to seek medical help ($r = .067, p > .05$). An examination of descriptive statistics indicates that both groups were similar on willingness to seek medical help ($M = 13.25, SD = 3.52, N = 125$) for participants with no caregiving experience and ($M = 12.18, SD = 3.84, n = 32$) for participants with caregiving experience. It can also be concluded that exposure to someone with AD has no influence on willingness to seek medical help. The graph in Figure 7 shows groups of participants with caregiving experience and no caregiving experience and their willingness to seek medical help for AD. (“No experience” is indicated as “no” and “with experience” is indicated as “yes”).

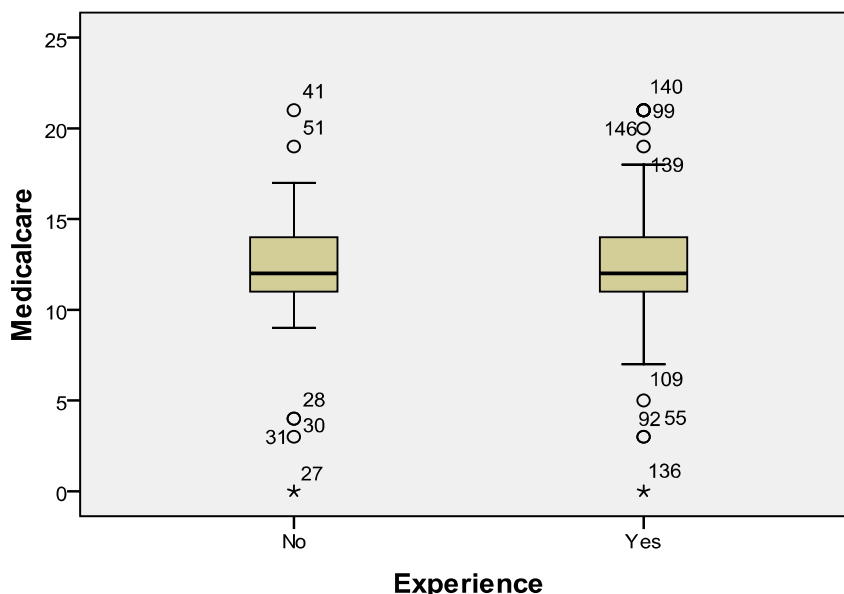


Figure 7. Experiences and Willingness to Seek Medical Help

Results Related to Hypothesis Ten

When independent variables are correlated in a regression equation, multicollinearity is likely to occur. This can be very problematic, as it decreases the power of significance tested by increasing the sampling error of coefficients and can also cause the direction of correlation coefficients to be incorrect. Large changes can appear in calculations of coefficients even with the removal of a single observation (Burns & Grove, 1993). Multicollinearity is said to occur when variables are so highly correlated with each other that it is difficult to come up with reliable estimates of their individual regression coefficient. Performing a correlation analysis is one way to assess multicollinearity, and a correlation matrix with correlations of .75 or higher among the

tested variables, may indicate multicollinearity (Tabachnick & Fidell, 2007). Table 15 shows the correlation matrix generated for all variables in the study.

Table 15. Intercorrelations Among Independent Variables in the Study using Pearson and Spearman Correlation.

		ADKS	CHBMS	Age	Gender	Education	Years of Migration	Married / Non Married	Number of children	Experience
ADKS	Pearson Correlation	1	.273	.133	.118	.036	.021	-.067	.225	-.170
	Sig. (1-tailed)	---	.001*	.064	.084	.338	.401	.217	.004*	.024
	N	140	131	133	137	138	139	139	137	135
CHBMS	Pearson Correlation	.273	1	.026	.125	.062	.051	.113	.081	-.138
	Sig. (1-tailed)	.001*	---	.380	.064	.226	.266	.084	.163	.049*
	N	131	152	144	149	150	151	151	149	145
Age	Spearman's rho	.001	.026	1	.095	.081	-.059	-.120	.001	-.065
	Sig. (1-tailed)	---	.380	---	.120	.158	.233	.070	.499	.217
	N	154	144	154	154	154	154	154	154	147
Gender	Pearson Correlation	.118	.125	.095	1	-.148	-.128	-.122	-.050	-.483
	Sig. (1-tailed)	.084	.064	.120	---	.031*	.054	.063	.269	.001*
	N	137	149	154	159	159	159	159	157	152
Education	Pearson Correlation	.036	.062	.081	-.148	1	.227	.100	.051	.031
	Sig. (1-tailed)	.338	.226	.158	.031*	---	.002*	.104	.262	.352
	N	138	150	154	159	160	160	160	158	153
Years since Migration	Spearman's rho	.021	.051	-.059	-.128	.227**	1.000	.182	.266**	.118
	Sig. (1-tailed)	.401	.266	.233	.054	.002*	.	.011*	.001	.072

	N	139	151	154	159	160	161	161	159	154
Married / Non Married	Pearson Correlation	-.067	.113	-.120	-.122	.100	.182	1	.040	.142
	Sig. (1-tailed)	.217	.084	.070	.063	.104	.011*	---	.306	.039*
	N	139	151	154	159	160	161	162	160	155
Number of children	Spearman's rho	.225	.081	.000	-.050	.051	.266**	.040	1	.127
	Sig. (1-tailed)	.004*	.163	.499	.269	.262**	.000	.306	---	.059
	N	137	149	154	157	158	159	160	160	153
Experience	Pearson Correlation	-.170	-.138	-.065	-.483	.031	.118	.142	.127	1
	Sig. (1-tailed)	.024*	.049*	.217	.001*	.352	.072	.039*	.059	---
	N	135	145	147	152	153	154	155	153	157

1= ADKS (Alzheimer's Disease Knowledge Scale), 2 = CHBMS (Champions Health Belief Model Scale), 3 = Age, 4 Gender, 5 = Education, 5= Years of Migration, 7 = Marital Status, 8 = Number of Children, 9 = Experience. *Correlation is significant at 0.01 levels (1-tailed).

The Pearson correlation coefficients showed a high correlation between gender and experience ($r = -.483, p < .05$); therefore further analysis was conducted to test multicollinearity. Multicollinearity was assessed by examining tolerance and the variance inflation factor (VIF). Table 16 shows the collinearity statistics for the variables in the study. Tolerance is an indication of the percent of variance in the predictor that cannot be accounted for by the other predictors; hence very small values indicate that a predictor is redundant, so values that are less than .10 may merit further investigation.

The VIF (variance inflation factor) value is $(1/\text{tolerance})$ and as a rule of thumb, a variable in the model whose VIF value is greater than 10 may merit further investigation (Tabachnick & Fidell, 2007). The VIF for the variables in the model were lower than 5, indicating that multicollinearity would not be an issue in the regression analysis. Gender showed a VIF score of 1.365 and a tolerance of .732 while experience showed a VIF score of 1.383 and a tolerance of .723. Although the tolerance was suggestive of multicollinearity, the VIF provided a basis for including both gender and experience in the regression equation to assess the variance contributed by each. Hypothesis ten was not supported by this study. A multiple linear regression analysis was performed to assess whether experience or the other variables socio-demographics (age, gender, education years of migration, marital status), knowledge, or perceptions accounted for the, greater part of variance in the analysis. The dependent variable for the regression was willingness to seek medical help and the independent variables were socio- demographics (age, gender, education, years of migration, marital status), knowledge, perceptions, and experiences. Tables 17 list the descriptive coefficients of the independent variables in the study.

A hierarchical regression analysis was performed with all the demographic variables forced to enter in block one, while the ADKS, CHBMS, and experience scales were allowed to enter into the second block through the stepwise method. The model summary for the regression is presented below.

Table 16. Collinearity Statistics

Model		Collinearity Statistics	
		Tolerance	VIF
1	Age	.946	1.057
	Gender	.928	1.077
	Education	.942	1.061
	Years since migration	.897	1.114
	Married / Non Married	.961	1.041
	Number of children	.919	1.088
	2	Age	.945
Gender		.732	1.365
Education		.941	1.063
Years since migration		.892	1.121
Married / Non Married		.950	1.053
Number of children		.909	1.100
Experience		.723	1.383

Table 17: Descriptive Coefficients of the Independent Variable

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.357	2.731		1.595	.114
	Age	.107	.032	.300	3.328	.001
	Gender	.810	.663	.111	1.222	.224
	Education	.604	.334	.163	1.808	.073
	Years of Migration	-.336	.283	-.110	-1.189	.237
	Married / Non Married	.138	.171	.072	.806	.422
	Number of children	-.073	.138	-.049	-.532	.596
2	(Constant)	1.890	2.884		.655	.514
	Age	.109	.031	.306	3.463	.001
	Gender	1.588	.732	.218	2.168	.032
	Education	.574	.328	.155	1.753	.082
	Years of Migration	-.387	.278	-.127	-1.390	.167
	Married / Non Married	.096	.169	.050	.567	.572
	Number of children	-.107	.136	-.071	-.785	.434
	Experience	2.116	.916	.234	2.311	.023

Dependent Variable: Willingness to Seek Medical Help for AD (ATSPPHS).

The independent variables accounted for 18.7% of the variance in seeking medical help, with R^2 of .148 and adjusted R^2 of .102 for model one and R^2 of .187 and adjusted R^2 of .135 for model two. The F-ratio for the model one was 3.21 and was statistically significant at an alpha of .05 ($p = .006$). The F-ratio for the model two was 3.618 and was statistically significant at alpha .05 ($p = .002$).

ADKS and CHBMS were not statistically significant ($p > .05$) and hence were not included in the model for this block employing the stepwise approach. The model summary presented in Table 18 shows the variables that were not included in the two models. Among all the tested variables, only age, gender, and experience were statistically significant ($p < .05$). Therefore, the assumption that experience accounted for a greater amount of variance in willingness to seek medical help as compared to the socio-demographics, perception, and knowledge variables was not supported. Age accounted for more variance, with ($B = .306; p < .01$) as compared to experience ($B = .234; p < .05$).

The residual analysis was taken a step further to test the plot for normality. Table 19 shows the tests of normality, including the Kolmogorov-Smirnov statistic with Lilliefors significance correlation level. Since the sample size is less than 200, the Shapiro-Wilk W test is appropriate. The level of significance does not support the normality of the residuals. We must reject the null hypothesis that the residuals are normally distributed. If the sample size is small, it may be difficult to detect assumption violations. Also, one of the ways of dealing with normality is to log transform the data. Since some of the variables have a value 0, log transformation would result in a reduction of the sample size available for the data analysis. Figure 8 shows the residual plot for the regression equation.

Table 18: Excluded Variables

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics		
						Tolerance	VIF	Minimum Tolerance
1	ADKS	-.130 ^a	-1.417	.159	-.134	.901	1.109	.851
	CHBMS	.125 ^a	1.412	.161	.133	.972	1.029	.897
	Experience	.234 ^a	2.311	.023	.215	.723	1.383	.723
2	ADKS	-.091 ^b	-.979	.330	-.093	.862	1.159	.692
	CHBMS	.152 ^b	1.746	.084	.165	.957	1.045	.712

A..Predictors in the Model: (Constant), Married / Non Married, Education, Number of children, Age, Gender, Years since Migration. B. Dependent Variable: ADKS.

Table 19: Test for Normality of the Residual Analysis.

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Unstandardized Residual	.079	150	.029	.968	150	.002

A. Lilliefors Significance Correction

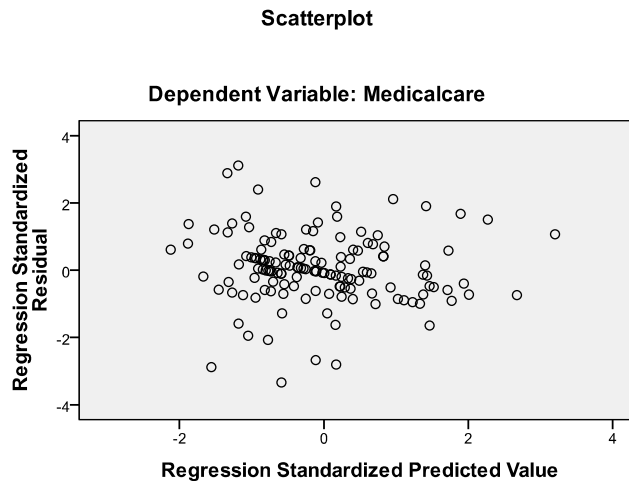


Figure 8. Residual Plot for the Regression Equation.

Summary

The study examined 163 Ghanaian immigrants to evaluate factors affecting the willingness to seek medical help for AD. The gender distribution of the study sample was balanced and about half of the sample had lived in the USA for 11 years or more. There were a total of 10 hypotheses tested in the study. The hypotheses looked at the relation between the willingness to seek medical help and AD knowledge, perceived seriousness of AD, age, gender, level of education, years since migration, marital status, number of children, and caregiving experience. Perceived seriousness and age were associated with Willingness to seek medical help. AD knowledge and gender did not have a statistically significant association with the willingness to seek medical help. Level of education, years since migration in the USA, marital status, number of children, and caregiving experience did not have any association with willingness to seek medical help. The multiple regression model results did not indicate that experience accounted for a greater amount of variance in the willingness to seek medical help than the other predictors tested. Instead, **age** accounted for the greatest amount of variance, and **gender** was also predictive, contributing statistically significant variance to the resulting regression solution.

CHAPTER FIVE: DISCUSSION AND LIMITATION

Introduction

This chapter presents a summary of the study and important conclusions drawn from the data. It discusses study results, participant responses to the open ended questions, relationship to HBM, limitations, the implications for further actions, and recommendations for future research.

Study Summary

Limited understanding and cultural beliefs about Alzheimer's disease (AD) prevent Ghanaian immigrants (GI) on willingness to seek medical help. Research with minority groups on disease understanding focuses on the decision process in seeking care for an illness for older adults (Blazer & Houpt 1979; Levkoff et al., 1987, 1988). Ethnic minority elders constitute a growing portion of the older Ghanaian immigrant population (Baker 1992), yet little is known about how help seeking and decision making during illness are undertaken by this group. Currently, no research has been conducted on Ghanaian immigrants seeking medical help for AD in the United States. Prior studies mainly focused on whites, African Americans, and/or Hispanics (Lee, Lee, & Divan 2010).

This study examined the relationship of knowledge, perception, socio-demographic (age, gender, education, years since migration, marital status, and number of children) and experience on willingness to seek medical help for AD among GI in the United States. Study participants were 200 Ghanaian immigrants between the ages of 45 and above attended the selected Ghanaian community churches in Virginia and Maryland, met the inclusion criteria, and volunteered to participate. Participants completed four survey instruments: The Alzheimer's Disease Knowledge Scale (ADKS) (Carpenter, Balsis, Otilingam, Hanson and Gatz, 2009); the Champion Health Belief Model Scale (CHBMS), (Victoria Champion, 1984); the Attitude Toward Seeking Professional Psychological Help (ATSPPHS) (Fischer and Farina 1995); Caregiving versus non-caregiving experiences and a demographic form.

Knowledge of AD and Willingness to Seek Medical Help

In this study, participants reported minimal knowledge of AD. An interesting finding was that knowledge was not statistically significant with willingness to seek medical help; however, there was a significant correlation between ADKS and CHBM ($r = .273, p < .05$). It is likely that knowledge did not correlate with willingness to seek medical help because participants were not familiar with AD. Participants attributed symptoms of AD to "evil or unclean spirits, witchcraft, family curses, a punishment from God to the individual and his/her family, insanity, or unknown" as reported in the open ended questions.

Participants had different views about AD from the mainstream culture. This may be due to lack of understanding of the presenting symptoms and the origin of the disease. There was some confusion among participants about knowledge and understanding of AD. The difference between knowledge and understanding is that understanding relates to the acceptance of the biomedical model, while knowledge is more related to the fact that the cause is unknown. The main issue in this study was lack of understanding of AD causing participants to attribute symptoms to other cultural beliefs as mentioned above. The importance of recognition of the symptoms of AD within the community is important and critical for early diagnosis. Likewise, understanding of AD is essential for a health caring environment and for seeking medical help (Adamson, 2001). Better educational interventions will enhance a better understanding of AD. During the 1980s, several theories of behavioral change that guided educational programs (e.g., Ajzen & Fishbein, 1980; Bandura, 1986) helped to identify and explain the complex relationships between knowledge, beliefs, and perceived social norms. Educational programs to increase both knowledge and understanding of AD among GI populations will be more successful if these aspects are considered as part of the program design.

Existing studies reveal variations in areas of AD knowledge across racial and ethnic groups. While a normative view of memory loss exists across different racial and ethnic groups (Barrett et al, 1997; Connell, 1996; Roberts & Connell, 2000), a stigmatized perception of AD as insanity is prominent in some ethnic minorities (Ayalon & Arena, 2004). Participants reported that in Ghana, the first response to helping someone with AD is to consult a fetish priest or a spiritual leader in the church. This is

not surprising since traditional beliefs play a major role in the Ghanaian health system. Responses from the open ended questions show that Ghanaian immigrants in the United States continue to hold on to their cultural beliefs and heritage despite living in the U.S. Future studies should address acculturation and willingness to seek medical help by addressing cultural differences in relations to help seeking behaviors. This can be done by looking at how cultural beliefs impact willingness to seek medical help from the mainstream culture. Future studies should also highlight the importance of AD awareness and emphasize the importance of the provision of clear information regarding AD for clinicians within minority cultures.

Perceived Seriousness of AD and Willingness to Seek Medical Help

Hypothesis Two showed that AD is perceived as a serious disease and the perceived seriousness was statistically significant and positively related to willingness to seek medical help ($r = .26, p < .01$). Perceived risk is an important predictor of the reactions and outcome of genetic counseling. It affects disease-specific worry (Prince et al. 1997), coping (Gooding et al. 2006; McAllister 2003), and engagement in health behavior such as cancer screening and preventative therapy (Katapodi et al., 2004; Marteau & Weinman 2006; Matloff et al., 2006). Perceived seriousness of a specific illness can influence seeking medical help (Meiser et al., 2001).

Levkoff et al., (1999) reported that ethnicity is likely to play an important part in caregivers' perception about AD. Ethnicity is defined as a set of local cultural resources available for the construction of individual identity and developing behavior. According to one prominent model of health stress and coping (Leventhal et al., 1997), perception of

disorder symptoms, causes, and controllability are key aspects of illness representation, as well as being schemas that organize and shape response to medical difficulties (Roberts et al., 2003). It was evident that AD is perceived to be a serious disease since participants reported that AD patients are often taken to a fetish priest or church leader for spiritual healing.

Several studies have shown ethnic elders to identify strongly with religion and to use prayers and other private activities for coping with stress. For members of ethnic minority groups, religious identification can be an integral part of ethnic identification. Therefore, in examining the help seeking of ethnic minority caregivers, it seems important to not only identify culturally-derived perceptions about AD and the help seeking process, but to also evaluate how religious perceptions shape thoughts and actions (Levkoff, Levy, & Weitzman, 1999). Future studies should address religious beliefs and willingness to seek medical help.

There was a negative correlation between CHBM scale and experience ($r = -.138$). This might have obscured the predictive power of the CHBM scale preventing it from emerging as significant in the regression equation. It can also be concluded that experience influenced the CHBM scale in the opposite direction thus preventing it from appearing as a significant relation. Future studies should look at the measuring scale of perceived seriousness when testing it along with other variables. It appeared that other variables such as age and experience were stronger predictors than perceived seriousness.

Perceived seriousness was significantly related to willingness to seek medical help even though participants had minimal knowledge about AD. It confirms the

importance of cultural beliefs and practices. It is evident that Ghanaian immigrants' cultural beliefs are maintained as part of holding onto their cultural identity despite living in Western society. In their native country, the beliefs about AD and the supernatural are real because people have nowhere to seek assistance. Resources are not there and without adequate resources and choices, there is no reason to alter beliefs and ways of life. This has carried on with Ghanaian immigrants in the U.S and they continue to operate in the same belief system.

Education and resources are both important to countering deficits in knowledge and health beliefs. Adamson (2001) interviewed 30 South Asian and African Caribbean caregivers of people with dementia who reported that their understanding was low until it was developed by direct experiences with a relative. The study found differences in terminology and limited knowledge of the condition and its causes. It highlighted the importance of raising dementia awareness. This is because difficulties can arise in the caring relationship due to a lack of understanding of dementia, particularly when family members place blame for the symptoms on the person with the disease. The authors concluded that the need to counterbalance the approach to modifying knowledge deficits and health beliefs is important when dealing with people from minority culture.

According to the Center for Health Care Strategies (2010), by 2050, almost half of the U.S population will be non-white. Health care providers must recognize the cultural beliefs, practices, and linguistic differences of all patients or risk poor health outcomes. Understanding that cultural beliefs and literacy play an important role in the health care system is essential to addressing communication problems. The U.S. Office of

Minority Health offers the following definition of cultural and linguistic competence in the provisions of health care: “Cultural and linguistic competence is a set of congruent behaviors, attitude, and policies that comes together in a system, agency, or among professionals that enables effective work in cross-cultural situations.” In other words, cultural and linguistic competence is the ability of health care stakeholders to effectively address the language and cultural needs of consumers. Based on this information, future studies should tailor their educational message to incorporate the audience’s beliefs and values. Also, it is important for the researcher to collaborate with other organizations, such as the Alzheimer’s Association, to develop targeted materials appropriate for ethnic minority groups.

Socio-demographic Variables and Willingness to Seek Medical Help

Among all the socio-demographic variables tested individually for their relationship with willingness to seek medical help, age was statistically significant. On average, gender, education, marital status, number of children, and years since migration in the U.S had no relation with willingness to seek medical help for AD. Gender and experience emerged as statistically significant from the regression analysis; however, it was not preceded by a statistically significant correlation when tested as individual variables. Future studies should use a different level of measurement for gender and experience to be able to get a better result when testing both independently and with other variables. Experience can be tested as a continuous variable in future studies. It is also important to note that socio-economic status is an important variable that was not included but could certainly be a confounded by this study. Future studies should use

socio-economic factors as one of the variables and test its relation with willingness to seek medical help.

Age and Willingness to Seek Medical Help

Age was positively associated with willingness seek medical help ($\rho = .22, p < .01$). Lundodervold and Young (1992) created a non-standardized measure of attitude about mental health care and surveyed adults fifty years and over. Their findings suggest that older adults generally had negative attitudes about mental health services. Currin, Hayslip and Kooken (1998) used a cohort design with 14 year interval between assessments and found that younger adults have a positive attitude toward seeking help for mental illness as compared to older adults.

Robb, Haley, Becker, Poliva and Chwa (2003), reported their finding from a survey about attitudes toward mental health care for younger and older adults. Surprisingly, there were more similarities than differences between the age groups. However, the differences between the groups were notable. Older adults reported being less confident and knowledgeable about mental health issues, the types of appropriate treatment, and when to seek professional help compared to younger adults.

Segal, Coolidge, Mincic, and O'Riley (2005) compared knowledge and beliefs about mental illness and its impact on help seeking behavior between younger and older adults. It was hypothesized that older adults would have more negative perceptions of mental illness and lower willingness to seek help compared to younger adults. Also, increased negative views about mental illness would be associated with decreased

willingness to seek help among older adults. The results showed that younger adults are more willing to seek mental health services compare to older adults. These results did not support the finding of this study that the tendency to seek medical help for Alzheimer's disease will increase with increasing age. Future studies should further investigate this finding in light of the contradictory findings.

Gender and Willingness to Seek Medical Help

The hypothesis on gender and willingness to seek medical help was not supported. Gender was not associated with willingness to seek medical help ($r = .109, p < .05$) Wu, Goins, Laditka, Ignatenko, and Goedereis, (2009) report that women and men differ in views about a variety of disease causes and treatments. Additionally, Takeuch, Zane, Hong, Gong, Gee, et al., (2007) found that the relationship between immigrant-related factors, such as status, language proficiency, mental illness, and their willingness to seek medical attention was different for men and women. The results support prior research which states that men and women have different views on willingness to seek medical help. Gender was not statistically significant when tested as a single variable however emerged in the regression equation when tested with other variables as statistically significant.

Education Level and Willingness to Seek Medical Help

The hypothesis on education level and willingness to seek medical help was not supported. Level of education was not associated with willingness to seek medical help ($r = .075, p > .05$). According to the National Network of Libraries of Medicine, health literacy varies by context and setting. It is the degree to which individuals have the

capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions. Health literacy includes the ability to read and understand instructions. This requires reading, listening, analytical, and decision making skills; and the ability to apply these skills in health situations

(<http://www.healthypeople.gov>). A person who functions adequately at home or work may have marginal or inadequate literacy in a health care environment.

It was evident that most participants had higher levels of education with college degrees or higher (31.3%), some college or vocational school (28.2%), high school diploma (26.4%), and less than high school (12.3%), but reported minimal knowledge of AD. This finding was not surprising because regardless of the educational level of the participants, the context of health literacy on a particular illness is not understood within the Ghanaian immigrant community. Gray et al.,(2009) reported that family members require education and knowledge about the nature and course of dementia, available treatment, and services to cope effectively with their situation.

Ethnic minority families may lack the necessary information or may hold on to culturally influenced beliefs about dementias that can delay necessary help seeking. Unfortunately, the increased understanding of dementia resulting from medical and scientific advances is not commonly held among various ethnic minority groups. It can be concluded that Ghanaian education does not interfere with cultural beliefs regardless of level of education. Therefore, health literacy is a stronger predictor of why this hypothesis was rejected.

It appears that health literacy is more important than level of education when measuring willingness to seek medical help. Healthy People 2010, a national strategic plan for disease prevention and wellness, has identified health literacy as a high priority area for national improvement of health and wellness (USDHHS, 2000). Health literacy refers to the degree to which individuals have the capacity to obtain, process, and understand information and services needed to make appropriate health decisions (Powell, Hill, & Clancy 2007). The difference between low health literacy and knowledge is that people with low health literacy should be directly questioned about the degree of involvement they desire in seeking information about AD. This will enable clinicians to better serve people in this community. Low health literacy is associated with poor disease-related knowledge and self-management strategies, worse self-reported health status, poor adherence with treatment, a 30% to 50% increase risk of hospitalization, and higher annual health care costs (Powell, Hill, & Clancy 2007). Future studies should continue to address the relation between health literacy and seeking medical help among ethnic minority cultures.

Marital Status and Willingness to Seek Medical Help

The hypothesis on marital status and willingness to seek medical help was not supported. Marital status was not related to willingness to seek medical help ($r = .067$, $p > .05$). There is little literature to support this finding. Future studies should address the number of years by marriage and its relations on willingness to seek medical help by using a more complex categorical variable than the dichotomous variable employed here (i.e., married vs. unmarried).

Number of Children and Willingness to Seek Medical Help

The hypothesis on number of children and willingness to seek medical help was not supported. Number of children was not associated with willingness to seek medical help ($r = -.021, p > .05$). There is little literature to support this finding. Futures studies should address parental relations on willingness to seek medical help by assessing the impact of the parent-child relationship on willingness to seek medical help.

Years since Migration and Willingness to Seek Medical Help

The hypothesis on years since migration and willingness to seek medical help was not supported. Years since migration was not related to willingness to seek medical help ($r = -.135, p > .05$). The result was surprising in that acculturation and assimilation appears to have no association on cultural beliefs and ideologies and willingness to seek seeking medical help. For immigrants living in both their native culture and in American culture, level of acculturation can play a role in understanding a disease and explaining health behaviors.

Although it is assumed that more acculturated individuals have greater access to sources of mainstream information, including disease information, and they are more knowledgeable about Western biomedical aspects of AD, little evidence is currently available to support this assumption (Lee, Lee & Diwan, 2010). The results may show that participants continue to hold on to cultural ideologies and practices concerning AD and treatment modalities from Ghana even though they have migrated to the United States. They have not learned the mainstream culture and therefore are not willing to seek medical help regardless of years since migration.

It is reported that immigrants tend to focus on surviving and are often working. Due to pressure from family back home, they spend most of their time at work and often disregard seeking medical attention for health problems, unless it has a high potential to cause death. Many immigrants who come to the U.S. end up working in jobs that do not provide health coverage. The absence of health insurance coverage at a younger age may negatively affect a person's physical and mental health in old age, thus limiting their ability to seek medical help (Lum & Vanderaa). Based on the finding from this study, it is important to note that the Ghanaian immigrant churches can be used as a place to start educational initiatives to demystify the perception about AD. While future studies should look at the degree of acculturation and assimilation on willingness to seek medical help since these two variables may serve as better predictors, it is also important to start some educational initiatives by visiting these churches to educate them about medical health care from the mainstream culture.

Research shows that the Alzheimer's Association has started these initiatives by targeting people from different minority groups and hosting annual educational symposia across the country (Alzheimer's Association, 2010). Researchers should connect with the Alzheimer's Association and ensure that such educational symposia are working through the churches and targeting the Ghanaian immigrant community.

AD Experiences and Willingness to Seek Medical Help.

The hypothesis on caregiving experience versus no experience and its relations on willingness to seek medical help was not supported. Experience was not associated with willingness to seek medical help ($r = .067, p > .05$). The study indicated that the 125

participants who had no caregiving experience and the 32 participants with caregiving experience were willing to seek medical help. Previous studies reported that knowing persons with AD and caregivers for those with AD was significantly related to greater knowledge of AD (Prince, Prince, Shanahan & Desmond, 1986; Steckenrider, 1993). However, this study did not support this finding. The experience variable appeared in the regression equation when tested among other variables as statistically significant and was not statically significant when test as a single variable. It appeared that experience was a stronger predictor when tested along with the other variables and precluded their emergence in the regression. Future studies should look at the caregiving experience measure as a continuous variable instead of a dichotomous variable since a continuous variable may serve as a better predictor.

Experiences and Other Variables.

The hypothesis that experience would account for a greater amount of variance as compared to the socio-demographic variables knowledge and perception was not supported. Among all the tested variables, only age, gender, and experience were statistically significant ($p < .05$). A hierarchical regression analysis was performed with all the demographic variables forced to enter in block one and the ADKS, CHBMS, and experience scale allowed to enter into the second block through the stepwise method. The independent variables collectively accounted for 18.7% of variance in seeking medical help. A comparison of beta weights allowed for a determination of whether experience was the best predictor of willingness to seek medical help. The comparison showed age accounted for more variance ($B = .30; p < .01$) compared to experience ($B = .23; p < .05$)

and gender ($B = .22; p < .05$). Since only a small proportion of the variance was explained in the equation, further studies should be done to validate these results before design intervention. It is possible that testing caregiving experience as a dichotomous variable was a confounding factor in these results. Testing the caregiving experience variable as a continuous variable would be helpful in future studies.

Interestingly enough, perceived seriousness (CHBMS) also did not emerge in the regression equation, however showed a statistically significant result when tested alone. There was a negative correlation between CHBMS and experience ($r = -.138, p < .05$). This relation might have obscured the predictive power of the perceived seriousness scale and prevented a significant result in the regression analysis. This would suggest that further piloting on the perceived seriousness scale and redefining the tool should be done. This may offer more sensitive scale to measure perceptions and willingness to seek medical help. Gender also emerged in the regression equation as a statistically significant variable however it was not significant when tested alone. Gender was also a strong predictor when tested with the other variables. It is also fair to say that as indicated during the collinearity testing with experience, when gender was forced into the regression, the variance available to be accounted for by experience was insufficient to allow it to emerge as the strongest predictor.

Participants Responses on Open Ended Questions

This study revealed that participants within the GI community have minimal understanding of AD. They understand AD to be associated with spiritual and demonic powers. They believe AD patients are insane, witches or wizards, cursed for past

wrongdoings, or are experiencing sickness within the family lineage. These beliefs are similar to the beliefs held by some Asian immigrants in the United States. Chow, & Gatz 2006; Zhan, (2004), suggests that Korean Americans were more likely to have stigmatizing views (74%) as compared to other ethnic groups, e.g., 40% of African American and 10% of older White adults (Ayalon & Arena, 2004). These findings have been confirmed by this study.

There are six witch camps in Ghana that house many elderly people who have AD and other related mental illness. These witch camps are scattered around Northern Ghana in ad hoc communities. People who live there are cast out of society and are chased away by accusations, threats, and violence. These elderly people live in varying degrees of discomfort. Some do not have access to potable water and are forced to walk for miles in the blistering heat of the dry season to fend for food (Palmer, 2010). The witch camps are Naboli, Gambaga, Gnani, Ngani, Kpatinga, and Kukuao (Palmer Karen, 2010).

In "Spellbound: Inside West Africa's Witch Camps," the author explores the destiny of women accused of committing supernatural crimes. She examined the paradox of why people rely on witchcraft, even as they fear it. More than 3,000 accused witches, mostly women, live in Ghana's six witch camps in deplorable conditions. They are not prisoners, but they can't leave (Palmer). Levkoff et al., (1998) reported that in the symptom appraisal stage, individuals develop a hypothesis about the attribution of symptoms and attempt to interpret them in a cause-effect manner. Symptoms of AD are

particularly subject to incorrect interpretations because they can resemble the symptoms of other common diseases of old age (1998).

Relation of HBM to the Perceived Seriousness Scale

The Health Belief Model (HBM) was used in this study as a means of conceptualizing the relation of perceived seriousness of AD and willingness to seek medical help. Data from this study suggest that there is minimal understanding of AD within the Ghanaian immigrant community. It was evident that the disease is perceived in a different context for the Ghanaian immigrants as compared to the mainstream culture. These cultural ideologies and traditional beliefs have a strong impact on seeking medical help because within the Ghanaian immigrant groups cultural beliefs are maintained as part of holding onto their cultural identity. It is understood that understanding of the disease is needed within the GI community to change perception on AD. One important discovery was that even though participants had minimal knowledge about AD, it was perceived to be a serious disease. This is evident since perceived seriousness had a positive correlation with knowledge ($r = .27, p < .01$). The use of the HBM framework with a larger scale study for the future might be helpful because it will offer more insight and awareness by giving more directions about the relationship between all of the variables in the HBM and willingness to seek medical help instead using only one single variable.

It is also important to note that formal education in Ghana is careful not to contradict with cultural beliefs since their belief systems have existed before colonization. Based on this, it is fair to note that level of education and years since

migration were not associated to willingness to seeking medical help. Futures studies should investigate the relations between cultural beliefs and willingness to seek medical help in addition to perceived seriousness. Studying cultural beliefs will enable researchers to identify why Ghanaian immigrants continue to hold on to their belief despite living in Western society. This will also bring awareness to the reasons why formal education does not interfere with cultural belief systems.

Also, it is important to note that these churches can be used as a starting ground to demystify the negative perceptions associated with AD within the GI group. Religious and ethnic factors have been identified as a part of an individual's perceptions of illness and may hold some explanatory power in the caregiving experiences and decisions of family caregivers (Levkoff et al, 1999). An understanding of the way in which ethnicity and religion function together in order to help and hinder the stages of help seeking undertaken by caregivers can enhance the quality of the care offered to caregivers and their relatives with AD (Levkoff et al., 1999). Based on this, future studies should examine other health education initiatives that have been successful in diverse communities by using the church as a starting place. This will enable the researcher to determine the impact that the churches will have on demystifying the negative association on AD. The churches will help family caregivers answer any questions that they need answered to be able to help care for their loved ones with AD.

Limitations

The study has several limitations which must be acknowledged in understanding the findings. First, when generalizing the findings, caution needs to be taken because the

study used a convenience sample with only six identified Ghanaian immigrant churches in Maryland and Virginia. The recruitment strategy was restricted mainly to those attending one of these churches and only those who were able to read and write the English language. Second, the survey instruments used in the study were not developed specifically for Ghanaian immigrants and might omit some Ghanaian cultural aspects of AD. Many did not understand the scientific terms used in the survey and were not able to fill it in to the best of their ability. Third, since data were obtained through self-reporting, recall bias may have affected the validity of the study findings. Causality between variables cannot be determined since a cross sectional correlational design was used rather than longitudinal information.

Implications for Further Action

The results of this study suggest that limited understanding, specific cultural ideologies, and belief system are factors preventing participants in seeking medical help. This study emphasizes the need for basic information about AD to enable better understanding within the community. It should also emphasize educational awareness within the Ghanaian immigrant community to demystify the myth of the disease. This can start as an educational initiative by visiting the churches to get them to understand AD from the medical perspective. As reported by participants in the study, churches are important sources of support where AD patients are taken for prayers and healing. Based on this information, the churches can be used as a platform to demystify the negative beliefs associated with seeking medical help. Segal et al. (2005) suggested that, contrary to common perceptions, stigma by itself is not the primary reason for poor utilization of

mental health services among older adults, but a reluctance to ask for professional help also contributes to poor utilizations of mental health services. Understanding of the situation will help eliminate some of the stigma associated with the help seeking for AD.

Recommendation for Future Research

Additional information related to AD and willingness to seek medical help was found in this study. Contrary to some finding in the existing literature, the results of this study indicated limited understanding of AD with the Ghanaian immigrant community and the need for educational activities, i.e. educate the churches on basic information on AD for better understanding. The results of this study have raised new concerns about what it will take to get this group of immigrants to understand AD and the importance of seeking medical help. Some questions to consider are how the cultural ideology portrays AD as demonic and how to get people to reason beyond those cultural beliefs.

While maintaining respect for the Ghanaian culture and belief system regarding AD, it is important to make an effort to increase awareness of the signs and symptoms of the disease, its stages, and to place emphasis on AD as a disease and not a stigmatized mental problem. Results from this study confirmed that educational level had no impact on willingness to seek medical help. It is possible to say that regardless of the educational level attained by study participant within the Ghanaian immigrant group, it does not affect cultural beliefs on AD and willingness to seek medical help. In relation to health literacy, it is fair to say that educated people within this group are only knowledgeable in their field. As reported by U.S. Department of Health and Human Services (2010), health

literacy requires knowledge on health topics. People with limited health literacy often lack knowledge or have misinformation about the body as well as the nature and causes of disease. Health information can be overwhelming even in persons with advanced literacy skills. Therefore it is important to emphasize the needs for more educational awareness on AD within the community.

Future research should include pre-and post-test effectiveness of culturally specific educational programs to enlighten participants about the subject of AD and western assistance by addressing health literacy among this population. It is reported that people with low health literacy may have difficulties with simple tasks such as understanding medical information (Sellars, Garza, Fryer, & Thomas, 2010). Health care utilization and participation may also be influenced by information obtained from an individual social network. Social supports provide individuals instrumental information, appraisal, and emotional support. Information supported may be the most critical in the understanding of medical mistrust. Where an individual receives information from those sources (both formal and informal) may increase the knowledge of how medical mistrust is perpetuated (Sellars, Garza, Fryer, & Thomas, 2010).

Based on the information presented above, it is important to establish some educational initiative through the churches even though knowledge was associated with the willingness to seek medical help. It is clear that people understand certain information based on their cultural network, and therefore since church is a strong social network for the Ghanaian immigrant community, using the churches as the first place to start educational initiatives will be helpful. It should also include a survey with less scientific

terms for better understanding and ease of completion. A psychometric analysis of the ADKS could enable greater utility for a more diverse population. In addition, assistance must be given to explain the survey to those who do not read or write English for a larger sample size.

Health care providers within the GI community should have a broader knowledge of cultural competency. Addressing the issues of health disparities is critical because our society needs to address cultural areas that contribute to health disparities. Research by Sellars, Garza, Fryer, and Thomas (2010) shows that individuals are less likely to use health care services due to barrier such as socio-economic status, lack of insurance coverage, and cultural beliefs. Based on this research it is evident that by reaching out to minority communities, health professionals will better understand the needs of their service communities. Finally, future research should focus on qualitative analysis to be able to capture the rich cultural ideologies and it relations on willingness to seek medical help.

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APPENDIX A
RESEARCH SUBJECTS INFORMATION FORM

RESEARCH SUBJECT INFORMATION FORM

VCU IRB NO: HM12695

TITLE: “Cultural Context of Alzheimer’s Disease: The Impact of perception and knowledge on willingness to seek medical help among Ghanaian immigrants in the United States.”

This form may contain words that you do not understand. Please ask the researcher to explain any words that you do not clearly understand. You may take home a copy of this form to think about or discuss with your family or friends before making your decision.

PURPOSE OF THE STUDY

The purpose of this study is to examine knowledge and perception of Ghanaian immigrants concerning Alzheimer’s disease (AD) and its influence on one’s willingness to seek medical help. The outcomes of this study will serve to determine which types of educational programs are needed within the Ghanaian immigrant community. You are being asked to participate in the study because you are an adult age 45 or older, were born and raised in Ghana, and currently attend one of the identified Ghanaian community churches within Virginia and Maryland.

DESCRIPTION OF THE STUDY.

If you decide to participate in this research study, you will be asked to complete a survey and answer some questions, assuming you have had all your questions answered and understand what you will be asked to do.

In this study you will be asked to answer three research questionnaires including some demographic information about yourself. These questions will be asking you about your knowledge and perception about Alzheimer’s disease and its impact on your ability and willingness to seek medical help for yourself or another within the Ghanaian immigrant community. This should take approximately 20-35 minutes.

RISKS AND DISCOMFORTS

There are no foreseeable risks to participating in this study.

BENEFITS TO YOU AND OTHERS

You may not get any direct benefit from this study, but the information we learn from participants may help us design better educational programs for the Ghanaian immigrant community in the United States.

COSTS

There are no costs for participating in this study other than the time you will spend in the completing the survey.

PAYMENT FOR PARTICIPATION

You will receive a \$5.00 gift certificate after completing the survey, as compensation for your time.

CONFIDENTIALITY

We will not tell anyone the answers you give us. Information is being collected only for the purpose of this research. No identifying information will be asked. Paper forms will be stored in a locked research area and kept in a locked file cabinet and will be stored until all data is entered in an electronic file. Electronic data will be kept until the research study is complete. Access to all data will be limited to the researcher. The findings of this study may be presented in meetings or published in papers, but no individual information will be used in these presentations or papers.

VOLUNTARY PARTICIPATION AND WITHDRAWAL

You do not have to participate in this study. If you choose to participate, you may stop at any time without any penalty. You may also choose not to answer particular questions that are asked in the study.

Your participation in this study may be stopped at any time by the researcher without your consent. The reasons might include:

- the researcher thinks it necessary for your health or safety;
- you have not followed study instructions;
- Administrative reasons require your withdrawal.

QUESTIONS

In the future, you may have questions about your participation in this study. If you have any questions, complaints, or concerns about the research, contact:

Dr. E Ayn Welleford at 1 804 828 1565

If you have any questions about your rights as a participant in this study, you may contact:

Office for Research

Virginia Commonwealth University

800 East Leigh Street, Suite 113

P.O. Box 980568

Richmond, VA 23298

Telephone: 804-827-2157

You may also contact this number for general questions, concerns, or complaints about the research. Please call this number if you cannot reach the research team or wish to talk to someone else. Additional information about participation in research studies can be found at <http://www.research.vcu.edu/irb/volunteers.htm>.

APPENDIX B

ALZHEIMERS DISEASE KNOWLEDGE SCALE (ADKS)

Alzheimer's Disease Knowledge Scale

Below are some statements about Alzheimer's disease (AD). Please read each statement carefully and circle whether you think the statement is **True or False**. If you aren't sure of the right answer, make your best guess. It's important to circle an answer for every statement, even if you're not completely sure of the answer.

- | | | | |
|------|-------|-----|---|
| True | False | 1. | People with Alzheimer's disease are particularly prone to depression. |
| True | False | 2. | It has been scientifically proven that mental exercise can prevent a person from getting Alzheimer's disease. |
| True | False | 3. | After symptoms of Alzheimer's disease appear, the average life expectancy is 6 to 12 years. |
| True | False | 4. | When a person with Alzheimer's disease becomes agitated, a medical examination might reveal other health problems to have caused the agitation. |
| True | False | 5. | People with Alzheimer's disease do best with simple instructions given one step at a time. |
| True | False | 6. | When people with Alzheimer's disease begin to have difficulty taking care of themselves, caregivers should take over right away. |
| True | False | 7. | Alzheimer's disease is caused by evil spirits. |
| True | False | 8. | In rare cases, people have recovered from Alzheimer's disease. |
| True | False | 9. | People whose Alzheimer's disease is not yet severe can benefit from psychotherapy for depression and anxiety. |
| True | False | 10. | If trouble with memory and confused thinking appear suddenly, it is likely due to Alzheimer's disease. |
| True | False | 11. | People with Alzheimer's disease in the Ghanaian community in US and in Ghana are isolated from the larger society. |
| True | False | 12. | Poor nutrition can make the symptoms of Alzheimer's disease worse. |
| True | False | 13. | People in their 30s can have Alzheimer's disease. |
| True | False | 14. | A person with Alzheimer's disease becomes increasingly likely to fall |

down as the disease gets worse.

- | | | |
|------|-------|--|
| True | False | 15. When people with Alzheimer's disease repeat the same question or story several times, it is helpful to remind them that they are repeating themselves. |
| True | False | 16. Once people have Alzheimer's disease, they are no longer capable of making informed decisions about their own care. |
| True | False | 17. Eventually, a person with Alzheimer's disease will need 24-hour supervision. |
| True | False | 18. Alzheimer's disease is a punishment from God to the family. |
| True | False | 19. Tremor, or shaking of the hands or arms, is a common symptom in people with Alzheimer's disease. |
| True | False | 20. Symptoms of severe depression can be mistaken for symptoms of Alzheimer's disease. |
| True | False | 21. Alzheimer's disease is one type of dementia. |
| True | False | 22. Trouble handling money or paying bills is a common early symptom of Alzheimer's disease. |
| True | False | 23. One symptom that can occur with Alzheimer's disease is believing that other people are stealing one's things. |
| True | False | 24. When a person has Alzheimer's disease, using reminder notes is a crutch that can contribute to decline. |
| True | False | 25. Prescription drugs that prevent Alzheimer's disease are available. |
| True | False | 26. Alzheimer's disease is perceived as an unclean illness |
| True | False | 27. Genes can only partially account for the development of Alzheimer's disease. |
| True | False | 28. Symptoms of Alzheimer's disease are best addressed with help from a fetish priest. |

- True False 29. Alzheimer's disease cannot be cured.
- True False 30. Most people with Alzheimer's disease remember recent events better than things that happened in the past.

Source. Carpenter, B.D., Balsis, S., Otilingam, P.G., Hanson, P.K., & Gatz, M. (in press). The Alzheimer's Disease Knowledge Scale: Development and psychometric properties. *The Gerontologist*.

APPENDIX C
PERCEIVED SERIOUSNESS SCALE (CHBMS)

Perception of Alzheimer's Disease Perceived Seriousness

The questions below address the perceived seriousness of Alzheimer's disease (AD). Please read each statement carefully and circle **Yes** if you agree with the statement or **No** if you disagree with the statement.

1. The thought of AD scares me -----Yes/No
2. When I think about AD I feel nauseous -----Yes/No
3. If I had AD, my career would be endangered-----Yes/No
4. When I think about AD, my heart beats faster-----Yes/No
5. AD would endanger my marriage-----Yes/No
6. AD is a hopeless disease-----Yes/No
7. My feelings about myself would change if I developed AD-----Yes/No
8. I am afraid to even think about AD-----Yes/No
9. My financial situation would be endangered if I got AD-----Yes/No
10. Problems I would encounter from AD would last a long time-----Yes/No
11. If I got AD, it would be more serious than I thought-----Yes/No
12. If I developed AD, my whole life would change-----Yes/No

Source: Champions Health Belief Model Scale (CHBMS) on the Perceived Seriousness

APPENDIX D

EXPERIENCE VERSUS NON EXPERIENCE SCALE

Alzheimer's Disease Experience versus Non-experience

Below are some statements about caregiving experience versus non-experience for Alzheimer's disease (AD). Please read each statement carefully and circle (**Yes**) if the question applies to you and (**No**) if it does not apply to you.

1. Do you personally know someone who has Alzheimer's disease (AD)?
Yes -----No
2. Do you know someone who is currently providing care for a family member or friend who has AD?
Yes -----No
3. Do you know someone who previously provided care for a family member or friend with AD?
Yes-----No
4. Currently, do you consider yourself to be the primary caregiver for a friend or relative with Alzheimer's disease?
Yes-----No
5. Have you personally cared for a family member or friend with AD in the past?
Yes-----No
6. Have you worked with individuals with AD in the past?
Yes-----No
7. Are you currently working with an individual with AD?
Yes-----No

APPENDIX E

WILLINGNESS TO SEEK MEDICAL HELP FOR AD

Willingness to Seek Medical Help for AD

Below are a number of statements pertaining to Alzheimer's disease (AD) and willingness to seek medical help. Please try to circle the best response. There are no "wrong" answers and the only right ones are those you honestly feel or believe. It is important you try to answer each item.

1. If I believed I was experiencing symptoms of AD or someone I knew was having symptoms of AD, my first inclination would be to seek medical help.
 - 3 - Identify completely with statement
 - 2 - Identify with statement
 - 1 - Do not identify with statement
 - 0 - Do not identify with statement at all

2. The idea of discussing symptoms of AD with a medical professional strikes me as a poor way dealing with the problem.
 - 3 - Identify completely with statement
 - 2 - Identify with statement
 - 1 - Do not identify with statement
 - 0 - Do not identify with statement at all

3. If I were experiencing signs and symptoms of AD, I would be confident that I could seek medical help.
 - 3 - Identify completely with statement
 - 2 - Identify with statement
 - 1 - Do not identify with statement
 - 0 - Do not identify with statement at all

4. There is something admirable in the attitude of a person who is willing to cope with AD symptoms without seeking medical help.
 - 3 - Identify completely with statement
 - 2 - Identify with statement
 - 1 - Do not identify with statement
 - 0 - Do not identify with statement at all

5. I would want to seek medical help if I was worried about someone I knew developing AD.
 - 3 - Identify completely with statement
 - 2 - Identify with statement

- 1 - Do not identify with statement
- 0 - Do not identify with statement at all

6. A person experiencing symptoms of AD is not likely to resolve it alone; he or she should seek medical help.

- 3 - Identify completely with statement
- 2 - Identify with statement
- 1 - Do not identify with statement
- 0 - Do not identify with statement at all

7. A person should work out his or her own problems; seeking medical help for AD would only be the last resort.

- 3 - Identify completely with statement
- 2 - Identify with statement
- 1 - Do not identify with statement
- 0 - Do not identify with statement at all

Adopted from Attitude Toward Seeking Professional Psychological Help Scale (ATSPPHS; Fischer & Farina, 1995).

APPENDIX F

DISEASE CASUE AND MEANING WITHIN THE
GHANAIAIAN CULTURAL CONTEXT

Disease Cause and Meaning within the Ghanaian Cultural Context.

Please answer these questions to the best of your knowledge. Write in your understanding to the questions. There are no right or wrong answers. The best answer is providing your honest opinion.

1. What do you believe is the cause of Alzheimer's disease?
2. What specific cultural beliefs and ideologies about individuals with Alzheimer's disease are characteristic of the Ghanaian culture?
3. What do you see as the most effective way to help individuals in the Ghanaian community dealing with Alzheimer's disease?

APPENDIX G
DEMOGRAPHIC SURVEY

Demographic Survey

AGE: What is your age	
GENDER:	Please check the appropriate box
Male	
Female	
EDUCATION:	Please check the appropriate box
Less than High School	
High School Diploma	
Some College / Vocational School	
College Graduate or Higher	
YEARS OF MIGRATION:	Please check the appropriate box
Six months to one year	
Two years	
Three to five years	
Six to ten years	
Eleven years or more	
CURRENT MARITAL STATUS:	Please check the appropriate box
Never Married	
Divorced	
Separated	
Widowed	
Married	
NUMBER OF CHILDREN:	
WHERE DO YOU LIVE	VIRGINIA / MARYLAND
Did you live in Ghana for 20 years before migration to America?	Yes / No
Were you born in Ghana?	Yes / No

VITA

Olivia Owusu-Boakyewaa was born on May 16, 1977, in Juaso Ashanti Akim, Ghana, West Africa. She migrated to join her family in the United States in 1995. Ms Owusu-Boakyewaa earned a Bachelor of Social Work Degree (BSW) from Virginia Commonwealth University in 2001 and a Master of Social Work Degree (MSW) with a certificate of Aging Studies at Virginia Commonwealth University in 2003. She is a clinical social worker who works for the Fairfax County Community Services Board as a Mental Health Program Supervisor/Specialist. She is the founder and CEO of Eye on Aging International LLC, a corporation devoted to doing research on aging issues for Africans in Diaspora.